BOSTON 2026

ims

AS OF 15 MAY 2026,
for the most up to date information
please visit ims-ieee.org

7 – 12 JUNE 2026

PROGRAM BOOK

RFIC RFSA RFTT ARFTG

IEEE

MTT-S
IEEE MICROWAVE THEORY & TECHNOLOGY SOCIETY

WavePro®

a Garlock® brand

Superior RF Performance. Unlimited Possibilities.

Ultra-Low-Loss Dielectric Material

Backed by decades of material science and manufacturing innovation, WavePro® delivers ultra-low-loss performance with a wide Dk range (2.0–20.4 and beyond) and exceptionally low Df (as low as 0.0004). Precision-manufactured, made-to-order shapes and clad or unclad panels offer the flexibility to tailor every detail. WavePro enables next-generation RF systems with the performance, reliability, and customization that elevate what's possible.

Join Us

» EuMW, October 4-9 | **Booth K86**

Products now available online. Order today!
WaveProAntenna.com

IMS WEEK

IS ALL ABOUT CONNECTIONS…

From social media to downloading papers in real time — we've got you covered!

JOIN THE CONVERSATION:

Make sure you're engaging with IMS2026 on our social channels:

Follow us on X: https://x.com/MTT_IMS

Follow us on Instagram: http://instagram.com/mtt_ims

Like us on Facebook: http://www.facebook.com/IEEE.MTTS.IMS

Follow us on LinkedIn: https://www.linkedin.com/company/ieee-international-mtt-symposia-ims

Follow us on YouTube: http://www.youtube.com/user/mttims

Don't forget to use the official IMS hashtag: **#IMS2026**

There's an app for that!
Download papers and presentations in real time!

The IMS app is now available in the Apple App store and Google Play store. Install the app on your Android or iOS device to view the full schedule of Workshops, Bootcamps, RFIC, RFSA and RFTT Technical Sessions, ARFTG, Panel Sessions, Social Events and Exhibition information. On-site during this week you will be able to download technical papers and presentations, access Workshop and Bootcamp materials, locate exhibitors and explore all that Boston, MA has to offer. Download today!

To download the app, search for 'IEEE IMS' on the app store for your device or scan a QR code below.

For assistance, please email: support@mtt.org

Download on the App Store

ANDROID APP ON Google play

Wifi is available throughout the Convention Center!

SSID: IMS2026

Password: Boston26

IMS VIRTUAL RESOURCES

This is where you can download the Symposium Proceedings for RFIC, RFSA, RFTT and ARFTG as well as the Workshop Proceedings. You will need the email you used to register and your badge or registration number.

https://ims-ieee.org/virtualresources

IMS2026 Table of Contents

WELCOME TO IMS2026 IN BOSTON

TIMOTHY HANCOCK

GREGORY LYONS

The Boston IMS Steering Committee welcomes the microwave community to the IEEE International Microwave Theory and Technology (MTT) Symposia (IMS2026). IMS2026 is "Revolutionizing RF" and this year's event is reorganized to focus attendees on the key technical areas of IMS and features the RF Integrated Circuits (RFIC) Symposium, the RF Systems and Applications (RFSA) Symposium, the RF Technology and Techniques (RFTT) Symposium, and the Automatic Radio Frequency Techniques Group (ARFTG) Microwave Measurements Conference. This reorganization allows IMS to continue to grow and evolve with an increasing emphasis on RF systems and applications along with the traditional technical content of RF subsystems and components. The format of the week begins with the RFIC Symposium on Sunday evening with a plenary followed by the RFIC Reception. RFSA and RFTT share a joint plenary on Monday evening followed by the IMS Welcome Reception at View Boston, atop the Prudential Center. The technical sessions span Monday through Thursday with ARFTG technical sessions on Friday. Workshops are on Sunday and Monday with select RFSA workshops on Thursday.

The IMS Industry Exhibition continues to be a centerpiece of the week on Tuesday–Thursday and will feature more than 525 exhibitors and more than 930 booths to showcase microwave hardware, software, components, and systems. The exhibition floor also features the MicroApps Theater, the Societies' Pavilion, the Startup Pavilion, and the new RF System Pavillion, which will showcase demonstrations of communication and sensing systems. On Wednesday afternoon the IMS exhibition floor will host the 8,000+ attendees as part of the Industry-Hosted Reception for all of those participating in IMS2026. The evenings will be filled with networking opportunities, both organized and informal. Tuesday evening will feature the Amateur Radio Social, the Young Professionals Social Event, and the Women in Microwaves Reception and on Wednesday evening, there will be the MTT-S Awards Banquet, where MTT-S awards are presented. Below is a list of the exciting changes for IMS2026:

- IMS now stands for the IEEE International MTT Symposia (IMS) to more closely align with the IEEE Microwave Theory and Technology Society (MTT-S).
- RF Integrated Circuits (RFIC) Symposium is unchanged from past years with a focus on integrated circuit design and is a critical technical anchor to the beginning of the week.
- RF Systems and Applications (RFSA) Symposium focuses on integrating components and sub-systems within the constraints of available signal-processing techniques and digital processing hardware driving innovation in communication and sensing systems and applications. This year RFSA has a special focus on Integrated Sensing and Communications (ISAC).
- RF Technology and Techniques (RFTT) Symposium focuses on the design of component technology within the constraints of electromagnetics and manufacturing limitations driving innovation in filters, passive circuits, heterogeneous packaging, semiconductor devices and active circuit technologies. This year RFTT has a special focus on quantum technology.
- New IMS Joint RFSA/RFTT Plenary Session fireside chat format.
- Introduction of the RFSA RF Systems Dialogue (formerly the Future G Summit).
- New RF Systems Pavilion on the exhibition floor with cross-vendor demonstrations of communications and sensing systems.
- Unification of the Industry and Student paper competitions across RFIC, RFSA, and RFTT with finalists notified before the symposia and highlighted at the RFIC and IMS Showcases.
- Introduction of Thursday RFSA Workshops that do not overlap with RFSA technical sessions.
- New IMS Bootcamp on Phased Arrays focusing on RF systems aspects.
- Re-introduction of Post-Deadline paper submission for RFSA and RFTT to capture high-quality, late-breaking technical results for the broader IMS audience.

We welcome you to Boston for IMS2026!

Timothy Hancock, IMS2026 General Co-Chair
Gregory Lyons, IMS2026 General Co-Chair


MOHYEE MIKHEMAR


BODHISATWA SADHU


DEBOPRIYO CHOWDHURY


BRIAN FLOYD


CHRISTIAN WALDSCHMIDT


JEFFREY NANZER


STEVEN TURNER


JOSEPH BARDIN


STEVEN BOWERS

RFIC

Join us at the IEEE Radio Frequency Integrated Circuits Symposium (RFIC) in Boston, June 7th to 9th. The program starts on Sunday with workshops, a technical lecture, plenary session, and the reception. Monday and Tuesday feature 29 technical sessions, including a Monday lunch panel. We conclude the conference with the student-industry networking event on Tuesday.

This year features a record number of submissions—30% more than last year—resulting in 29 high-quality technical sessions. We also offer an educational day on Sunday, featuring 11 workshops and an outstanding technical lecture by Prof. Bram Nauta on receiver design with focus on high-linearity mixer-first receivers.

The symposium features two plenary presentations exploring RFIC through different lenses: Dr. Oliver Dial of IBM highlights the technology's contribution to quantum computing breakthroughs, and UCLA's Prof. Abidi examines the development of RF CMOS and the specific circuit designs that have proven most resilient over time.

Networking is essential, and we balance our technical side with great social events. On Sunday, the reception is the largest RFIC gathering globally in one room, featuring good food and drinks while you enjoy networking, interactive hardware demos and posters from the best papers.

Monday features an entertaining lunch panel where students and industry experts compete for the title of the most knowledgeable.

On Tuesday, we conclude the conference with the student-industry networking event, providing a complimentary opportunity for students to engage with industry leaders over food and drinks, opening doors for potential internships and career interviews.

Mohyee Mikhemar, RFIC2026 Symposium Chair
Bodhisatwa Sadhu, RFIC2026 TPC Chair
Debopriyo Chowdhury, RFIC2026 TPC Vice Chair

RFSA

Welcome to the inaugural IEEE Radio Frequency Systems and Applications (RFSA) Symposium. The RFSA symposium is dedicated to fostering discussions on MHz to THz microwave systems for applications that span radar, communications, healthcare, photonics, space, and instrumentation markets. Building on the outstanding tradition of IMS, RFSA aims to promote and elevate systems and applications content within MTT-S while gathering and growing the community of hardware, algorithm, system, and end-use application researchers working in this space.

The RFSA2026 Symposium features two full days of technical programs, featuring communications-centric content on Tuesday and sensing-centric content on Wednesday. RFSA workshops will be held throughout the week, including a new time slot on Thursday for three full-day RFSA workshops on quantum, AI, and sustainability. Together with RFIC and RFTT, RFSA will have multiple lunchtime panels, covering spectrum sharing, automotive sensing & communications, AI, and sustainability.

A highlight of the RFSA Symposium will be the newly formed RF Systems Dialogue, scheduled for Tuesday. The dialogue will combine technical content, educational content, and panel conversations, focused on the topic of ISAC: Integrated Sensing and Communications. The event includes a social gathering and interactive discussions on Tuesday evening with industry leaders who work on ISAC. This RF Systems Dialogue is intended to serve as an annual cornerstone event for the RFSA community.

Welcome to Boston and we look forward to engaging together throughout the week as we learn about the latest breakthroughs in RF systems and applications!

Brian Floyd, RFSA2026 Symposium Chair
Christian Waldschmidt, RFSA2026 TPC Chair
Jeffrey Nanzer, RFSA2026 TPC Vice Chair

RFTT

We are thrilled to welcome you to the inaugural IEEE MTT-S RF Technology & Techniques (RFTT) Symposium. This new symposium carries forward the core tradition of IMS with a focus on microwave passive components, packaging, active devices, discrete microwave circuits, computer-aided design, and computational EM and makes up approximately half of the IMS technical content.

We kick off the symposium with interactive workshops on Sunday and Monday taking a deep dive into topics including power amplifiers, quantum, packaging, AI, and space. Our core technical session run Tuesday through Thursday. This year we feature two late breaking news sessions joint with RFSA. These sessions showcase the latest groundbreaking research and results from components to circuits to systems.

This year we feature a special Quantum Event with a Sunday "Bootcamp", the "Microwave Quantum Engineering: From Methods to Hardware and Algorithms" workshop also on Sunday, the "Microwave Design for Superconducting Qubits and Quantum Amplifiers: From Fundamentals to Scalable Architectures" workshop on Monday, the Wednesday lunchtime panel: "How will the Quantum Computing Explosion Drive New Growth in the RF Electronics Supply Chain – and RF Engineering Careers?" panel session at lunch, and three quantum focused technical sessions on Wednesday.

In addition to the technical offerings, RFTT is a hub for connection. We encourage you to network during coffee breaks, evening social events, and on the exhibition floor. These informal moments are where you often find unique insights and solutions to your toughest technical challenges.

We hope you have an incredible and productive RFTT2026!

Steven Turner, RFTT2026 Symposium Chair
Joseph Bardin, RFTT2026 TPC Chair
Steven Bowers, RFTT2026 TPC Vice Chair

IMS2026 STEERING COMMITTEES

BOSTON, MA

IMS2026 Steering Committee

Executive Committee

Gregory Lyons, *General Co-Chair*
Timothy Hancock, *General Co-Chair*
Steven Turner, *TPC Coordinating Chair*
Jackie Vitaz, *Marketing and Publications (MP3) Chair*
Kevin Chuang, *Finance Chair*
Christal Gordon, *Inclusion & Outreach Chair*
Kelly Johnson, *Inclusion & Outreach Co-Chair*
Steven Turner, *RFTT Symposium Chair*
Brian Floyd, *RFSA Symposium Chair*
Mohyee Mikhemar, *RFIC Symposium Chair*
Andrej Rumiantsev, *ARFTG Symposium Chair*
Elsie Vega, *Event Program Manager*
Robert Alongi, *Treasurer*
Amanda Scacchitti, *MP3 Manager*
Dave Weil, *Exhibition Director*
Tina Vickery, *Exhibition Operations Manager*
JK McKinney, *IMSEC Co-Chair*

Advisory Committee

Steven Rosenau, *IMS Past Chair (2025)*
Jay Banwait, *IMS Past Chair (2025)*
Mark Gouker, *IMS Past Chair (2019)*
Larry Kushner, *IMS Past Chair (2019)*
Fred Schindler, *IMS Past Chair (2009)*

TPC *(Technical Program Committee)*

Steven Turner, *TPC Coordinating Chair*
Nick Kolias, *Plenary Session Co-Chair*
Dan Green, *Plenary Session Co-Chair*
Sandy Owens, *Electronic Paper Management*
Holger Maune, *Workshops Coordinating Chair*
Jim Buckwalter, *Panel Coordinating Chair*
Greg Flewelling, *Bootcamp Coordinating Chair*
Nuno Borges Carvalho, *RF Systems Pavilion Co-Chair*
Ramesh Gupta, *RF Systems Pavilion Co-Chair*
Anton Geiler, *Student Design Competition Chair*
Can Cui, *Student Design Competition Co-Chair*
Steve Lichwala, *MicroApps Co-Chair*
Laila Salman, *MicroApps Co-Chair*
Michael Virostko, *MicroApps Co-Chair*
Kevin Chuang, *Industry Workshops Chair*
Francesco Barale, *Industry Workshops Co-Chair*

MP3 *(Marketing/Publicity/Promotion/Publications)*

Jackie Vitaz, *MP3 Chair*
Amanda Scacchitti, *MP3 Manager*
Tyler Day, *Marketing Agency (mdg)*
Annie Henderson, *Marketing Agency (mdg)*
Mark Slater, *Website/Mobile App Professional Staff*
Jason Soric, *Microwave Magazine Guest Editor*

LAOC *(Local Arrangements/Operations Committee)*

Elsie Vega, *Event Program Manager*
Robert Alongi, *Treasurer*
Susie Horn, *Visa Support*
Susie Horn, *Student Ambassador Coordination Chair*
Aravind Nagulu, *Student Ambassador Coordination Co-Chair*
Rod Kim, *Student Ambassador Coordination Co-Chair*
Pranav Kumar, *Student Ambassador Coordination Co-Chair*
Elsie Vega, *Protocol/Gifts*
Dillian Waldron, *Conference/Event Planner*
Taylor Lineberger, *Conference/Event Planner*

Focus Groups

Christal Gordon, *Inclusion & Outreach Chair*
Kelly Johnson, *Inclusion & Outreach Co-Chair*
Adilson Cardoso, *Young Professionals Chair*
Gerald DeJean, *Young Professionals Co-Chair*
Robin Ying, *Young Professionals*
Cindy Baker, *Women in Microwaves Chair*
Jennifer Byford, *Women in Microwaves Co-Chair*
Ryan Lagoy, *Startup Pavilion Chair*
Philip Zurek, *Startup Pavilion Co-Chair*
Noah Robitshek, *Startup Pavilion Co-Chair*
Enrique Gonzalez, *Project Connect Liaison*
Jena Stone, *Project Connect Liaison*
Jayshri Kulkarni, *STEM Chair*
Steven Lardizabal, *Stem Co-Chair*
Chris Galbraith, *Amateur Radio Chair*

Exhibition Management

Dave Weil, *Exhibition Director*
Tina Vickery, *Exhibition Operations Manager*
Pete Erickson, *Corporate Management*
Aravind Nagulu, *University Exhibits/Liaison Co-Chair*
Rod Kim, *University Exhibits/Liaison Co-Chair*
Steven Stitzer, *Historical Exhibit Co-Chair*
Janusz Majewski, *Historical Exhibit- Local Chair*
Chris Galbraith, *Historical Exhibit- Local Co-Chair*

RFIC2026 Steering Committee

Mohyee Mikhemar, *Symposium Chair*
Bodhisatwa Sadhu, *TPC Chair*
Debopriyo Chowdhury, *TPC Vice Chair*
Jane Gu, *Student Chair*
Vadim Issakov, *Industry Chair*
Patrick Reynaert, *Publications Chair*
Hyun-Chul Park, *Publications Co-Chair*
Jennifer Kitchen, *Systems and Applications Forum Chair*
Omeed Momeni, *JSSC Guest Editor*
Bahar Farahani, *TMTT Guest Editor*
Joseph Cali, *TMTT Guest Co-Editor*
Vito Giannini, *Workshops Chair*
Wanghua Wu, *Workshops Vice Chair*
Yao-Hong Liu, *Panel Session Chair*
Travis Forbes, *Publicity Chair*
Hyun-Chul Park, *Asia Pacific Liaison*
Antoine Frappe, *European Liaison*
Antoine Frappe, *Secretary*
Joseph Cali, *Submission Site and Sesson Organization Chair*
Michael Oakley, *Website Chair*

RFSA2026 Steering Committee

Brian Floyd, *Symposium Chair*
Christian Waldschmidt, *TPC Chair*
Jeffrey Nanzer, *TPC Vice Chair*
Shobha Sundar Ram, *Student Paper Competion Chair*
Swami Sankaran, *Industry Paper Competition Chair*
Jürgen Hasch, *RF Systems Dialogue Chair*
Marty Apa, *RF Systems Dialogue Committee Member*
Jungah Lee, *RF Systems Dialogue Committee Member*
Olga Boric-Lubecke, *RF Systems Dialogue Committee Member*
Kenneth Kolodziej, *RF Systems Dialogue Committee Member*
Gernot Hueber, *Publications Chair*
Ifana Mahbub, *Interactive Forum Chair*
Chris Rodenbeck, *TMTT Guest Editor*
Holger Maune, *Workshops Chair*
Taylor Barton, *Workshops Vice-Chair*
Walter Wall, *Panel Session Chair*
Alexander Kölpin, *Keynote Speaker Chair*
Wooyeol Choi, *Publicity Chair*
Ingrid Ullmann, *Secretary*

RFTT2026 Steering Committee

Steven Turner, *Symposium Chair*
Joseph Bardin, *TPC Chair*
Steven Bowers, *TPC Vice Chair*
Jasmin Grosinger, *Student Paper Competition Chair*
Najme Ebrahimi, *Student Paper Competition Vice Chair*
Rui Ma, *Industry Paper Competition Chair*
Jesse Moody, *Industry Paper Competition Vice Chair*
Chinmoy Saha, *Publications Chair*
Jon Comeau, *Publications Vice Chair*
Jason Soric, *Interactive Forum Chair*
Roberto Gomez Garcia, *TMTT Guest Editor*
Jae-Sung Rieh, *TMTT Guest Vice Editor*
Alírio J. Soares Boaventura, *Workshops Chair*
Amelie Hagelauer, *Workshops Vice Chair*
Jim Buckwalter, *Panels & Special Events Chair*
Kim Eilert, *Panels & Special Events Vice Chair*
Constantine Sideris, *Publicity Chair*
Ian Rippke, *Secretary*

IMS2026 TECHNICAL PAPER COMMITTEES

BOSTON, MA

RFIC2026 Technical Paper Committee

Hamidreza Aghasi
Zeshan Ahmad
Kimia Ansari
Bichoy Bahr
Harshpreet Bakshi
Aritra Banerjee
Abdellatif Bellaouar
Andrea Bevilacqua
Roxann Broughton-Blanchard
Andreia Cathelin
Ying Chen
Yong Chen
Dmytro Cherniak
Sungwon Chung
Emanuel Cohen
Wei Deng
Zhiming Deng
Tolga Dinc
Kostas Doris
Najme Ebrahimi
Ahmed Elkholy
Mohamed Elkhouly
Bahar Farahani
Salvatore Finocchiaro
Travis Forbes
Antoine Frappe
Minoru Fujishima
Hao Gao
Vito Giannini
Alexandre Giry
Giuseppe Gramegna
Marcus Granger-Jones
Jane Gu
Subhanshu Gupta
Ruonan Han
Chun-Huat Heng
Hsieh-Hung Hsieh
Song Hu
Gernot Hueber
Mohamed Ibrahim
Aly Ismail
Vadim Issakov
Chen Jiang
Khaled Khalaf
Jennifer Kitchen
Kj Koh
Oleh Krutko
Wooram Lee
Sensen Li
Hanli Liu
Yao-Hong Liu
Matilda Livadaru
Xun Luo
Muhammad Waleed Mansha
Andrea Mazzanti
Sajjad Moazeni
Omeed Momeni
Susnata Mondal
Jesse Moody
Emily Naviasky
Pierluigi Nuzzo
Kenichi Okada
Arun Paidimarri
Hyun-Chul Park
Aarno Pärssinen
Harald Pretl
Huizhen Qian
Laleh Rabieirad
Mustafijur Rahman
Negar Reiskarimian
Patrick Reynaert
Swaminathan Sankaran
Shahriar Shahramian
Shintaro Shinjo
Alexandre Siligaris
Teerachot Siriburanon
Sushil Subramanian
Steven Turner
Vojkan Vidojkovic
Marco Vigilante
Florian Voineau
Renyuan Wang
Justin (Chiahsin) Wu
Wanghua Wu
Rabia Yazicigil
Jingzhi Zhang
Tong Zhang
Jin Zhou

RFSA2026 Technical Paper Review Committee

Dave Aditya
Arnaud Amadjikpe
Shuhei Amakawa
Akim Babenko
Olga Boric-Lubecke
Slim Boumaiza
Jan Budroweit
Emanuele Cardillo
Nuno Carvalho
Malgorzata Celuch
Sudipto Chakraborty
Debabani Choudhury
Chenhao Chu
Thomas Clark
Jonathan Comeau
Alessandra Costanzo
Christian Damm
Marcus daSilva
Najme Ebrahimi
Rudy Emrick
Kamran Entesari
Aly Fathy
Morteza Fayazi
Ricardo Figueiredo
Markus Gardill
Katia Grenier
Jasmin Grosinger
Changzhan Gu
Kamel Haddadi
Naoki Hasegawa
Rashaunda Henderson
Glenn Hopkins
Tzu-Yuan Huang
Khaldoon Ishmael
Shekh Md Mahmudul Islam
Mona Jarrahi
Rachel Jarvis
Mahdi Javid
Pekka Kangaslahti
Russell Kenney
Alexander Koelpin
KJ Koh
Kenneth Kolodziej
Changzhi Li
Sensen Li
Changjun Liu
Zheng Liu
Victor Lubecke
Fabian Lurz
Ifana Mahbub
Jon Martens
Kenneth Mays
Nizar Messaoudi
Paolo Mezzanotte
Julio Navarro
Edward Niehenke
Thas Nirmalathas
Kenjiro Nishikawa
Joachim Oberhammer
Arnaldo Oliveira
Richard Ordonez
Marcus Pan
Giacomo Paolini
Nils Pohl
Negar Reiskarimian
Patrick Roblin
Steven Rosenau
Robert Schmid
Dominique Schreurs
Xiaobang Shang
Hasan Sharifi
Jim Sowers
Adrian Tang
Chris Thomas
Zuo-Min Tsai
Ingrid Ullmann
Ahmet Cagri Ulusoy
Thomas Ussmueller
Davi V. Q. Rodrigues
Stavros Vakalis
Suresh Venkatesh
Roberto Vincenti Gatti
Dieff Vital
Jacquelyn Vitaz
Martin Vossiek
Walter Wall
Jan Wessel
Chung-Tse Michael Wu
Hung-Wei Wu
Vadim Yakovlev
Kazuya Yamamoto
Mohammad Zarifi
Volker Ziegler

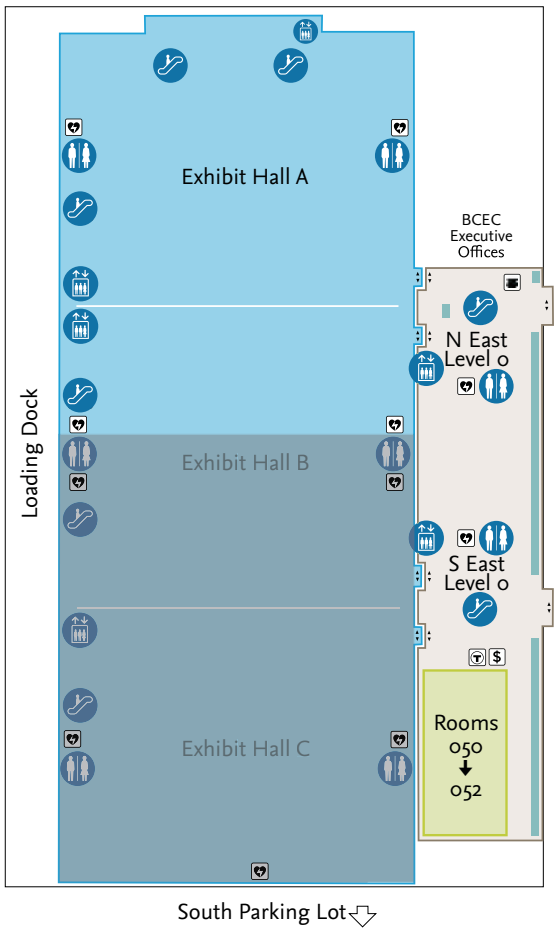
RFTT2026 Technical Paper Review Committee

Mohammad Abu Khater
Ibrahim Kagan Aksoyak
Richard Al Hadi
Bayaner Arigong
Peter Asbeck
Amit Kumar Baghel
Dominique Baillargeat
Taylor Barton
Simone Bastioli
Ramon Beltran
Jad Benserhir
Roee Ben-Yishay
Pierre Blondy
Alirio Boaventura
Luciano Boglione
Fabrizio Bonani
Hermann Boss
Maurizio Bozzi
Shi Bu
Jim Buckwalter
Djuradj Budimir
Guillaume Callet
Vittorio Camarchia
Charles Campbell
Christian Carlowitz
Robert Caverly
Wing Shing Chan
Chia-Chan Chang
Hong-Yeh Chang
Goutam Chattopadhyay
Austin Chen
Emery Chen
Kenle Chen
Zhizhang Chen
Pei-Ling Chi
Jun Choi
Kevin Chuang
Julio Costa
Spyridon Daskalakis
Debasis Dawn
William Deal
Sagar Dhar
Damla Dimlioglu
Tarek Djerafi
Simona Donati Guerrieri
Paul Draxler
Aleksey Dyskin
John Ebel
Kim Eilert
Omar Elmazria
Mohamed Fahmi
Ali Farid
Patrick Fay
Rhonda Franklin
Edward Gebara
Anthony Ghiotto
Pere L. Gilabert
Roberto Gomez-Garcia
Xun Gong
Jose Luis Gonzalez Jimenez
Kavita Goverdhanam
Amelie Hagelauer
Michael Hamilton
Deukhyoun Heo
Damon Holmes
Da Huang
James Hwang
Robert Jackson
Hamhee Jeon
Sanggeun Jeon
Amit Jha
Dan Jiao
Mehmet Kaynak
Arvind Keerti
Dmitry Kholodnyak
Rod Kim
Kevin Kobayashi
Nicholas Kolias
Sushil Kumar
Gregor Lasser
Ko-Tao Lee
Timothy Lee
Chun-Hsing Li
Chenyu Liang
Ernesto Limiti
Kun-You Lin
Julien Lintignat
Lei Liu
Ruochen Lu
Alon Ludwig
Xun Luo
Lina Ma
Rui Ma
Stephen Maas
Giuseppe Macchiarella
Peter Magnee
Raafat Mansour
Holger Maune
Chinchun Meng
Jesse Moody
Amir Mortazawi
Michal Mrozowski
Koichi Murata
Nguyen Nguyen
Phat Nguyen
Luis Cotimos Nunes
Vladimir Okhmatovski
Caglar Ozdag
Philipp Pahl
Bishnu Patra
Jose Pedro
Dimitrios Peroulis
Luca Perregrini
Anh-Vu Pham
Anna Piacibello
Luca Pierantoni
Marco Pirola
Jean-Olivier Plouchart
Zoya Popovic
Neelam Prabhu Gaunkar
Dimitra Psychogiou
Joe Qiu
Roberto Quaglia
Rüdiger Quay
Oscar Quevedo-Teruel
Frederick Raab
Hamed Rahmani
Franco Ramirez
Jose Rayas-Sanchez
Theodore Reck
Ian Rippke
Michael Roberg
Jorge A. Ruiz-Cruz
Mohammad Sadrabadi
Shahrokh Saeedi
Chinmoy Saha
Abhishek Sahu
Laila Salman
Safa Salman
Kamal Samanta
Costas Sarris
Munkyo Seo
George Shaker
Ki Shin
Nick Shtin
Constantine Sideris
Hjalti Sigmarsson
Christopher Silva
Richard Snyder
Zhe Song
Jason Soric
Joseph Staudinger
Wolfram Stiebler
Almudena Suarez
Alexandru Takacs
Manos Tentzeris
Werner Thiel
Fabian Thome
Cristiano Tomassoni
Sorin Voinigescu
Photos Vryonides
Rajah Vysyaraju
Mahmoud Wagih
Guoan Wang
Hao Wang
Huei Wang
Andreas Wentzel
Ke Wu
Johana (Jonmei) Yan
Sognan Yang
Tao Yang
Yansong Yang
Zhi (Jackie) Yao
Ming Yu
Hualiang Zhang
Lei Zhang
Yulong Zhao
Xinyu Zhou
Anding Zhu

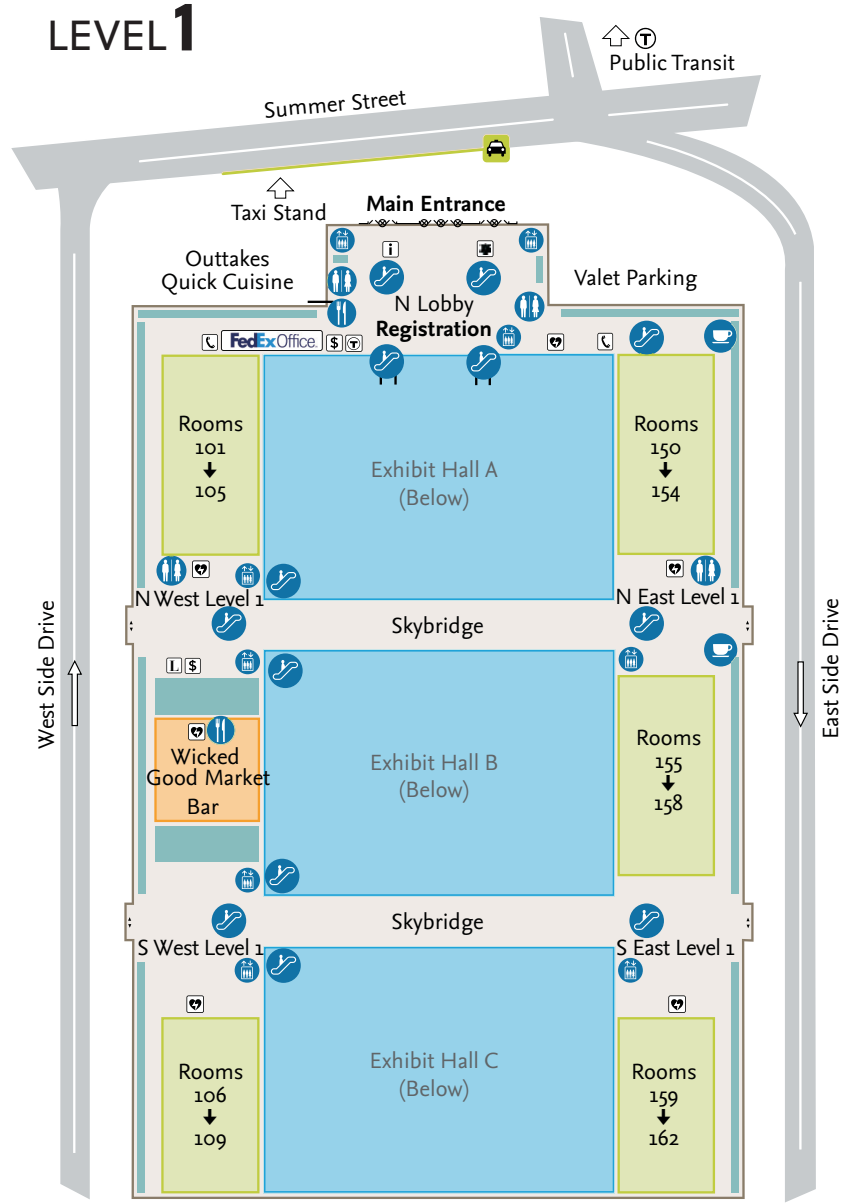
GETTING AROUND THE CONVENTION CENTER

BOSTON, MA

LEVEL 0

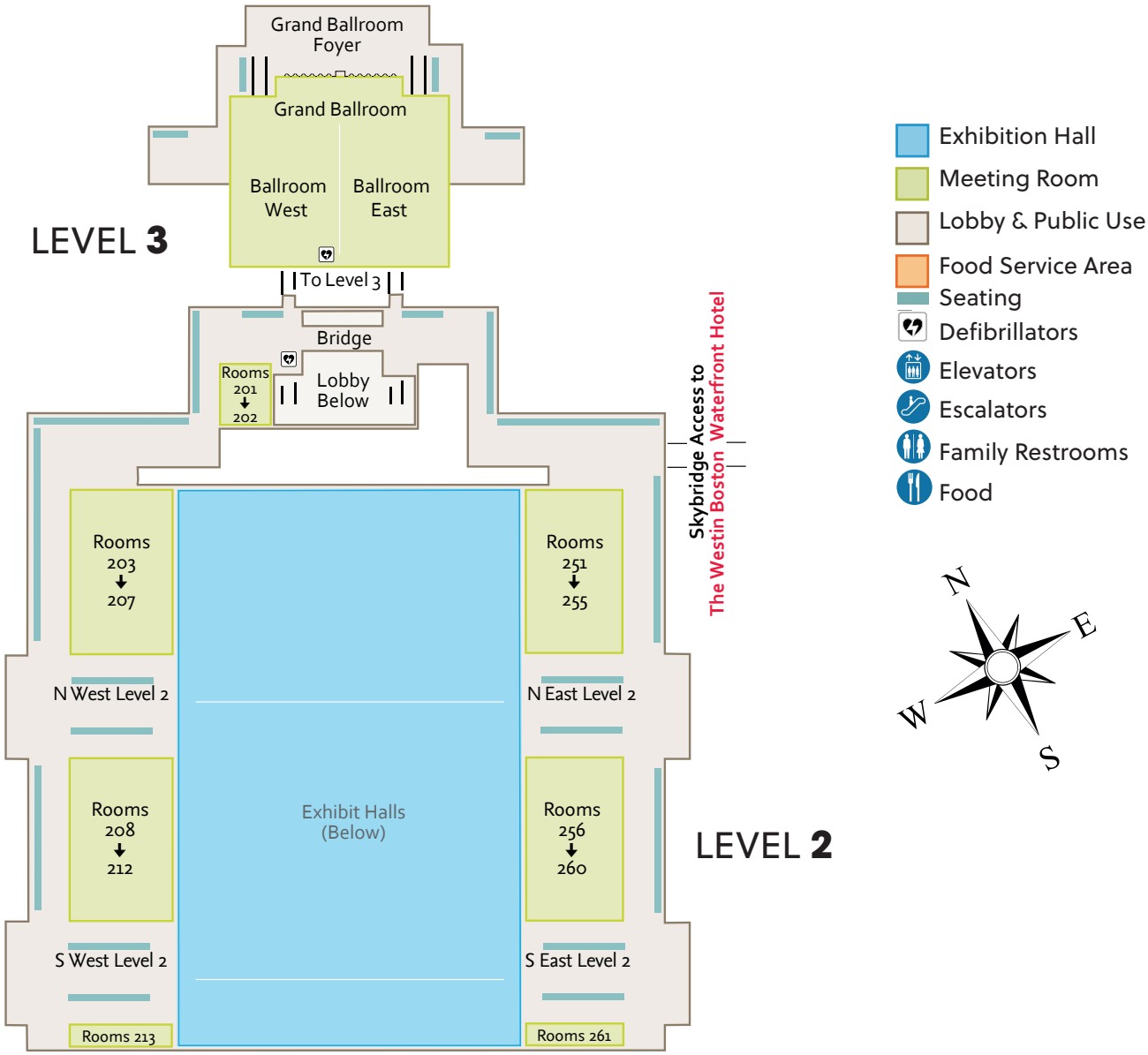


LEVEL 1



GETTING AROUND THE CONVENTION CENTER

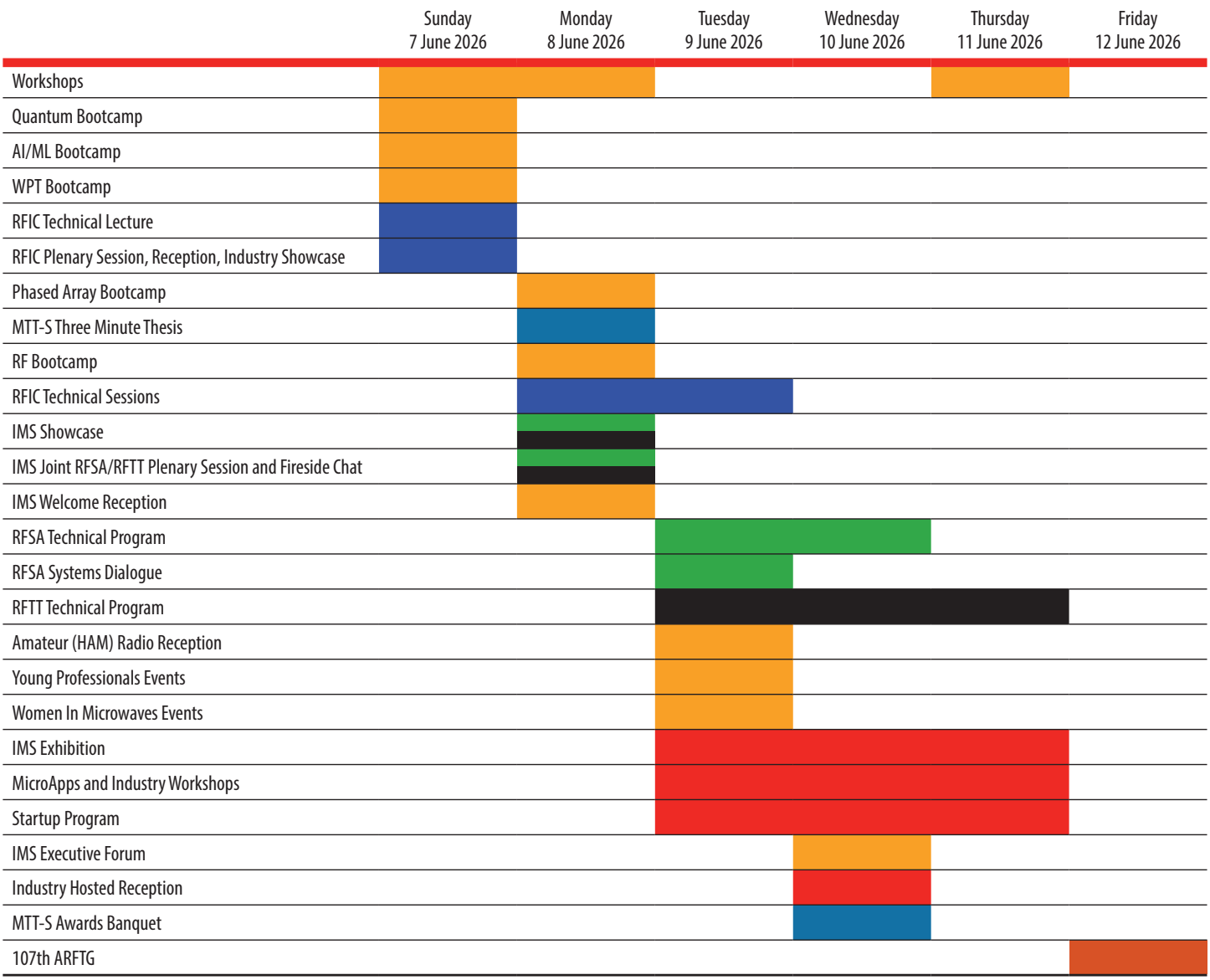
BOSTON, MA



Coffee Breaks

Sunday	AM— 09:40 – 10:10	Level 1 and 2 Meeting Room Foyers
	PM— 15:10 – 15:40	Level 1 and 2 Meeting Room Foyers
Monday	AM— 09:40 – 10:10	Level 1 and 2 Meeting Room Foyers
	PM— 15:10 – 15:40	Level 1 and 2 Meeting Room Foyers
Tuesday	AM— 09:40 – 10:10	IMS Exhibit Floor
	PM— 15:10 – 15:40	IMS Exhibit Floor
Wednesday	AM— 09:40 – 10:10	IMS Exhibit Floor
	PM— 15:10 – 15:40	IMS Exhibit Floor
Thursday	AM— 09:40 – 10:10	IMS Exhibit Floor
	PM— 15:10 – 15:40	Level 2 Meeting Room Foyer

THE WEEK AT A GLANCE



IMS | RFIC | RFSA | RFTT | Exhibition | MTT-S | ARFTG

On-site registration for all events will be available in the Thomas M. Menino Convention and Exhibition Center (MCEC).

ON-SITE REGISTRATION HOURS

Saturday, 6 June 2026	08:00 – 17:00
Sunday, 7 June 2026	07:00 – 18:00
Monday, 8 June 2026	07:00 – 18:00
Tuesday, 9 June 2026	07:00 – 18:00
Wednesday, 10 June 2026	07:00 – 18:00
Thursday, 11 June 2026	07:00 – 16:00
Friday, 12 June 2026	07:00 – 10:00

BOXED LUNCH DISTRIBUTION:

Boxed Lunch Distribution will take place Sunday–Thursday.

Sunday:	Room 258ABC
Monday:	Room 258ABC
Tuesday:	Room 258ABC
Wednesday:	Northeast Lobby, 2nd Level
Thursday:	Northeast Lobby, 2nd Level

Note: Boxed Lunches are included with Workshops and Bootcamps. They are also available for pre-purchase in the registration system through 5 June 2026 (the advance registration deadline).

THANK YOU TO OUR IMS SPONSORS

DIAMOND SPONSOR

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

qorvo
all around you

PLATINUM SPONSOR

AARONIA AG
WWW.AARONIA.DE

KEYSIGHT

MACOM

GOLD SPONSOR

Anritsu
Advancing beyond

ROHDE&SCHWARZ
Make ideas real

SILVER SPONSOR

ERAVANT
FORMERLY SAGE MILLIMETER

Mini-Circuits

FALCOMM

Marki microwave

RFMW

samtec

MilliBox
ANTENNA TEST SYSTEMS

TELEDYNE
Storm Microwave

Amphenol
SV MICROWAVE

CORPORATE SPONSOR

RTX

COLLINS AEROSPACE | PRATT & WHITNEY | RAYTHEON

OFFICIAL MEDIA SOURCE OF MTT-S

IEEE microwave MAGAZINE

MEDIA PARTNERS

everythingRF

Electronic Design

Microwaves&RF

Military+Aerospace Electronics

MEDIA SPONSOR

RF Globalnet

MEDIA AFFILIATE

AEROSPACE & DEFENSE TECHNOLOGY
The Engineer's Guide to Design & Manufacturing Advances

Microwave Journal

MICROWAVE PRODUCT DIGEST
& TECHNOLOGIES

SUNDAY WORKSHOPS | 08:00 – 17:20 | SUNDAY, 7 JUNE 2026

WORKSHOP TITLE		WORKSHOP ABSTRACT
WSA	**Advanced RF to Sub-THz Frequency Generation: Oscillators, Frequency Multipliers, and their Applications** **Organizers:** J. Zhang, *UESTC*; *S. Finocchiaro, Qorvo*; T. Siriburanon, *University College Dublin* **08:00 – 17:20** **ROOM: 151AB**	This workshop will present recent breakthroughs in the design of Voltage Controlled Oscillators (VCOs) and frequency multipliers, with a focus on innovations spanning the microwave, mm-wave, and sub-THz frequency bands. As these components are critical enablers in emerging communication, radar, and sensing systems, the workshop will cover both theoretical insights and practical design strategies that push the boundaries of performance, integration, and power efficiency. Bringing together leading experts from both academia and industry, the sessions will highlight state-of-the-art circuit techniques, emerging device technologies, and system-level considerations. Presentations will explore various aspects of VCO and frequency multiplier design, aiming to achieve low noise, wide tuning range, and high efficiency. The workshop will also address key challenges in scaling designs to higher frequencies and more compact integration.
WSB	**Beamforming Architectures and Circuits for Next-Generation Commercial and Defense Systems** **Organizers:** A. Visweswaran, *Nokia Bell Labs*; S. Finocchiaro, *Qorvo* **08:00 – 17:20** **ROOM: 152**	The workshop takes a deep dive into systems and circuits at the forefront of the next generation wireless technology for commercial and defense applications. Bringing together leading experts from both academia and industry, the talks will highlight trade-offs in MIMO systems that motivate the use of analog, digital and hybrid beamforming with a focus on parameters like coverage, spectral and energy efficiency, bandwidth and throughput. Emerging device technologies, state-of-the-art design techniques for RF, analog and digital circuits, advanced packaging integration and thermal management will also be presented, providing a comprehensive view of the direction in which wireless systems are heading.
WSC	**Applications of Generative AI and LLMs in Microwave Engineering** **Organizers:** C.D. Sarris, *University of Toronto*; D. Jiao, *Purdue University*; Q.-J. Zhang, *Carleton University*; Z.J. Yao, *Lawrence Berkeley National Laboratory* **08:00 – 17:20** **ROOM: 153AB**	Generative AI and Large Language Models (LLMs) are beginning to change how electromagnetic and RF systems are specified, synthesized, and verified. Although these tools are common in software and data science, their use in microwave engineering is nascent and requires careful, physics-aware evaluation. This full-day workshop spotlights state-of-the-art methods that connect AI generation to EM reality, moving beyond proofs-of-concept toward validated models and workflows engineers can use today. Technical content centers on three pillars — (1) Inverse EM / spec-to-layout and end-to-end design: "Generative AI Methods for Wireless Propagation Prediction" (Costas Sarris) shows diffusion and GANs for real-time, generalizable indoor propagation maps and super-resolution; "AI-enabled End-to-End RF and RFIC Design" (Kaushik Sengupta) discusses inverse-design and generative AI approaches for automated synthesis of complex RF passives, multi-port elements, antennas, and spec-to-GDS RFIC flows combining reinforcement learning and inverse design; "Empowering Optimal Design of RF Devices by Generative AI" (Dominique Baillargeat and Francisco Chinesta) introduces rank-reduction autoencoders as generative surrogates for RF circuits and antennas; "An Autonomous Agentic Framework for Deep Inverse Photonic Design" (Willie Padilla) presents an agentic, autonomous inverse-design workflow for metamaterials, illustrating how AI agents can accelerate spectrum-to-structure design paradigms relevant across EM domains — (2) LLM-augmented EDA workflows and ML foundations: "Practical Considerations for Applying AI to RF and Microwave EDA Workflows" (Matthew Ozalas) and "Accelerating Innovation: AI-Driven Advances in Sigrity, Clarity, and Optimality" (Jian Liu) highlight Keysight's and Cadence's strategies for GenAI/LLM-aided design; Complementary talks cover attention mechanisms for non-linear circuit modeling (Qi-Jun Zhang) and multiphysics-informed, data-free ML for RFIC design (Dan Jiao) — (3) Multimodal LLMs: "Multimodal LLMs for Electromagnetic Waves" (Zhi Jackie Yao) fuses image-based EM data with text via a BLIP bridge into pretrained LLMs for EM reasoning and design assistance. Rigor and trust will be discussed throughout. Talks and discussion will cover dataset curation, generalization, solver-in-the-loop constraints (passivity/causality/manufacturability), independent EM/measurement validation, and secure integration into EDA flows, along with practical guardrails to avoid hallucinations and constraint violations. For attendees new to this intersection, the workshop includes short primers, reproducible examples, and simple evaluation checklists to separate signal from hype.
WSD	**Broadband and Spectrally Agile RF Front-Ends for Advanced Software-Defined Radios** **Organizers:** A. Natarajan, *Yale University*; H. Rahmani, *New York University* **08:00 – 17:20** **ROOM: 153C**	Next-generation wireless systems Beyond-5G will place unprecedented demands on radio front-ends across all frequency ranges, from sub-6GHz (FR1) to the upper mid-band (FR3) and into mm-wave spectrum. Each band presents its own trade-offs in terms of coverage, capacity, propagation, and spectrum availability, but they share common challenges: fragmented allocations, coexistence with incumbent services, and the need for spectrally agile, energy-efficient, and highly integrated transceivers. The upper mid-band (FR3, 6–24GHz) is a prime example. Compared to congested FR1 allocations, it offers an order of magnitude more bandwidth, while avoiding some of the severe propagation penalties of mm-wave frequencies above 28GHz. These advantages make FR3 highly attractive for wide-area enhanced broadband and low-latency applications, but also introduce stringent coexistence requirements with incumbent scientific, defense, and satellite users. The resulting emphasis on spectrum awareness and frequency agility highlights design challenges that resonate across all frequency ranges. This workshop will explore the circuit- and architecture-level innovations needed to enable broadband, reconfigurable, and spectrally agile radios. Topics include: Wideband, reconfigurable LNAs and PAs with high linearity and efficiency; Frequency-agile local oscillators and synthesizers with fast switching, low phase noise, and fine resolution; Wideband filtering and duplexing strategies using tunable, switched-capacitor, or acoustic/EM-based solutions; Digital-assisted calibration and adaptation, including ML-based techniques for resilience against PVT variations; Scalable architectures in advanced CMOS and SiGe technologies, enabling multi-band, multi-standard, and multi-antenna integration with energy efficiency. By bringing together experts from academia, industry, and government laboratories, the workshop will highlight state-of-the-art circuit techniques and cross-layer considerations — including spectrum policy, system-level trade-offs, and co-designed RF/digital intelligence — that are critical to realizing the next generation of programmable, energy-efficient, spectrally agile radios.
WSE	**Dare to Dream — The Path to True Batteryless Radios** **Organizers:** K.-K. Huang, *Everactive*; Z. Ahmad, *Coherent* **08:00 – 17:20** **ROOM: 154**	Are we there yet? — a world where radios and SoCs for IoT and countless other domains are truly battery free? What would it take to go beyond a smart toaster to a future with ubiquitous ambiently powered sensors that work seamlessly with the existing wireless devices and infrastructure. This workshop addresses these questions by bringing together a unique mix of top industry, research and academic speakers with expertise ranging from RFICs to SoCs. Apart from the current state of the low-power radios, the talks will discuss circuits and system architectures that have the potential to achieve 1000× improvements in energy efficiency. The workshop and concluding panel session also aims to explore salient features which the front-ends, integrated energy harvesters, and overall systems must provide to continue the evolution of ambient IoTs.

SUNDAY WORKSHOPS | 08:00 – 17:20 | SUNDAY, 7 JUNE 2026

	WORKSHOP TITLE	WORKSHOP ABSTRACT
WSF	**Design and Implementation of FR3 Power Amplifiers** **Organizers:** A. Giry, *CEA-LETI* ; M. Vigilante, *Qualcomm*; P. Reynaert, *KU Leuven* **08:00 – 17:20** **ROOM: 156AB**	This workshop will focus on the design and implementation of FR3 Power Amplifiers. It will cover technology considerations, circuit implementation and topology consideration for PAs in this frequency range. Both Silicon, GaAs and GaN circuit examples and techniques are discussed, as well as DPD and broadband circuit techniques. The speakers are from both academia and industry.
WSG	**Heterogeneous Integration and Advanced Packaging for mm-Wave and Sub-THz Circuits and Systems** **Organizers:** A. Gadallah, *Keysight Technologies*; A.Ç. Ulusoy, *KIT*; T. Kamgaing, *Intel* **08:00 – 17:20** **ROOM: 156C**	The ever-increasing demand for high-throughput communication links and high-resolution radar sensors is driving the development of future wireless systems at higher operating frequencies, from mm-wave to sub-THz bands. The flexibility required from these systems to support multiple functionalities leads to the adoption of large phased array antennas and complex System-in-Package (SiP) Bit-to-RF or Optical-to-RF solutions. Heterogeneous technologies and vertical 3D integration will play a vital role in enhancing performance and functional density while reducing the size and cost of next-generation RF systems. However, the shift to 3DHI also introduces a new set of challenges, ranging from novel processes and substrates to RFIC/MMIC design, packaging and thermal management. This workshop brings together leading experts from academia and industry to present the latest advances and design methodologies in heterogeneous integration and advanced packaging technologies for mm-wave and sub-THz applications. The talks span a wide range of critical topics, including interposer-based system integration, advanced simulation techniques, integration of III-V technologies, SiGe and CMOS platform optimization, and co-packaged system testing and calibration.
WSH	**Microwave Quantum Engineering: From Methods to Hardware and Algorithms** **Organizers:** M. Haider, *Technische Universität München*; T.E. Roth, *Purdue University*; V. Okhmatovski, *University of Manitoba* **08:00 – 17:20** **ROOM: 157AB**	The rapid progress in quantum computing has made microwave engineering a key enabler of nearly all major hardware platforms, including superconducting qubits, spin qubits, trapped ions, etc. Each of these technologies relies on advanced microwave techniques for control, coupling, readout, and scaling, demanding approaches that go well beyond classical electromagnetics. This creates a great opportunity for microwave engineers to make lasting contributions to the development of quantum computing and related technologies. The need for ultra-low-noise amplification, high-fidelity readout, and crosstalk suppression has stimulated novel device designs, often requiring hybrid approaches that combine electromagnetic modeling with quantum theory. Similar challenges appear in other quantum platforms; for example, trapped-ion processors demand stable and phase-coherent microwave delivery for multi-qubit gates, while spin qubits rely on advanced microwave control schemes. At the algorithmic level, quantum computing is increasingly viewed as a potential game-changer for electromagnetics and related fields. Specialized quantum algorithms promise significant acceleration for tasks such as solving integral equations, optimizing antenna radiation patterns, or addressing NP-hard problems in inverse scattering and system design. While fully fault-tolerant quantum computing remains a long-term goal, near-term noisy intermediate-scale quantum devices are already serving as valuable testbeds. Hardware-aware algorithm design, ie tailoring quantum algorithms to the specific strengths and limitations of physical devices, is becoming an essential strategy for identifying useful applications in the presence of noise and limited coherence times. This workshop will highlight state-of-the-art advances at the interface of microwave engineering, quantum hardware development, and quantum algorithm design. Contributions will cover multiple quantum platforms, emphasizing both their unique microwave engineering challenges and the unifying principles that connect them. A particular focus will be placed on industrial perspectives, including scalability, reliability, and manufacturability of microwave components for large-scale quantum systems. Industry engagement is crucial, as commercial interest and investment in quantum computing have surged dramatically, creating demand for engineers who can translate fundamental concepts into deployable technologies. To ensure accessibility, the workshop will open with a comprehensive tutorial introducing the basics of quantum theory in the language of microwave engineering. This will help participants from the RF and microwave community engage with the specialized concepts of quantum physics and better appreciate their role in quantum device design. The program will then feature a series of invited talks from leading experts in academia and industry, with topics spanning theoretical methods, quantum hardware, and algorithmic perspectives. By bringing together specialists from diverse quantum hardware platforms, algorithm developers, and industrial leaders, this workshop will provide a unique forum for exchanging ideas, identifying cross-platform synergies, and further drafting the engineering roadmap toward practical, scalable quantum computing.
WSI	**On-Wafer Sub-THz Measurements from Fundamentals to Next-Generation Tools and Applications** **Organizers:** G.N. Phung, *PTB*; T. Li, *Cornell University* **08:00 – 17:20** **ROOM: 157C**	With the operating frequencies of 6G wireless communications and next-generation automotive radars extending above 110GHz, accurate and robust on-wafer measurements are essential for enabling design, model verification, and industrialization. While a solid foundation has been established over the past decades in calibration methodologies and measurement platforms, many challenges remain as research and development move deeper into the sub-THz domain. As advanced devices, circuits, interposers/packaging technologies emerge alongside high-frequency systems, new measurement scenarios and calibration requirements continue to arise. At the same time, new methodologies such as AI-driven automation, advanced calibration algorithms, and novel calibration substrates are being developed to address these evolving needs. This full-day workshop brings together international experts from national metrology institutes, academia, and industry to address these challenges from complementary perspectives. The program begins with a focus on the fundamentals of calibration and measurement, reviewing the state-of-the-art in instrumentation, calibration techniques, and traceability at mm-wave frequencies, followed by comprehensive design guidance for calibration standards and systematic analysis of probe-induced uncertainties. These sessions lay the foundation for reliable and reproducible on-wafer measurements at sub-THz frequencies, offering both the theoretical framework and practical guidance needed for advancing calibration practices. The workshop then transitions to next-generation tools and methodologies that are extending the state-of-the-art. Topics include AI-driven nano-robotic probe stations that achieve sub-micron alignment and reproducible probe placement, calibration algorithms that go beyond conventional error models to capture mode conversion and crosstalk, and the development of GaAs impedance standard substrates supporting diverse calibration standards and measurement scenarios. Recent advances in broadband vector network analyzer technology will also be presented, including single-sweep measurements up to 250GHz and new calibration capabilities. These contributions demonstrate how innovative approaches are being translated into practical platforms, enhancing both robustness and scalability. Finally, the workshop highlights applications and industrial implementations. Talks will show how advanced calibration and measurement techniques are applied in wafer-scale silicon interposer technologies — addressing stackup choices, GSG pad design, and multimode suppression — as well as in high-volume silicon device testing for next-generation components. Presentations from industrial experts will emphasize optimizing calibration substrates, comparing methodologies such as modal versus SOLR calibration, and reducing measurement uncertainties under real manufacturing constraints. Together, these examples illustrate how academic innovation and industrial practice are converging to enable accurate and traceable measurements at scale. By covering the full spectrum from fundamentals to industrialization, this workshop offers participants both foundational insights and exposure to cutting-edge solutions. The day will conclude with an open discussion, providing a forum to exchange ideas, identify open challenges, and shape the roadmap for accurate, scalable, and robust on-wafer sub-THz measurements.

SUNDAY WORKSHOPS | 08:00 – 17:20 | SUNDAY, 7 JUNE 2026

	WORKSHOP TITLE	WORKSHOP ABSTRACT
WSJ	**Pros and Cons of Moving Above 100GHz — Circuits, Systems and Potential Applications** **Organizers:** S.P. Voinigescu, *University of Toronto*; V. Issakov, *Technische Universität Braunschweig* **08:00 – 17:20** **ROOM: 155**	The D-band frequency range is gaining attention for both radar and communication applications due to potential system miniaturization related to smaller wavelength and the possibility of having larger bandwidth. There is an ongoing frequency regulation activity at ETSI, ECC and FCC on standardization of new frequency bands, targeting bandwidth >10GHz. Large bandwidth is beneficial for radar to achieve good range resolution, while for communication applications one can achieve higher data-rates. Pushing operation frequencies even further beyond the D-band towards 300GHz may offer even more potentially large available unregulated bandwidth. However, these high operation frequencies reach the technological limits imposed by the available CMOS processes. Operating the transistors at frequencies beyond half of the achievable ft/fmax makes it very difficult to obtain sufficient gain and power from an amplifier stage. One possible solution would be to use III-V technologies, which offer ft/fmax frequencies by far exceeding those of advanced CMOS nodes. Still, the possibility of integrating the mm-wave front-end with the digital baseband on the same chip makes CMOS very attractive despite this mentioned drawback. Another challenge that comes at higher frequencies are the higher losses of the interconnects. The packaging possibilities. Realization of antennas (on-chip or in-package?). As well, much higher propagation losses make the link budget very challenging and make it very hard to reach ranging or communication over large distances. In this full-day workshop we will address exactly these questions: (a) does it make sense to go to frequencies above 100GHz? Or shall we stay in the comfort zone below 100GHz?; (b) for which applications does it makes sense at all?; (c) what are the circuit related challenges in silicon-based technologies and how can we solve them?; (d) what are the challenges not only to build an SoC, but to actually build a system >100GHz?; (e) discuss emerging applications that might profit by very high frequencies. Level budget considerations for various mm-wave systems will be discussed. Fair and unbiased opinions will be given by experts. The workshop features distinguished speakers from leading companies and academia, who will present their view on mm-wave circuits >100GHz, as well as sharing their "best practice" on how to design mm-wave circuits. A brief concluding discussion will round-off the workshop to summarize the key learnings on the wide range of aspects presented during the day.
WSK	**Taming Multi-Beam Arrays: Emerging Architectures, Algorithms, and Applications** **Organizers:** A. Valdes-Garcia, *IBM Research*; E. Naviasky, *IBM*; O. Eliezer, *Samsung* **08:00 – 17:20** **ROOM: 252AB**	Scaled antenna arrays that support multiple simultaneous beams can enable significant throughput improvements and new capabilities for both communications and sensing applications. These benefits provide the form-factor and spectral efficiencies required for next generation wireless systems. However, beam scaling also scales up traditional design challenges and creates new implementation hurdles. For example, handling the signal distribution and processing for hundreds of antennas and tens of beams quickly results in stages that are power and thermally infeasible. Innovations in multi-beam array architectures are indispensable to overcoming these challenges for emerging satellite communications, radar, and 6G applications. To succeed in real-world deployments these innovations must be developed with resilience, cost-effectiveness, and hardware scalability considerations in mind. This workshop explores specifically multi-beam topics with an array of experts presenting their work on re-imagining how to architect and build point-to-multi-point arrays at scale. Approaches for beam-scaling in frequency, space, and time will be explored and hardware implementations that range from RF-centric to mostly digital will be covered. The goal is to provide attendees with an in-depth overview of this emerging area of antenna array design, and cast light on trade-offs and future directions.
WSL	**Frontiers of G-Band Innovation for Next-Generation Communication and Sensing: From Ultra-High-Speed Devices to Sub-THz Integrated Circuits and Systems** **Organizers:** A.Ç. Ulusoy, *KIT*; D. Dimlioglu, *Cornell University*; H. Sharifi, *HRL Laboratories* **08:00 – 17:20** **ROOM: 254AB**	Increasing demand for continuous information flow and uninterrupted connectivity requires next-generation communication and sensing systems to support higher data-rates and wideband operation. As a result, wireless systems are moving to higher frequencies, offering wider bandwidth and higher channel capacity, while simultaneously reducing the system size. Although lower mm-wave bands, such as V-band (40–75GHz), have been explored as a potential solution to meet the demand for high-speed connectivity, the elevated levels of atmospheric attenuation create an additional challenge for maintaining signal power in wireless transmission over long distances. On the other hand, the upper portion of the mm-wave spectrum at 110–300GHz, also known as G-band, offers a promising path to achieve higher data-rates in point-to-point links, defense applications, localization, ranging, and other multi-user communication scenarios as the underutilized portion of the EM spectrum, while enabling higher resolution in radars and other sensing systems for biomedical or security screening and also reducing the size of all these systems. The sub-THz spectrum above 200GHz is of particular interest due to lower atmospheric attenuation. However, building high-performance integrated circuits and systems at G-band poses significant disadvantages due to the lower available gain of the transistors and higher noise contribution from components, leading to higher power consumption and reduced sensitivity at these sub-THz frequencies. Therefore, a combination of advanced circuit design techniques and system-level innovations, state-of-the-art high-speed devices harnessing the properties of compound semiconductors, heterogeneous integration, and co-design with packaging is essential to overcome the inherent challenges of the G-band design space. This workshop provides a comprehensive and in-depth review of the latest academic and industrial research on innovative techniques and cutting-edge technologies for realizing high-data-rate wireless communication and radar systems at 110–300GHz across SiGe, scaled-CMOS, InP, and GaN platforms, with particular focus on designs above 200GHz in the upper G-band. First, novel circuit techniques and topologies to enable high-power generation with maximum power efficiency, advanced high-speed device design and optimization in compound semiconductor processes, as well as III-V RF front-ends and hybrid InP/CMOS phased arrays above 200GHz, will be presented. State-of-the-art SiGe BiCMOS transceiver arrays across the entire G-band will be showcased with an emphasis on ultra-compact design and 2D scalability, along with multiple demonstrations of modular beamforming ICs supporting up to 200Gbps wireless transmission, wideband radar transceiver chips for integration in large MIMO arrays, and upper G-band MMICs enabling radar systems with multi-target resolution down to a few millimeters while maintaining an absolute ranging accuracy on the order of 1µm. In addition, system- and circuit-level design considerations for record-low-power CMOS radar sensor systems will be reviewed. Finally, co-design and co-integration of sub-THz ICs in SiGe and SOI with glass interposer technology and 3-D Heterogeneous Integrated (3DHI) phased arrays incorporating an antenna on glass, GaN-on-SiC MMICs, a silicon interposer, and a silicon Beam Forming Integrated Circuit (BFIC) will be presented as a pathway toward end-to-end communication modules in G-band for commercial and defense applications.
WSM	**RFICs in Space: Design Techniques Enabling Satellite Communications and Sensing in Harsh Environments** **Organizers:** A. Ismail, *Apple*; T. Forbes, *Sandia National Laboratories* **08:00 – 17:20** **ROOM: 255**	Emerging applications such as Low Earth Orbit (LEO) satellite-based internet and geolocation services are rapidly expanding, driven by commercial efforts to deliver low-cost satellite connectivity to consumers. However, space environments present unique challenges not encountered in terrestrial systems, including radiation-induced errors, extreme temperature fluctuations, and limited power availability. Systems operating beyond LEO face even more severe higher levels of environmental degradations. This workshop will bring together leading experts from academia and industry, spanning both LEO SATCOM and traditional space-based systems, to provide a comprehensive overview of the key design challenges and state-of-the-art techniques required for reliable RF system performance in space.

SUNDAY WORKSHOPS | 08:00 – 17:20 | SUNDAY, 7 JUNE 2026

	WORKSHOP TITLE	WORKSHOP ABSTRACT
WSN	**Breaking Barriers in Bandwidth and Power: Advances in Distributed Amplifiers for Broadband Front-Ends** **Organizers:** S. Finocchiaro, *Qorvo*; T. Dinc, *Texas Instruments*; Y. Chen, *Samsung* **08:00 – 11:50** **ROOM: 256**	Distributed Amplifier (DA) architectures have long been valued for their ability to deliver exceptionally wide bandwidths. In recent years, new design strategies and circuit techniques in various technologies have dramatically expanded their potential in applications ranging from high-speed optical and wireless communication to defense, instrumentation, radar, and sensing. This workshop will provide a comprehensive overview of recent research and development in distributed amplifiers, focusing on performance improvements across bandwidth, output power, linearity, noise, and efficiency enhancement. Emphasis will be given to implementations across multiple technology platforms including CMOS, SiGe BiCMOS, GaN, and InP technologies, highlighting the unique opportunities and challenges in each domain.
WSO	**Advances in mm-Wave Phased Array Technologies** **Organizers:** G.P. Gibiino, *Università di Bologna*; M. Ettorre, *Michigan State University*; N. Miller, *Michigan State University* **13:30 – 17:20** **ROOM: 256**	Next-generation communications and sensing systems operating in the mm-wave range require a collaborative effort among the various components that make up the subsystems to enhance performance and reduce production costs. This workshop will bring together leading researchers from different fields of mm-wave phased arrays to discuss the key requirements and challenges relevant to their areas of expertise. The half-day workshop will kick off with a unique perspective on mm-wave phased arrays from industry and government representatives, providing context for the challenges and requirements in this field. The remainder of the workshop will feature internationally renowned speakers specializing in transistors, integrated circuits, packaging, and heterogeneous integration, as well as phased arrays. Interactive discussions will be prioritized throughout the event to encourage engagement among participants.
WSP	**Next-Generation Optical Technologies Enabling Future Data Centers and Wireless Connectivity** **Organizers:** A. Frappé, *Université de Lille*; B. Jalali Farahani, *Cisco*; S. Moazeni, *University of Washington* **08:00 – 11:50** **ROOM: 257AB**	The ever-increasing demand for higher network capacity, and the volume of different devices that need connectivity, require innovative solutions. In mobile applications, this demand is addressed in 5G and 6G networks by using microwave links with massive Multiple-Input Multiple-Output (MIMO) antenna arrays to support high data-rate connectivity between large number of devices with improved coverage. However, the capacity is still limited by the available RF spectrum. Radio-over-fiber (RoF) systems combined with MIMO technology offer a flexible and powerful solution for extending the reach and improving the performance of wireless networks. In data center application, the hybrid opto-electrical links presents numerous advantages over single technology solutions. Energy efficiency, higher throughput, scalability and cost can be optimized by proper convergence of the two technologies. In this workshop, experts from industry and academia will discuss the latest developments in the convergence of the opto-electrical technology as applied to mobile networks and data center connectivity.
WSQ	**The Next Frontier in Radar Systems** **Organizers:** G. Gramegna, *IMEC*; S. Shahramian, *Nokia Bell Labs* **13:30 – 17:20** **ROOM: 257AB**	The frontier of next-generation radar is shaped by advances in mm-wave, UWB, and AI-assisted phased array technologies. In the D-Band, SiGe implementations enable instantaneous bandwidths up to 56GHz, delivering millimeter-level resolution and unlocking applications in imaging, non-destructive testing, and metrology. In parallel, UWB radar provides low-power, high-precision sensing for presence detection, vital-sign monitoring, and in-cabin safety. Complementing these developments, AI-driven phased arrays are emerging as enablers of adaptive beamforming, joint radar-communications (ISAC), and scalable multi-antenna architectures. This talk will highlight circuit and system design challenges, analog front-end techniques, and prototype results, illustrating how SiGe mm-wave, UWB, and AI-enhanced phased arrays together define the future of high-resolution radar.

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

QUANTUM BOOTCAMP

| 08:00 – 11:50 | SUNDAY, 7 JUNE 2026 | ROOM: 260

The field of quantum computing relies heavily on the advancements in microwave technology. However, a gap exists between the microwave engineering community and the quantum research effort. To bridge this divide and propel the quantum industry forward, it is crucial to cultivate a new generation of engineers proficient in both microwave engineering and quantum physics. These multidisciplinary experts will be essential in driving innovation in quantum sensing, communication, and the control of quantum computing platforms, particularly those based on superconducting qubits. Initiatives like the Quantum Boot Camp aim to address this need by providing microwave engineers with foundational knowledge in quantum engineering, emphasizing the design, fabrication, control, and measurement of quantum systems. By equipping engineers with this expertise, the program seeks to empower them to contribute meaningfully to this rapidly evolving technological landscape. The program caters to a diverse audience, including recent graduates, career changers, and marketing professionals, all seeking to deepen their understanding of quantum technology and its practical implications.

Organizers: Michael Hamilton, *Google Quantum AI*; **Shirin Montazeri**, *Google Quantum AI*

Introduction to Quantum Computing: Qubits, Gates, and Algorithms
Author: William Oliver, *MIT*

Microwave Engineering of Quantum Computers
Author: Kevin O'Brien, *MIT*

Industry Perspective: Quantum Computing at Google
Author: Juhwan Yoo, *Google Quantum AI*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

AI/ML BOOTCAMP

| 08:00 – 17:20 | SUNDAY, 7 JUNE 2026 | ROOM: 259AB

This bootcamp will present the basics of AI/machine learning (ML) and their applications to microwave engineering. It is intended for engineers who want to learn the basics of AI/ML or are interested in using AI/ML for microwave applications, marketing and sales professionals who are interested in understanding the basics and relevance of AI/ML for microwaves, professionals with AI/ML expertise seeking to explore potential applications to MHz-to-THz technologies, and university students who like to acquire the basic knowledge of AI/ML. To this end, the bootcamp includes introductory presentations on the fundamentals of AI/ML, covering supervised, unsupervised and reinforcement learning. Moreover, we will introduce common types of neural networks such as fully connected artificial neural networks (ANNs), convolutional neural networks (CNNs), recurrent neural networks (RNNs), long-short term memory networks (LSTMs), generative adversarial networks (GANs). We will discuss their function, training cost, relative advantages and limitations, as well as their suitability to various applications. We will also introduce concepts such as generalizability (i.e. the accuracy of neural networks to cases outside their training set) and overfitting (when the network learns training data well, but fails to generalize to new cases). Examples of applications of AI/ML to microwave engineering to be presented include: electromagnetic modeling and optimization, microwave filter modeling/design, GaN HEMT modeling, Doppler radar based human motion recognition, gesture recognition and object identification, radio coverage prediction and design optimization of reconfigurable intelligent surfaces. The course will provide ample opportunities for audience interaction and Q&A.

Organizers: Qi-jun Zhang, *Carleton University;* **Costas Sarris,** *University of Toronto*

AI and Machine Learning for Microwave Design - An Introduction
Author: Qi-jun Zhang, *Carleton Univ.*

Artificial Neural Network and Space Mapping Techniques for RF Modeling
Author: Lei Zhang, *NXP*

Scientific Machine Learning: Principles and Applications
Author: Costas Sarris, *Univ. of Toronto*

AI-Assisted EM Structure Synthesis Using a Software-Defined Open-Source EDA Flow
Author: Caglar Ozdag, *IBM, Bogazici University*

Generative AI for RFIC design
Authors: Kaushik Sengupta and Jonathan Zhou, *Princeton Univ.*

AI for 3D Radar – Approaches and Opportunities
Author: Asaf Tzadok, *IBM Watson Research Center*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RFIC TECHNICAL LECTURE

| 11:45 –13:15 | SUNDAY, 7 JUNE 2026 | ROOM: 253ABC

Modern Receiver Architectures: Mixer-first, N-path, and "No-gain" Architectures

Bram Naut*a, University of Twente, Enschede, the Netherlands*

In a classical receiver, the first thing designers do is add amplification immediately after the chip's RF input. This is usually done with a low-noise amplifier (LNA) and is often followed by selectivity and a mixer. This way, the mixer may be noisy, and its design becomes easier. In the current overcrowded radio spectrum, however, adding the first amplifier may result in significant distortion products at the LNA output. These cannot be removed anymore. Therefore, mixer-first architectures have emerged as a candidate for the first circuit after the chip's RF input. These architectures do not use a low-noise amplifier but instead use a low-loss passive mixer. These passive mixers exhibit very good linearity and offer the option of narrow-band RF filtering at the mixer input. This makes the mixer-first receiver a good candidate for applications where interference is a challenge. The RF filtering is achieved by exploiting the mixer in a so-called N-path filter, which is a filtering technique from forgotten times. New ideas such as higher-order filtering and passive voltage gain via capacitor stacking will also be presented in this lecture. An outlook of fully passive receivers, even without active linear amplification, is also given as a possible future direction.

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

WPT BOOTCAMP | 13:30 – 17:20 | SUNDAY, 7 JUNE 2026 | ROOM: 260

As our society and economy continue to accelerate toward digitalization, the density of connected wireless nodes is increasing rapidly—with estimates suggesting up to ten million devices operating within a single square kilometer. This unprecedented growth raises major sustainability challenges, particularly due to the widespread use of batteries for powering wireless devices. Wireless Power Transfer (WPT) offers a transformative solution by delivering power without physical connections or disposable energy sources. By reducing dependence on batteries and minimizing material waste, WPT technologies contribute to a more sustainable, cost-effective, and scalable infrastructure for the connected world. The WPT Boot Camp at IMS 2026 will introduce participants to both near-field and far-field WPT technologies in a format that integrates industrial and academic perspectives. Industry speakers will present the current state of the art, including commercially available systems, standardization efforts, and emerging market opportunities. Academic experts will complement these talks with discussions on the theoretical foundations and ongoing research aimed at pushing WPT capabilities beyond existing limits. A central feature of the boot camp will be live demonstrations, giving participants hands-on experience with operational WPT systems and the opportunity to interact directly with the presenters. This highly interactive format ensures that attendees gain both a practical understanding of existing solutions and insights into future technological directions. The boot camp is open to engineers, students, and professionals from industry and academia who wish to deepen their understanding of WPT technologies, explore their applications, and engage with experts driving innovation in this rapidly evolving field.

Organizers: Jasmin Grosinger, *University of Siegen;* **Nuno Carvalho,** *University of Aveiro*

From Concept to Consumer: Designing High-Efficiency Near-Field Wireless Power Systems
Author: Alberto Peralta, *NuCurrent*

Advancing Near-Field Wireless Power Transfer: Fundamentals and Emerging Research Directions
Author: Jasmin Grosinger, *University of Siegen*

Novel Beam Forming Antenna Technology for 2nd Step WPT System
Author: Naoki Shinohara, *Kyoto University*

Far-Field Wireless Power Transfer: Principles, Architectures, and Research Frontiers
Author: Nuno Carvalho, *University of Aveiro*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RFIC PLENARY SESSION | 17:30-19:00 | SUNDAY, 7 JUNE 2026 | BALLROOM

RF-CMOS at 25: Some Unique Concepts that Endure

Professor Asad Abidi, *University of California, Los Angeles*

Abstract: It would be wrong to view the dramatic rise of CMOS in mass-produced RF electronics as merely a way to lower costs or integrate more on a chip. CMOS introduced unprecedented circuits and architectures, enabling fine-grained calibration, substantial improvements in blocker tolerance, monolithic replacement of oscillator modules, and digital closer to the antenna. Today, complete RF-CMOS transceivers (except for a front-end module) are but a small piece of large mixed-signal systems-on-a-chip. The Internet is accessed at high speeds primarily through wireless connections. IoT devices are gradually proliferating in both built and remote environments. Wireless sensing is everywhere. This presentation will select a handful of concepts and describe, in accessible technical terms, what makes them endure.

Bio: Asad Abidi received the B.Sc. degree in Electrical Engineering from Imperial College, London in 1976, and the Ph.D. from the University of California, Berkeley in 1982. He worked at Bell Laboratories, Murray Hill until 1985, and then joined the faculty of the University of California, Los Angeles where he is Distinguished Professor of Electrical Engineering. With his students he has developed many of the radio circuits and architectures that enable today's mobile devices. Professor Abidi has received the 2008 IEEE Donald O. Pederson Award in Solid-State Circuits and the 2012 and 2022 Best Paper Awards from the IEEE Journal of Solid-State Circuits. In 2015, he was named an Outstanding Alumnus of the Berkeley EECS Department. He was elected Fellow of IEEE in 1996, Member of the US National Academy of Engineering in 2007, and Fellow of TWAS, the world academy of sciences, in 2010.

RF Control Systems for the Future of Quantum Computing

Dr. Oliver Dial, *IBM*

Abstract: Quantum computing is at an inflection point. Three years ago, we had the first instances of quantum computers performing calculations that could not be directly simulated. This year, we believe quantum advantage will be demonstrated: verifiable examples of quantum computers performing calculations faster or more accurately than is possible on classical computer. However, unlocking the full power of quantum computing will require large-scale fault tolerant quantum computers: computers able to run hundreds of millions of operations on thousands of qubits with no errors. Advances in the error correcting codes that, in principle, make this possible have greatly reduced the overhead of such a machine, to the extent we now believe it will be possible by 2029. However, even with these advances, these machines will have tens of thousands of qubits. Controlling them will require the rapid maturation of quantum control systems, demanding new, dense, reliable, and low power microwave signal generators, wiring, and passives to be designed, tested, and manufactured in the next few years. I will discuss how we foresee this evolving, and some of the requirements these RF control systems will have to achieve.

Bio: Dr. Oliver Dial was named an IBM Fellow in 2021 for his contributions to quantum computing hardware. He is VP of Quantum Systems at IBM, ensuring IBM's quantum hardware and software together deliver an outstanding experience. Oliver received his PhD from MIT in 2007 for research in two-dimensional electron and hole systems. He then entered the field of quantum computing as a post-doc at Harvard, demonstrating the first two-qubit gate between semiconductor singlet-triplet qubits and performing pioneering charge noise spectroscopy in these systems. He joined IBM as a research scientist in 2012.

RFIC Reception and Symposium Showcase

19:30-21:00 | SUNDAY, 7 JUNE 2026

RFIC Student Paper Finalists:

Mo3C: A D-Band Variable-Gain Balanced Power Amplifier with 36% FBW, 18.2 dBm PSAT and Reconfigurable Adaptive Bias in 22-nm FD-SOI
Giacomo Venturini, *KU Leuven*

Mo2A: INFINITY: A 245-310 GHz InP-FinFET CMOS Co-packaged Sliding-IF Transmitter with On-Chip Resonant Cavity Antenna
Berke Gungor, *KU Leuven*

Tu2B: A 25.4fs Jitter Fractional-N Digital PLL with an LC-Based Power-Gated Oscillator and Series-Resonance DCO
Daniele Lodi Rizzini, *Politecnico di Milano*

Mo1C: A 2.4-GHz Reconfigurable Digital Transmitter with Three-Vector-Synthesized IQ-Shared PA and Envelope Rotation Calibration for Multi-Standard IoT Applications
Linhao Ma, *Tianjin University*

Mo4B: A 4-Channel Self-Synchronizing Receiver Array Without LO Distribution with Angle-of-Arrival Estimation
Subhan Zakir, *Arizona State University*

Tu4B: A 47-to-100GHz Oscillator-embedded Artificial Transmission Line based LO Generator Achieving Averaged FoMt of -193.7 dBc-Hz
Wei Sun, *University of California, Los Angeles*

Tu2J: A 1.49 pJ-b 4-Channel 256-Gb-s MRM-Based Coherent Co-Packaged Optics with Linear Carrier Phase Recovery
Pengyu Zeng, *University of Washington*

Tu1B: A Calibration-Free 55-to-70 dBc H1 Rejection, 13.8 % Efficiency, 102-to-120 GHz CMOS Frequency Tripler using Phase-Alignment Technique for Harmonic Recombination
Sarah Koop-Brinkmann, *Technische Universität Braunschweig*

Mo4A: A W-band RTWO-Based Digital Transmitter for PMCW Radar Achieving 14.9% Efficiency
Shaoqi Yang, *University of Science and Technology of China*

RFIC Industry Paper Finalists:

Tu2A: A 5-7GHz Channel and Bandwidth Selective Shunt N-Path LNA Based Receiver with +6dBm OOC IB1dB, <-71dBm LO Re-Radiation for WiFi 7 Multi-Link Operation
Ran Krichman, *Intel Corporation*; Ashoke Ravi, *Intel Corporation*; Natan Ershengoren, *Intel Corporation*; Rotem Banin, *Intel Corporation*; Sashank Krishnamurthy, *Intel Corporation*; Uri Grosglik, *Intel Corporation*; Oded Tal, *Intel Corporation*; Nave Sharvit, *Intel Corporation*; Oren Avraham, *Intel Corporation*; Sarit Zur, *Intel Corporation*, Ofir Degani; *Intel Corporation*

Tu1A: An Area-Efficient NBA-MMS UWB Receiver with Capacitance Boosting and PVT-Robust RSSI for IEEE 802.15.4ab
Sumin Kang, *Samsung Electronics*; Junhyeong Kim, *Samsung Electronics*; Sinyoung Kim, *Samsung Electronics*; Wonjun Jung, *Samsung Electronics*; Jonghoon Myeong, *Samsung Electronics*; Duyong Seo, *Samsung Electronics*; Hyun-Gi Seok, *Samsung Electronics*; Hyun-Chul Park, *Samsung Semiconductor, Inc.*; Chanhong Park, *Samsung Electronics*; Joonsuk Kim, *Samsung Electronics*

Mo1A: A SiGe TXSIP for E-Band Point-to-Point Systems from 71 to 86 GHz with >32 dBm Output Power
Christoph Steinbrecher, *Analog Devices Inc.*; Fatih Kocer, *Analog Devices Inc.*; Julio Canelo, *Analog Devices*; Ekrem Oran, *Analog Devices*; Ozgun Serttek, *Analog Devices*; Kasim Ayyildiz, *Analog Devices*; Santosh Kudtarkar, *Analog Devices*; Arun Raj, *Analog Devices*; Sacid Oruc, *Analog Devices*; Mete Coskun, *Analog Devices*

Tu1J: A 55-GHz Bandwidth PAM-4 InP DHBT Photoreceiver Based on PD–TIA Co-Design for >112-GBd Optical Transceivers
Antoine Chauvet, *III-V Lab*; Romain Hersent, *III-V Lab*; Fabrice Blache, *III-V Lab*; Filipe Jorge, *III-V Lab*; Marie Da-Rocha Amaro, *III-V Lab*; Karim Mekhazni, *III-V Lab*; Harry Gariah, *III-V Lab*; Nil Davy, *III-V Lab*; Colin Mismer, *III-V Lab*; Virginie Nodjiadjim, *III-V Lab*; Michel Goix; III-V Lab; Bertrand Ardouin, *III-V Lab*; Christophe Caillaud, *III-V Lab*; Abed-Elhak Kasbari, *LEA Laboratory*; Achour Ouslimani, *LEA Laboratory*

Tu4C: Accurate, High Coverage On-Chip Built-in Self-Test Adopting Precision-Enhanced Power Detection and Multipath Loopback for mmWave Radar IC Measurements
Doyoon Kim, *Samsung Electronics, S.LSI*; Kyunghwan Kim, *Samsung Electronics, S.LSI*; Geonho Park, *Samsung Electronics, S.LSI*; Goeun Baek, *Samsung Electronics, S.LSI*; Byeong-Taek Moon, *Samsung Electronics*; Hyun-Chul PARK, *Samsung Semiconductor, Inc.*; Chan-Hong Park, *Samsung Electronics, S.LSI*

Tu3C: A 60GHz LNA and PA Achieving 5dB NF and 35.6% Peak PAE in a Gate-All-Around (GAA) CMOS Process with Backside Power Delivery
Steven Callender, *Intel Corporation*; Ibukun Momson, *Intel Corporation*; Awani Khodkumbhe, *University of California, Berkeley*; Ali Niknejad, *University of California, Berkeley*; Said Rami, *Intel Corporation*; Stefano Pellerano, *Intel Corporation*

Thank You to Our RFIC Sponsors

DIAMOND

GlobalFoundries

PLATINUM

qorvo all around you

Qualcomm

GOLD

ANALOG DEVICES AHEAD OF WHAT'S POSSIBLE™

Sandia National Laboratories

SAMSUNG

STUDENT PROGRAMS

GlobalFoundries

SILVER

NFR Concept to Silicon noisefigure.com

tsmc

RichWave

STUDENT PAPER CONTEST

qorvo all around you

BAE SYSTEMS

The Largest Database of **RF & Microwave Products**

Use Parametric Search Filters to find products

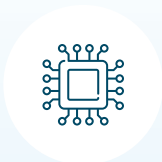
350,000+ Products	2500+ Manufacturers	500+ Categories

Find Products & Request Quotes

40,000+ Amplifiers
from 300+ Companies

40,000+ Antennas
from 250+ Companies

25,000+ Attenuators
from 200+ Companies

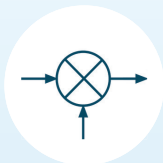


1,000+ Beamforming ICs
from 20+ Companies

40,000+ Filters
from 250+ Companies

15,000+ Couplers
from 450+ Companies

10,000+ Isolators
from 80+ Companies

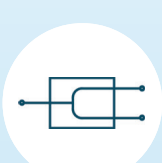


5,000+ Mixers
from 75+ Companies

10,000+ Switches
from 150+ Companies

5,000+ Terminations
from 150+ Companies

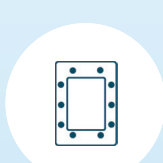
1500+ Space Qualified Components
from 50+ Companies



15,000+ Power Dividers
from 250+ Companies

20,000+ Cable Assemblies
from 100+ Companies

5,000+ Vector Network Analyzers
from 150+ Companies



20,000+ Waveguide Components
from 100+ Companies

everythingRF

www.everythingRF.com

Please visit us at
IMS2026

Booth # 24048

MONDAY WORKSHOPS | 08:00 – 17:20 | MONDAY, 8 JUNE 2026

WMA

All-Digital RF Transceivers: Architectures, Technologies and Applications for the Future of Wireless Systems

Organizers: A. Oliveira, Universidade de Aveiro; C. Fager, *Chalmers University of Technology*

08:00 – 17:20

ROOM: 151AB

The transition to all-digital RF transceivers marks a transformative shift in wireless system design, promising unprecedented levels of flexibility, scalability, and integration. This workshop brings together leading researchers and practitioners from academia and industry to explore the current state, challenges, and future directions of all-digital transceivers, covering a broad spectrum of topics from foundational architectures to application-driven innovations. All-digital transceivers replace traditional analog-intensive RF front-ends with fully digital architectures, where signal generation, modulation, transmission, and reception are primarily handled in the digital domain. This approach leverages high-speed digital-to-analog and analog-to-digital converters (DACs/ADCs), direct digital synthesis, and reconfigurable digital logic to create highly adaptable, software-defined systems that support multi-standard and multi-band operation. The workshop will begin with an overview of the architectural principles of all-digital transceivers, highlighting key building blocks, including pulsed modulators, up/down conversion architectures, filters, amplifiers and other fundamental building blocks. A comprehensive exploration of cutting-edge advances in digital and RF front-end technologies for next-generation wireless systems is presented. The first sessions focus on Delta-Sigma Modulation (DSM) for high-performance All-Digital RF Transmitters (ADTs). After revisiting key principles, advanced techniques for high-speed operation, out-of-band noise management, and hybrid DSM architectures are discussed, alongside emerging concepts such as spatial DSM for massive MIMO. Building on this, the relevance of ADTs as digital replacements for conventional RF chains is examined, highlighting their advantages in frequency agility, scalability, and integration with programmable platforms. Subsequent talks review progress in agile and scalable ADT architectures, including FPGA-based implementations and single-bit transmitters for direct antenna array driving. The benefits and trade-offs of wideband, multi-band, and multi-element operation are analyzed, providing participants with a clear perspective on the opportunities and limitations compared to analog-intensive designs. Extending the all-digital paradigm to the complete transmission–reception chain, another session introduces a Pulse-Width Modulation (PWM) approach for receivers, demonstrating how the combination of DSM-based transmitters and PWM receivers supports low-power, high-performance wireless architectures. The workshop also addresses digital transmitters for 5G and 6G, focusing on GaN-based amplifiers up to 6GHz, their role in boosting efficiency, and prospects for scaling digital architectures beyond 100GHz. This is complemented by advances in RF/microwave filter design, where new approaches achieve quasi-flat group-delay responses beyond the 3dB transmission band, thereby improving signal integrity without sacrificing selectivity. Emerging system-level concepts are also presented. A Distributed MIMO (D-MIMO) testbed based on all-digital radio-over-fiber is showcased, demonstrating practical solutions for sub-6GHz and mm-wave implementations and addressing synchronization challenges inherent to distributed architectures. Finally, the role of LEO satellite communications in the Q/V band is explored through digital beamforming and compact RF front-ends leveraging high-order Nyquist zones, enabling flexible beam generation for next-generation constellations. This workshop provides a unique platform for attendees to engage in in-depth technical discussions, exchange ideas, and foster collaborations that advance the frontier of all-digital RF systems. Together, these seven talks provide an integrated perspective on the transition to fully digital RF front-ends, offering insights into architectures, components, and system-level innovations that will shape future 5G, 6G, and non-terrestrial networks.

WMB

Amplify Your Knowledge: Mastering High Efficiency RF Power Amplifiers from Basics to Advanced Architectures

Organizers: R. Quaglia, *Cardiff University*; R. Giofré, *Università di Roma "Tor Vergata"*

08:00 – 17:20

ROOM: 152

RF Power Amplifiers (PAs) play a critical role in modern wireless and satellite communications, radar, and electronic systems, requiring a deep understanding of both fundamental principles and cutting-edge innovations. This advanced course is designed for PhD students and professional researchers seeking to expand their expertise in RF PAs design, analysis, and optimization. Starting from solid-state power amplifiers fundamentals, the course will cover theoretical concepts, including PA classes of operation, their Figures of Merit, stability considerations and efficiency enhancement techniques. Special emphasis will be placed on advanced PA architectures, including Doherty PA, Envelope Tracking and other PA architectures, which are critical for next-generation wireless and satellite communication systems. The course will also address broadband design challenges and emerging trends in integrated PAs for large-scale phased array applications. Linearization strategies, including digital predistortion (DPD), will be discussed as essential tools to mitigate distortion and improve spectral efficiency. Several design examples based on commonly used semiconductor technologies (eg GaN, GaAs etc) will be presented to highlight the link between theory and practical implementation. Through a combination of theoretical foundations, practical case studies, and research-driven discussions, attendees will gain the expertise needed to design, model, and optimize cutting-edge RF power amplifiers. By the end of the course, participants will be well-equipped to contribute to breakthrough innovations in PA technology, bridging the gap between academic research and industrial applications.

WMC

Low-Noise Receiver Systems for Space Missions

Organizers: F. Thome, *Fraunhofer IAF;* P.E. Longhi, *Università di Roma "Tor Vergata"*

08:00 – 17:20

ROOM: 153AB

Low-noise receivers are crucial system components for Earth observation and satellite communication. The complexity of such systems is growing, where today's spacecraft range from large satellite missions such as MetOp-SG, to smaller systems such as the Arctic Weather Satellite, to CubeSats such as TROPICS (Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats). One of the most important building blocks are low-noise amplifiers. Over the years, corresponding technologies have improved substantially and provided excellent noise temperatures. Furthermore, the linearity and robustness of receivers is also an important characteristic, which adds another level of complexity. This requires new technologies, such as GaN HEMTs, with the necessity of different system architectures. This workshop gives an overview of the design of low-noise amplifiers and corresponding technologies. Furthermore, several aspects of the design and performance of receiver architectures will be discussed. Rarely discussed topics, such as in-system calibration targets or the reliability testing of critical components, will also be presented. The workshop starts with aspects of low-noise receiver systems and gives examples of several satellite missions and a background to the topic. Subsequently, best practices for the design of low-noise amplifiers and receivers are presented. An overview of recent advances in low-noise transistor technologies and the reliability testing is included as well. The remaining talks focus on different possibilities of low-noise calibration approaches for satellite systems.

WMD

Materials-to-Systems Roadmap for Programmable Apertures: Sub-6GHz to THz

Organizers: A.E. Fathy, *University of Tennessee*

08:00 – 17:20

ROOM: 153C

This workshop surveys a materials-to-systems roadmap for reconfigurable apertures spanning sub-6GHz, FR3 (≈7–24GHz), mm-wave, and THz. Highlights include dual-polarized RFSOI-switched reflectarrays at 3–6GHz and 13–15GHz with true-time-delay or ultra-short phase shifters, achieving ±60° all-plane scanning and <1.5% EVM with 64-QAM. A 28GHz origami "eggbox" phased array merges electronic beam steering with controlled shape morphing to deliver near-360° azimuth coverage, multibeam and quasi-isotropic patterns, and additively manufactured foldable interconnects with 0.02dB/mm insertion loss. At higher frequencies, phase-transition and phase-change materials (VO_2, W:VO_2, GeTe) enable optically addressable, nonvolatile metasurfaces for broadband modulation, beam control, and tunable lensing in the sub-THz/THz regime, while plasmonic-nanoantenna platforms yield compact, high-SNR THz spectroscopy and imaging for sensing and security. CMOS-integrated, tile-scalable programmable metasurfaces and RIS architectures support resilient links and massive MIMO; electromagnetically consistent models and optimization frameworks extend to holographic surfaces and near-field ISAC. New multi-beam transmissive/reflective surface architectures up to 140GHz, OTA calibration and range-reduction methods for large reconfigurable arrays, and binary-coded genetic optimization of pixelated multiband antennas complete the program. Collectively, the sessions chart a path to low-loss, wide-angle, and highly programmable apertures that unify communications, sensing, and localization while remaining manufacturable, scalable, and verifiable.

MONDAY WORKSHOPS | 08:00 – 17:20 | MONDAY, 8 JUNE 2026

WME

Microwave Design for Superconducting Qubits and Quantum Amplifiers: From Fundamentals to Scalable Architectures

Organizers: D. Shiri, *Keysight Technologies;* M.A. Hassan, Keysight Technologies; S. Kim, *Keysight Technologies*

08:00 – 17:20

ROOM: 154

Superconducting qubits have emerged as a leading platform for scalable quantum computing, offering robustness, manufacturability, and seamless integration with microwave engineering techniques. This workshop presents a comprehensive journey from the foundational principles of superconducting quantum systems to advanced microwave design strategies that enable scalable architectures. We begin by exploring the physics of Josephson junctions — the non-linear inductive elements that form artificial atoms — and their integration into quantum circuits. Participants will gain insights into the design and simulation of qubit-resonator networks, quantum amplifiers, and cryogenic microwave systems operating within dilution refrigerators at millikelvin temperatures. Key engineering challenges will be addressed, including resonance frequency tuning, qubit-resonator coupling, and quantum parameter optimization (eg anharmonicities, cross-Kerr effects). The workshop will also examine the role of quantum amplifiers in enhancing readout fidelity and the importance of scalable microwave layouts for multi-qubit systems. Using real-world examples and simulation workflows, we will demonstrate how to accelerate development cycles and improve design accuracy. Attendees will leave with a clear understanding of how microwave engineering principles intersect with quantum hardware design, paving the way for scalable quantum computing architecture.

WMF

New Materials, Digital Manufacturing, and Integration Methods for Microwave, mm-Wave, and THz Components and Systems

Organizers: D. Psychogiou, *University College Cork;* J. Sorocki, *AGH University of Krakow*

08:00 – 17:20

ROOM: 156AB

Digital manufacturing technologies are transforming RF design, packaging, and integration, leading to new capabilities and use cases for high-frequency RF components and systems. The potential to digitally manufacture RF components, alongside new materials and integration processes, offers unprecedented opportunities for improving performance, reducing size/weight, and enhancing sustainability across the lifecycle of microwave systems. However, significant challenges remain in design, the realization of digitally-processed materials and manufacturing methods, and the seamless integration of individual components to full RF systems. This workshop aims to bring together advanced RF component design methodologies, manufacturing techniques, and practical RF/microwave applications. It will provide a comprehensive overview of new design, integration, and packaging techniques for microwave, mm-wave, and THz RF systems. Specifically, the workshop will give a detailed overview of novel materials, sustainable manufacturing methods, and scalable integration schemes that facilitate the realization of high-performing, highly-functional, and highly-miniaturized RF components. The workshop will bring forward recent advances in these fields by presenting the research of leading researchers and industry experts in the fields of RF component development, digital additive manufacturing, multi-material integration, and microwave materials engineering. Discussions will include cross-disciplinary advances involving manufacturing technologies, material development, and new design methods (ie design-for-print), opening new directions for materials-enabled innovation in wireless communication, sensing, and high-frequency electronics.

WMG

Recent Advances in Phase Change Materials (PCM) Switch Technology and its Microwave and mm-Wave Applications

Organizers: P. Blondy, *XLIM and Université de Limoges;* R.R. Mansour, *University of Waterloo*

08:00 – 17:20

ROOM: 156C

Phase-Change Material (PCM) RF switches are emerging as a breakthrough technology for reconfigurable microwave and mm-wave circuits. With their non-volatile operation, low insertion loss, and high power-handling capability, PCM switches offer distinct advantages over conventional alternatives. These properties make them ideal for use in phase shifters, impedance tuners, reconfigurable filters and switchable antenna arrays. At mm-wave frequencies, their scalability and fast response unlock new possibilities in adaptive beamforming, dynamic spectrum access, and next-generation 5G/6G wireless, satellite, and radar systems. This workshop will bring together leading experts from industry and academia worldwide to present recent advances and future directions in PCM-based RF technologies including coverage of device concepts, circuit integration, and application case studies. It aims to foster cross-disciplinary dialogue and broaden the community's understanding of this promising technology for future mm-wave communication platforms.

WMH

Transitions and Interconnects Across Dissimilar Transmission Lines

Organizers: A.A. Kishk, *Concordia University;* A.E. Fathy, *University of Tennessee;* K. Wu, *Polytechnique Montréal;* M.M. Fahmi, *DRDC*

08:00 – 17:20

ROOM: 157AB

Modern RF, mm-wave, and sub-THz systems stitch together multiple propagation media — microstrip, CPW/GCPW, SIW, ridge and rectangular waveguide, superconducting multilayers, and emerging flexible and additive platforms — because no single line technology satisfies bandwidth, loss, power, packaging, and cost targets simultaneously. This full-day workshop brings leading researchers and practitioners to present field-based design rules, validated topologies, and measurement workflows for high-performance transitions and interconnects across these media. Foundational talks cover the evolution of planar waveguide links and state-of-the-art SIW transitions (including compact, broadband launchers and thick–thin stackup integration). Practical sessions compare microstrip, GCPW, and SIW on a common process, detail ridge/ridge-gap waveguide connections, and treat transmission-line choices for high-speed/high-frequency ICs. Materials and manufacturing frontiers are addressed via MXenes for printable conductors, flexible hybrid electronics for ultra-low-cost modules, and multilayer superconducting devices for ultra-low-loss front-ends. A methodological block demonstrates AI/ML-assisted EM optimization (adjoint sensitivities, surrogates, active DOE) that reduces simulation burden while improving insertion/return loss and mode control. Throughout, speakers emphasize tolerance and variability, packaging and interposers, vertical/horizontal launches, and over-the-air and on-wafer verification. Attendees leave with implementable recipes and performance bounds that shorten development cycles and raise first-pass success for integrated communications, sensing/ISAC, and imaging hardware.

MONDAY WORKSHOPS | 08:00 – 17:20 | MONDAY, 8 JUNE 2026

WMI

Advanced Thermal Management in RF Systems: From Wide-Bandgap Materials to Industrial Implementation

Organizers: M. Shakouri, *Microsanj*

08:00 – 11:50

ROOM: 157C

The exponential demands for higher power densities, broader frequency coverage, and enhanced reliability in microwave systems have exposed fundamental limitations in conventional thermal design approaches. As next-generation applications push beyond traditional thermal boundaries — from 5G/6G infrastructure to automotive radar and space-based communications — the industry faces a critical inflection point where incremental improvements in thermal management are essential to meet performance requirements. This workshop addresses these challenges through a comprehensive exploration of advanced thermal characterization, materials innovation, and holistic design methodologies that span from fundamental materials science to industrial-scale implementation. The program brings together leading researchers, and industry practitioners to present breakthrough approaches that are reshaping thermal management across the RF and microwave ecosystem. The technical foundation begins with the innovations in wide-bandgap materials presented by Prof. Srabanti Chowdhury of Stanford University, whose pioneering work on ultra-wide bandgap materials demonstrates how diamond integration with Beta-Gallium Oxide enables unprecedented reduction in thermal boundary resistance while maintaining RF performance. These materials advances provide the essential building blocks for next-generation thermal management solutions, particularly in high-power RF applications where conventional thermal interface materials reach fundamental limitations. Oscar D. Restrepo offers industrial thermal modeling and characterization perspectives from GlobalFoundries, where a unique combination of theoretical expertise in phonon transport and practical TCAD thermal simulation experience bridges fundamental physics with manufacturing-scale implementation. His work spans from first-principles calculations of defect formation energies to real-world thermal assessments across advanced technology nodes, including 22FDX and 12LP platforms. Building upon materials foundations, the workshop explores state-of-the-art thermal characterization techniques through both academic research and commercial implementation. Advanced thermoreflectance imaging, POSH-TDTR technology, and emerging measurement approaches demonstrate how nanosecond temporal resolution combined with submicron spatial accuracy reveals previously inaccessible thermal phenomena in operating RF devices. These characterization advances enable predictive thermal design that was previously impossible with conventional measurement techniques. Standards and validation methodologies receive dedicated attention through participation by the National Institute of Standards and Technology (NIST), which presents traceable thermal measurement techniques and validation protocols essential for industry adoption. NIST's gate resistance thermometry methods and RF power metering standards provide the measurement foundation necessary for reliable thermal characterization across different technology platforms. The workshop culminates in a holistic design philosophy that integrates materials innovation, advanced characterization, and system-level optimization. Live demonstrations showcase how this integrated approach enables thermal-electromagnetic co-design, abandoning traditional component-level optimization in favor of system-wide performance optimization. Real-world case studies span from mm-wave antenna-in-package modules to high-power GaN amplifiers, illustrating a direct correlation between materials properties, thermal imaging data, and system performance. Interactive sessions throughout the workshop foster direct dialogue between materials researchers, device designers, and manufacturing engineers. These discussions address practical implementation challenges while exploring emerging opportunities that could reshape thermal management approaches over the next decade. The format emphasizes knowledge transfer and collaborative problem-solving rather than traditional presentation-only formats.

WMJ

Components and Systems for THz Wireless Communications and Sensing

Organizers: J. Soric, *Raytheon Technologies*; R.N. Simons, *NASA* Glenn

08:00 – 11:50

ROOM: 155

In recent years tremendous advances have been made in electronics and photonics device technologies for the generation, modulation, radiation, and detection of THz signals and the time is now right to exploit these advances to build and deploy THz systems. IEEE defines the THz band as frequencies ranging from 300 to 3000GHz, however, for most use cases frequencies extending from about 100GHz to 10THz is considered as the sub-THz and THz bands. The focus of this workshop is on the research and development of components and systems for THz wireless communications and sensing. In the THz band, the available bandwidth is very vast, and this feature can be leveraged for multi-Gbps wireless communications leading to terabits per second throughput in a multi-channel system. Besides communications, THz waves can be used for sensing the reflection, transmission, absorption, and scattering of materials which in turn can be exploited for detecting, imaging, and analyzing materials with high spectral resolution. Furthermore, the wavelength of THz waves is small and on the order of 30 microns to 3.0mm, which along with polarization of the signal can be exploited for precise position and orientation of objects, within a specific location. All the above features are crucial for 6G communications, self-driving vehicles, and industrial Internet-of-Things. Accordingly, the workshop includes presentations from individuals and organizations across the globe highlighting the THz components and systems that they have developed and their application to communications and sensing.

WMK

Unlocking the Power of Phase Information in RF Measurements

Organizers: F. Ramian, *Rohde & Schwarz;* M. Lörner, *Rohde & Schwarz;* M. Marchetti, *Maury Microwave;* T. Lück, *Rohde & Schwarz*

08:00 – 11:50

ROOM: 256

In RF device characterization, understanding and utilizing phase information is crucial for achieving accurate measurements. This workshop is designed for engineers, technicians, and researchers who seek to deepen their knowledge of phase references and their applications in vector network analyzers (VNAs) and vector signal analyzers/generators (VSAs/VSGs). The primary goal of this workshop is to emphasize the significance of phase information in RF measurements. We introduce the concept of a "signal comb" as a phase reference and a tool for enhancing measurement accuracy. Participants will gain insights into how a comb generator works and how phase references can improve the reliability of amplitude and phase measurements across various RF applications.

Key Topic #1 — Understanding Phase Information:
- Introduction to phase information and its relevance in RF measurements;
- Discussion of the limitations of traditional amplitude measurements and the often-overlooked phase references.

Key Topic #2 — The Role of Signal Comb:
- Explanation of what a signal comb is and its function in RF testing;
- How a signal comb acts as a "Swiss army knife" for calibration and broadband verification;
- Design overview of a comb generator and its traceability.

Key Topic #3 — Benefits of Phase References:
- Detailed exploration of how aligning VNAs and VSAs/VSGs to a known phase reference enhances measurement accuracy;
- The importance of traceable calibration for establishing transfer standards in amplitude and phase uncertainties.

Key Topic #4 — Practical Applications:
- Hands-on examples demonstrating the application of phase calibration in real-world scenarios;
- Case studies including time domain transformation and frequency-converting circuit measurements.

Key Topic #5 — Advanced Measurement Techniques:
- Techniques for aligning multi-port VSAs in amplitude, phase, and time using phase references;
- Over-the-air measurement of group delay in low-noise block downconverters (LNBs) and pulse response determination of amplifiers at optimized operating points.

Who Should Attend — This workshop is ideal for RF engineers, measurement technicians, and researchers involved in RF device characterization and testing. Whether you are a seasoned professional or new to the field, this workshop will provide valuable insights and practical skills to enhance your measurement capabilities. Format — The workshop will feature a combination of presentations, interactive discussions, and hands-on demonstrations. Participants will have the opportunity to engage with experts in the field and collaborate with peers to solve measurement challenges. Join us for this comprehensive workshop to unlock the full potential of phase information in your RF measurements. By the end of the session, you will have a solid understanding of phase references, the utility of signal combs, and advanced measurement techniques that can save you time and improve the accuracy of your RF testing endeavors. Don't miss this opportunity to elevate your measurement skills and ensure precision in your RF applications.

MONDAY WORKSHOPS | 08:00 – 17:20 | MONDAY, 8 JUNE 2026

	WORKSHOP TITLE	WORKSHOP ABSTRACT
WML	**Bridging from Conductive to Over-The-Air Characterization and Test for Integrated Active Antenna Systems Using Reverberation Techniques** **Organizers:** M. Vanden Bossche, *ANTENNEX;* P. Manurkar, *NIST* **13:30 – 17:20** **ROOM: 157C**	The market for integrated active electronically scanned arrays (AESA) and multiple-input multiple-output (MIMO) wireless systems is rapidly growing for ground-based and satellite telecommunications, as well as for automotive and aerospace and defense applications. Engineers, accustomed to traditional conductive characterization of RF front-ends, are increasingly confronted with over-the-air (OTA) interfaces, which makes their jobs more difficult in designing the test setups and measurement techniques while keeping measurement uncertainties small. Besides the wide use of anechoic chambers, reverberation chambers have been researched and explored for the past years to characterize different aspects of AESA / MIMO systems OTA with the focus on their active or electronic behavior, ie separate from the antenna characteristics. The goal of the workshop is to inform engineers about the state-of-the-art in reverberation measurement techniques, how they differ from those of anechoic chambers and how one may gain certain insights into the electronic behavior behind the antenna, similar to what traditional conducted measurements provided. The concepts and some exciting results will be demonstrated to make it more tangible. Attendees will learn how to make better tradeoffs related to selecting the proper characterization and test methods in every stage of AESA / MIMO product development, ie from characterizing the first design, to design validation and production.
WMM	**Integrating Sensing and Communications — Key Hardware Enablers and Emerging Techniques** **Organizers:** A. Valdes-Garcia, *IBM Research;* D. Choudhury, *SeraTech;* P. Sen, *Barkhausen Institut* **13:30 – 17:20** **ROOM: 155**	Integrated Sensing And Communication (ISAC) applications have become a key emerging area in the next-generation wireless evolution. The role of ISAC will vary, ranging from tasks such as radar coordination, context awareness for communication to enhanced security and improving the trustworthiness/resilience of future networks. ISAC has the potential to transform current technologies by introducing context awareness, enabling breakthroughs in applications such as connected driving and next-generation mobile communications. The investigation of hardware enablers and emerging techniques considering different signal processing aspects will play an important role in the near future to realize the full potential of ISAC, leading to faster deployments. This half-day workshop will highlight these technologies and enablers featuring both applied and academic researchers working in hardware, signal processing, and system integration/ demonstration aspects of ISAC targeting various applications. RF hardware design approaches that enable sharing components between both sensing and communication functions will be the key to faster deployment. The workshop talks will cover opportunistic sensing using existing communication infrastructure as well as dedicated approaches for sharing resources while achieving ISAC. Two talks will focus on antenna arrays for ISAC and one exploring special electromagnetic beams carrying orbital angular momentum. The presentations will include results from hardware supporting the feasibility of the proposed concepts.
WMN	**Solid-State Transmitters for SATCOM: from Architectures and Challenges to Integration and Deployment** **Organizers:** A. Bogusz, *Cardiff University;* A. Piacibello, *Politecnico di Torino* **13:30 – 17:20** **ROOM: 256**	Power Amplifiers (PAs) are key elements in every communication link, and their performance strongly impacts a system's data throughput, power consumption, size, and reliability. With the transition from a small number of GEO satellites to large-scale constellations in LEO and MEO, driven by commercial and defence applications, there is increasing pressure to rethink PA architectures. Efficiency, bandwidth, and linearity remain central figures of merit, but the trade-offs between them acquire new dimensions in the context of satellite communications, where cost per bit, scalability, and long-term reliability are critical. This workshop will bring together perspectives from MMIC designers and system engineers to explore how solid-state PAs are evolving to meet these demands. Presentations will cover advances in GaN technology, thermal and reliability challenges, efficiency enhancement techniques, and integration. Looking ahead, the workshop will also highlight areas where new approaches could shift the current landscape: highly integrated front-end modules, thermal management, and new characterisation methods for devices at mm-wave and sub-THz frequencies. The intended outcome is to provide participants with a snapshot of current best practices and a clear view of the open challenges that will define the next steps in SATCOM PA research.

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

PHASED ARRAY BOOTCAMP | 08:00 – 11:50 | MONDAY, 8 JUNE 2026 | ROOM: 260

The Boot camp runs ½ day (4 hours) including 20-minute break. Four modules will be presented. The broad theme of the bootcamp is to educate, the high frequency (RF,MW and mm wave) engineers, the processing in the digital world where the analog RF waveforms from array antenna and electronics are available in digitized form. Popular techniques for beam shaping, beam spoiling, null steering, beam optimization, interference mitigation will be explained, targeting applications like massive MIMO, Reflective intelligent surfaces (RIS), direction of arrival estimation etc. The goal is not to delve deep into mathematics, but to provide an intuitive understanding of the techniques. Even though the algorithms are analytically sound, they often lose their efficacy due to the impairments in the electronics and antenna array. Hence treatment of all important RF impairments, how they can be captured accurately, and modeled accurately, will be discussed. The impact of RF impairments on the algorithms will be presented as well. Calibration techniques will be discussed to show recovery of the desired functionality by increasing the efficacy of the processing algorithms. The expected audience will be a mix of experienced phased array designers and engineers new to this field.

Organizers: Murali S. Murthy Upmaka, *Keysight,* **Ian Rippke,** *Keysight*

Introduction to Phased Array Antenna Systems and their Applications
Author: Murali .S Murthy Upmaka, *Keysight*

Phased Array Antenna Systems and their Applications to mMIMO and RIS
Author: Sassan Ahmadi, *Keysight*

Signal Processing for Digital Beamforming and Beam Shaping for Direction-of Arrival Estimation
Author: Honglei Chen, *Mathworks*

Design Considerations for Digital Transmit Phased Arrays: Data converter performance asymmetries remedy and calibration
Author: Laila Marzall, *Colorado University at Boulder*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RF BOOTCAMP | 08:00 – 17:20 | MONDAY, 8 JUNE 2026 | ROOM: 259AB

This course will provide an overview of RF and Microwave basics, with theory, design and measurement techniques as well as applications. The intended audience includes technicians, new engineers, engineers who may be changing their career path, marketing and sales professionals seeking a better understanding of microwave technology, as well as current college students looking to learn more about the practical aspects of RF and Microwave technology. The format of the RF Boot Camp is interactive based learning, with multiple presenters from industry and academia presenting on a variety of topics including: RF/Microwave systems basics, network and spectrum analysis, simulation and matching network design, modulation and signal analysis, signal generation and modulation analysis, as well as real-world emerging challenges for RF and microwave technologies. Students will receive IEEE Continuing Education (CEU) credit for participation in this class.

Organizers: Ian Rippke, *Keysight Technologies;* **Larry Dunleavy,** *Modelithics, Inc.*

The RF/Microwave Signal Chain, Network Analysis and Measurement
Author: Steve Crain, *Keysight Technologies*

Spectral Analysis and Receiver Technology
Author: Steve Crain, *Keysight Technologies*

RFMW Characterization, Quantum System Analysis and Design, and Impedance Matching
Author: Kevin O'Brien, *Massachusetts Institute of Technology*

Signal Generation, Modulation and Vector Signal Analysis
Author: Steve Crain, *Keysight Technologies*

The Convergence of Advanced Models and Measurements for Virtual Prototyping Success
Author: Larry Dunleavy, *Modelithics, Inc.*

End to End RF System Simulation
Author: Murthy Upmaka, *Keysight Technologies*

RFMW Application Focus: Phased Array Systems for Counter-UAS Radar
Author: Bryan Goldstein, *Analog Devices*


CONNECTING AND PROTECTING OUR WORLD
With three market-leading business, world-class operations and investments in research and development, we offer capabilities no one else can. Together, our global team pushes the boundaries of known science—and finds new ways to connect and protect our world.
Learn more at **rtx.com**
RTX
COLLINS AEROSPACE | PRATT & WHITNEY | RAYTHEON

252AB

Mo1A: Industry Innovations in Transceivers and Beamformers for Communication and Radar

Chair: Susnata Mondal, *Intel*
Co-Chair: Arun Paidimarri, *IBM*

08:00

Mo1A-1: Ethernet to RF: Single Chip ORAN 4TX/4RX 5G Radio Unit Base Station Transceiver

K. Gard, J. Fan, D. Ozis, G. Allan, K. Sheikh, J. Fortier, T. Montalvo, B. Zhao, *Analog Devices*; D. McLaurin, B. Babjak, I. Gheorghe, B. Wilcox, M. Manglani, A. Bray, *Analog Devices*

08:20

Mo1A-2: A 57–67GHz +14dBm 4-Channel Transmitter With 7-Bit Phase Shifter and Built-In Self-Test for Doppler-Offset Doppler Division Multiplexing FMCW Radar

J.S.-C. Chien, *Samsung*; S. Dey, *Samsung*; Y. Chen, *Samsung*; M. Li, *Samsung*; I.S.-C. Lu, *Samsung*; T. Chang, *Samsung*; W. Wu, *Samsung*; J. Hur, *Samsung*

08:40

Mo1A-3: A K-Band Fully-Connected 4-Channel Beamforming Transmitter IC for LEO SATCOM in 65nm CMOS

J. Yoo, *ETRI*; J. Lim, *ETRI*; S.-M. Moon, *ETRI*; H. Lee, *ETRI*; H. Lim, *ETRI*; D.-P. Chang, *ETRI*

09:00

Mo1A-4: A SiGe TXSIP for E-Band Point-to-Point Systems from 71 to 86GHz with >32dBm Output Power

C. Steinbrecher, *Analog Devices*; F. Kocer, *Analog Devices*; J. Canelo, *Analog Devices*; E. Oran, *Analog Devices*; O. Serttek, *Analog Devices*; K. Ayyildiz, *Analog Devices*; S. Kudtarkar, *Analog Devices*; A. Raj, *Analog Devices*; S. Oruc, *Analog Devices*; M. Coskun, *Analog Devices*

09:20

09:40

254AB

Mo1B: Advanced LC-VCO Topologies for Ku- and Ka-Band

Chair: Teerachot Siriburanon, *University College Dublin*
Co-Chair: Hanli Liu, *Zhejiang University*

Mo1B-1: A 12–16.3-GHz 197.7-dBc/Hz-FOMT Harmonic-Shaping VCO Using Enhanced Common-Mode Resonance Expansion Based on a Triple-Tank Coupled Resonator

J. Zhang, *Tianjin Univ.*; M. Yu, *Tianjin Univ.*; K. Ma, *Tianjin Univ.*

Mo1B-2: A 15–18.3GHz Upper Ku-Band LC-VCO Achieving 201dBc/Hz FoMA in 65-nm CMOS

A. Nelson, *IIIT Hyderabad*; A. Yadav, *IIIT Hyderabad*; N.N. Moudghalya, *IIIT Hyderabad*; A. Srivastava, *IIIT Hyderabad*

Mo1B-3: Cross-Coupled CMOS Series-Resonance VCO with 3rd-Harmonic Output and -142dBc/Hz Phase Noise at 10MHz Offset from 29.7GHz

K. Vural, *Università di Pavia*; A. Bilato, *Fondazione Chips-IT*; G. De Filippi, *Fondazione Chips-IT*; A. Mazzanti, *Università di Pavia*

Mo1B-4: Fundamental 9.9-to-30GHz 207dBc/Hz FoMT Quad-Core Quad-Mode VCO Utilizing One-Coil-For-All Topology in 40nm CMOS

C. Zhou, *SCUT*; H. He, *NUS*; H. He, *SCUT*; H. Yang, *HKUST*; Y. Liu, *HKUST*; Z. Wang, *CityUHK*; B. Li, *SCUT*; X. Yi, *SCUT*; Z. Chen, *SCUT*

257AB

Mo1C: Digital PAs and Transmitters

Chair: Zhiming Deng, *MediaTek*
Co-Chair: Song Hu, *Apple*

Mo1C-1: A 2.4-GHz Reconfigurable Digital Transmitter with Three-Vector-Synthesized IQ-Shared PA and Envelope Rotation Calibration for Multi-Standard IoT Applications

L. Ma, *Tianjin Univ.*; Z. Ma, *Tianjin Univ.*; Q. Li, *Tianjin Univ.*; H. Zhang, *Tianjin Univ.*; D. Liang, *Tianjin Univ.*; K. Li, *Tianjin Univ.*; H. Yan, *Tianjin Univ.*; K. Wang, *Tianjin Univ.*

Mo1C-2: A 28.5dBm 3.3V/1.1V All-Digital Wi-Fi 7 Polar Transmitter Employing Triple-Stacked Doherty Class-G SC-DPA in 14nm Fin-FET

N.R. Shay, *Tel Aviv University*; E. Solomon, *Intel*; D. Ben-Haim, *Intel*; E. Socher, *Tel Aviv University*; O. Degani, *Tel Aviv University*

Mo1C-3: +28.5dBm 5–7GHz FIR and Doherty Polar DTX Achieving -155dBc/Hz OOC Noise for WiFi MLO Applications

E. Borokhovich, *Tel Aviv University*; E. Socher, *Tel Aviv University*; O. Degani, *Tel Aviv University*

Mo1C-4: A 12 Bit, 1.3GHz to 4.7GHz Switched Current Source RF Power-DAC Achieving -47.2dB EVM for 4096-QAM

M. Wittlinger, *Univ. Stuttgart*; J. Finkbeiner, *Univ. Stuttgart*; R. Nägele, *Univ. Stuttgart*; M. Grözing, *Univ. Stuttgart*; M. Berroth, *Univ. Stuttgart*; G. Rademacher, *Univ. Stuttgart*

253ABC

Mo1D: Components for Wireline Communications and Quantum Computing

Chair: Subhanshu Gupta, *Washington State University*
Co-Chair: Mohamed I. Ibrahim, *Cornell University*

Mo1D-1: Low Cost Wideband Continuous-Time Linear Equalizers (CTLE) Based on SiGe BiCMOS Phase Change Material (PCM) Switches

T. Liang, *Univ. of California, San Diego*; M.H. Mahmud, *Univ. of California, San Diego*; H. Al-Rubaye, *Univ. of California, San Diego*; G.M. Rebeiz, *Univ. of California, San Diego*

Mo1D-2: A 1.28pJ/b 32Gb/s Digital Isolator Using Coupled-Line Transformer for High-Speed Data Links

J. Zhang, *UESTC*; R. Wu, *UESTC*; Y. Huo, *UESTC*; Z. Wang, *UESTC*

Mo1D-3: A pnp-npn Folded Cascode 240-GS/s 2-to-1 Analog Multiplexer in Complementary 130-nm SiGe BiCMOS

M. Khurram, *Univ. of Toronto*; T. Jian, *Univ. of Toronto*; P. Schvan, *Ciena*; S.P. Voinigescu, *Univ. of Toronto*

Mo1D-4: A Cryo-CMOS Electron/Nuclear Spin Controller with Combined GHz/MHz Drivers for Color-Center Qubits

M.A. Elbadry, *Technische Universiteit Delft*; N. Fakkel, *Technische Universiteit Delft*; L. Enthoven, *Technische Universiteit Delft*; F. Sebastiano, *Technische Universiteit Delft*; M. Babaie, *Technische Universiteit Delft*

MONDAY

252AB

Mo2A: mm-Wave and Sub-THz Transmitters and Receivers

Chair: Najme Ebrahimi, *Northeastern University*
Co-Chair: Muhammad Waleed Mansha, *Nokia-Bell Laboratories*

Mo2A-1: INFINITY: A 245–310GHz InP-FinFET CMOS Co-Packaged Sliding-IF Transmitter with On-Chip Resonant Cavity Antenna

B. Gungor, *KU Leuven*; S. Gielen, *IMEC*; Y. Zhang, *IMEC*; M. Ingels, *IMEC*; P. Reynaert, *KU Leuven*

Mo2A-2: A Novel 128GHz 8-PSK Receiver Using an On-Chip Multi-Probed Interferometer for Direct Phase-to-Bits Demodulation

R. Chen, *Univ. of California, Los Angeles*; H.-Y. Chien, *Univ. of California, Los Angeles*; B. Yan, *Univ. of California, Los Angeles*; C.-J. Tien, *Univ. of California, Los Angeles*; M.-C.F. Chang, *Univ. of California, Los Angeles*

Mo2A-3: Antenna-Integrated, Chip-Embedded Glass Packaging of 200-GHz Transceiver Modules

Y. Nemoto, *Univ. of California, Santa Barbara*; X. Li, *Georgia Tech*; M. Swaminathan, *Georgia Tech*; M.J.W. Rodwell, *Univ. of California, Santa Barbara*

Mo2A-4: A 240Gb/s 0.51pJ/b D-Band Direct-Conversion Receiver with Injection-Locking Based Quadrature Correction in 28nm CMOS

X. Shen, *Fudan Univ.*; X. Feng, *Fudan Univ.*; S. Men, *Fudan Univ.*; H. Zhu, *Fudan Univ.*; N. Xu, *Fudan Univ.*; C. Jiang, *Fudan Univ.*

Mo2A-5: A 138-GHz Dielectric Waveguide Link with 4.87pJ/bit Efficiency in 28-nm CMOS

J. Guo, *Nanjing Univ.*; X. Cheng, *Nanjing Univ.*; Y. Wang, *Nanjing Univ.*; Y. Liu, *Nanjing Univ.*; J. Li, *Nanjing Univ.*; L. Du, *Nanjing Univ.*; Y. Du, *Nanjing Univ.*

254AB

Mo2B: High-Frequency LO Generators and VCOs

Chair: Alexandre Siligaris, *CEA-LETI*
Co-Chair: Salvatore Finocchiaro, *Qorvo*

Mo2B-1: A 140-GHz 9-mW Self-Calibrating Quadrature Generator

L. Kong, *Fudan Univ.*

Mo2B-2: An 85.5-to-94.5-GHz W-Band Fully-Symmetric Quadrature LO Generator with a Fast Quadrature Calibration Technique, Achieving Closely Matched 61-fsRMS Jitter and 41-dB IRR

S. Lee, *Seoul National Univ.*; S. Jung, *Seoul National Univ.*; S. Kwak, *Seoul National Univ.*; S. Lee, *Seoul National Univ.*; H. Lee, *Seoul National Univ.*; J. Choi, *Seoul National Univ.*

Mo2B-3: A 69.2–85.6-GHz LO Generator Achieving 192.2-dBc/Hz FoM and 201.4-dBc/Hz FoMA with Current-Reused Coupled Frequency Tripler and Implicit Ninth Harmonic Extraction in 65nm CMOS

S. Tian, *SUSTech*; K. Yang, *SUSTech*; Y. Chen, *Tsinghua Univ.*; X. Liu, *SUSTech*

Mo2B-4: A 40-GHz Series-Resonance VCO with Windmill-Coupled F-Type Inductive Network Achieving -132.36dBc/Hz PN at a 10-MHz Offset

C. Yu, *CUHK-Shenzhen*; C. Song, *CUHK-Shenzhen*; S. Zheng, *CUHK-Shenzhen*; L. Wu, *CUHK-Shenzhen*

257AB

Mo2C: LEO SATCOM and FR3 Transmitter Front-Ends and Power Amplifiers

Chair: Andreia Cathelin, *STMicroelectronics*
Co-Chair: Tolga Dinc, *Texas Instruments*

Mo2C-1: A High Performance Complementary SiGe HBT Power Amplifier with a Three Conductor Coupled Line Four-Way Wilkinson Combiner Balun for Emerging K-Band LEO SATCOM Transmit Front-End IC

S. Lee, *Ajou Univ.*; Y. Kang, *Ajou Univ.*; I. Ju, *Ajou Univ.*

Mo2C-2: A Ka-Band CMOS 4-Element Beamforming Transmitter for LEO SATCOM Using PA with Negative-Feedback-Based Interstage Matching Network and Asymmetric Wilkinson Power Divider

W. Lee, *Chonnam National Univ.* ; H. Kim, *Chonnam National Univ.* ; H. Song, *Chonnam National Univ.* ; M. Lee, *Chonnam National Univ.* ; S. Kong, *ETRI*; S. Jang, *ETRI*; H.-D. Lee, *ETRI*; B. Park, *ETRI*; S. Lee, *Chonnam National Univ.* ; J. Park, *UNIST*

Mo2C-3: A Watt-Level, Thermally Reliable Ku-Band SiGe HBT Cascode Flip-Chip Power Amplifier Module Using an Optimal IC-to-Package ElectroThermal Codesign for LEO SATCOM Transmit Front-End

S. Han, *Ajou Univ.*; M. Kim, *MMII Laboratory*; I. Ju, *Ajou Univ.*

Mo2C-4: Top-Metal-Only RFIC Retargeting for Fast Specs-to-Silicon Iteration Enabled by AI-Assisted Inverse Design

C. Chu, *ETH Zürich*; Y. Liu, *ETH Zürich*; Y. Xu, *ETH Zürich*; S. Fu, *CSEM*; T. Torii, *Mitsubishi Electric*; S. Shinjo, *Mitsubishi Electric*; K. Manetakis, *CSEM*; A. Burg, *EPFL*; H. Wang, *ETH Zürich*

10:10
10:30
10:50
11:10
11:30
11:50

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RFIC Panel Session

Battle for RFIC Supremacy: Students versus Professionals

12:00 – 13:20 | MONDAY, 8 JUNE 2026 | ROOM: 253ABC

A quiz show battle for RFIC knowledge supremacy is brewing between students and experienced professionals. Will it be the experience of the career RFIC veterans or the students who have been in the classroom more recently? Come join this fun and interactive panel to find out!

Organizers: Travis Forbes, *Sandia National Laboratories,* **Emily Naviasky,** *IBM*

Industry Team:

Andreia Cathelin, *ST Microelectronics*	**Aly Ismail,** *Apple*	**Alexandre Siligaris,** *CEA - Leti*

Student Team:

Yazan Saad-Aldine, *Technische Universität Braunschweig*	**Keith Liang,** *University of Maryland*	**Pradyot Yadav,** *Massachusetts Institute of Technology*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

Three Minute Thesis

14:30-16:30 | MONDAY, 8 JUNE 2026 | ROOM: 205AB

3MT® THREE MINUTE THESIS — FOUNDED BY THE UNIVERSITY OF QUEENSLAND

In its tenth year, the IMS2026 3MT competition is designed to stimulate interest in the wide range of applications of microwave technology Contestants will make a presentation of three minutes or less, supported only by one static slide, in a language appropriate to a non-specialist audience The winners of the 3MT competition will receive their prizes at the Student Awards Luncheon on Thursday, 11 June 2026.

This year's finalists are:

We3E:	Shaoxuan Zhang, *Southern University of Science and Technology*	**Hear whisper inside refrigerator**
Th2B:	Niklas Schwab, *Institute of Microwaves and Photonics FAU Erlangen*	**When High Power Is Out of Tune – And How to Fix it**
Tu4H:	Alex D. Santiago-Vargas, *Purdue University*	**Silence the shouters**
We2G:	Niccolò Villaggi, *ETH Zurich*	**Satellite Communication Circuits for High-Speed and Global Connectivity**
Tu2I:	Muhammad Uzair, *FAMU-FSU College of Engineering*	**3D-Printed Circuits for Smarter Wireless Communication Enabled Using True Time Delay**
Th1C:	Ayesha Naseem, *FAMU-FSU College of Engineering*	**A 3D printed Quarter Coin Sized Solution to Wireless Problem**
Tu1E:	Prabhav Satish Manchanda, *Brandenburg University of Technology Cottbus-Senftenberg*	**When Devices Learn to Talk**
Tu2F:	Jaegwan Kim, *Department of Semiconductor Convergence Engineering Sungkyunkwan University, South Korea*	**Breaking the Range Barrier in Future Wireless Communication**
Tu3F:	Feiyu Shan, *Arizona State University*	**Beam Steering Enables a Smart Connected World**
Tu2E:	Sourya Prakash Rout, *Barkhausen Institut*	**Waking Up Next-Gen Wireless.**
We1D:	Kristof Dausien, *Ruhr University Bochum*	**Listening to Liquids with Terahertz**
We2C:	Max Joris Hubmann, *Otto-von-Guericke University Magdeburg*	**Shine light on the Invisible: Revisiting Patch Antennas to Unravel the Brains Mysteries**
Tu3G:	Islam Hassan Abdelaziem Hassanein, *Purdue University*	**Borrowing Energy from Time to Boost Invisible Signals**
Tu2B:	Daniele Lodi Rizzini, *Politecnico di Milano*	**The Conductor of High-Speed Communications**
Mo1C:	Linhao Ma, *Tianjin University*	**Multi-Device Interaction in IoE**
Tu2C:	Miao Yu, *Tianjin University, China*	**Teaching a Tiny Chip Sing Powerfully**
Tu1C:	Ruiyang Jiang, *Tsinghua University*	**Path toward the Chiplet Phased Array: A K-Band Prototype**
Tu3A:	Samira Bouzid-Driad, *Uminted Monolithic Semiconductors*	**Power & Heat**

2026 IEEE FELLOWS

RECOGNIZING THE ACHIEVEMENTS OF ITS MEMBERS IS AN IMPORTANT PART OF THE MISSION OF IEEE. Each year, following a rigorous evaluation procedure, the IEEE Board of Directors confers a selected group of members for elevation to IEEE Fellow. The IEEE Fellow is the highest grade of membership in the IEEE. Less than 0.1% of voting members are selected annually for this member grade elevation. It is recognized by the technical community as a prestigious honour and an important career achievement.

CLASS OF 2026 IEEE FELLOWS, EVALUATED BY MTT-S	
Simone Bastioli	*for his contributions to microwave filter concepts and topologies*
Rhonda Franklin	*for leadership and contributions to wafer-level high-frequency packaging and microwave engineering education and workforce development*
Anthony Ghiotto	*for his contributions to substrate integrated waveguide technologies*
Songbin Gong	*for contributions to RF acoustic wave device research and commercialization*
Xun Gong	*for contributions to integration of high-Q filters and antennas and their applications*
Katia Grenier	*for contributions to microwave biological sensing and its application to healthcare*
Etienne Perret	*for contributions to Radar Backscatter Communication and Sensing based on chipless Radio Frequency Identification technology*
Shahriar Shahramian	*for the development of state-of-the-art millimeter-wave phased-arrays and D-band communication links*
Jan Stake	*for contributions to the advancement of Terahertz Technology*
Leo Vreede	*for contributions to mixed-signal high frequency device characterization and digitally assisted wireless transmitters*
Withawat Withayachumnankul	*for contributions to terahertz technology including metasurfaces, antennas, and integrated systems for sensing and communications*
Peter Zampardi	*for contributions to the analysis, modeling and design of heterojunction bipolar transistors and circuits*
Mohammad Hossein Zarifi	*for contributions to Applied Electromagnetics and Advanced Materials for Cutting-Edge Sensing and Communication Devices*
CLASS OF 2026 IEEE FELLOWS, EVALUATED BY OTHER IEEE SOCIETIES/COUNCILS	
Hakan Bagci	*for contributions to computational electromagnetics*
Sudipto Chakraborty	*for contributions to ultra-low power circuits and systems*
Tian Hong Loh	*for contributions to OTA measurement techniques and pattern reconfigurable antenna systems*
Guo Qing Luo	*for contributions to substrate integrated frequency-selective surfaces and slot antennas*
Yong Mei Pan	*for contributions to dielectric resonator and filtering antennas*
Wei Sha	*for contributions to computational nano and quantum electromagnetics*
Toru Takahashi	*for leadership in development of phased arrays for satellite communication and radar systems*
Ming-Chun Tang	*for contributions to the realization of multifunctional electrically small Huygens dipole antennas and filtennas*
Thomas T. Wong	*for contributions to high-frequency electronics and materials charaterization*

252AB

Mo3A: Broadband Design Techniques for RF Amplifiers and Switches

Chair: Hsieh-Hung Hsieh, *TSMC*
Co-Chair: Shintaro Shinjo, *Mitsubishi Electric*

13:30

Mo3A-1: A 2-to-18GHz Reconfigurable LNA Using Direction Switchable Coupling Presenting 0.78-to-1.24dB NF in 0.15-µm GaAs pHEMT

H. Ning, *UESTC*; Z. Wang, *UESTC*; Y. Zhang, *UESTC*; X. Li, *UESTC*; X. Tang, *UESTC*; Y. Wang, *UESTC*

13:50

Mo3A-2: MIM Capacitor-Assisted Inverse Design of Nonintuitive Amplifiers

V. Chenna, *Univ. of Southern California*; H. Hashemi, *Univ. of Southern California*

14:10

Mo3A-3: A Broadband Distributed Low-Noise Amplifier with Full-Band Noise Optimization and Built-In Balun

Y. Fang, *Univ. of Texas at Austin*; L. Liu, *Univ. of Texas at Austin*; H. Guo, *Rice Univ.*; T. Chi, *Rice Univ.*; S. Li, *Univ. of Texas at Austin*

14:30

Mo3A-4: A Broadband Distributed Amplifier Extending the Operation Frequency to 0.944fT

J. Hu, *Tianjin Univ.*; C. Xie, *CAEP*; F. Meng, *Tianjin Univ.*; K. Ma, *Tianjin Univ.*

14:50

Mo3A-5: A DC-to-170GHz Broadband Distributed SPDT-Switch and Power-Combiner Combo with Source Switch Control

Y. Fang, *Univ. of Texas at Austin*; L. Liu, *Univ. of Texas at Austin*; S.H. Chai, *Univ. of Texas at Austin*; H. Wang, *Rice Univ.*; T. Chi, *Rice Univ.*; S. Li, *Univ. of Texas at Austin*

15:10

254AB

Mo3B: Advanced Frequency Conversion & Filtering Techniques

Chair: Tong Zhang, *Google*
Co-Chair: Jesse Moody, *University of Maryland*

Mo3B-1: A W-Band Low-Noise Switched-Gm Down-Conversion Mixer with Gm-Boosting Feedback and Trifilar Transformer in 65-nm CMOS

B. Guo, *CUIT*; J. Gong, *Sichuan Univ.*; J. Chen, *Huawei Technologies*

Mo3B-2: A Broadband Fully-Distributed Mixer-First Receiver Achieving 40–128GHz RF Bandwidth

Z. Fu, *Univ. of Texas at Austin*; H. Yu, *Univ. of Texas at Austin*; G. Topalli, *Rice Univ.*; T. Chi, *Rice Univ.*; S. Li, *Univ. of Texas at Austin*

Mo3B-3: An FR3 Simultaneous Dual-Carrier Passive Mixer-First Diplexer Receiver Front-End Achieving 6.4dB NF and -3.2dBm B1dB

J.C. Ye, *Cornell Univ.*; A.H. Antón, *Cornell Univ.*; A.C. Molnar, *Cornell Univ.*

Mo3B-4: A 6GHz 3× Subharmonic Mixer with 12.4-dB Conversion Gain and 73-dB Fundamental Rejection

A.R. Aboulsaad, *Univ. of Washington*; Z. Wu, *Univ. of Washington*; N. Levy, *Univ. of Washington*; J.C. Rudell, *Univ. of Washington*

Mo3B-5: A 1.5–4-GHz Reconfigurable N-Path Notch Filter with >40-dBc Rejection and >15-dBm B1dB

G. Zhou, *UESTC*; Z. Chen, *UESTC*; X. Chen, *UESTC*; P.-L. Chi, *NYCU*; T. Yang, *UESTC*

257AB

Mo3C: Wideband and High-Efficiency PAs for D-Band and mm-Wave

Chair: Hyun-Chul Park, *Samsung*
Co-Chair: Patrick Reynaert, *KU Leuven*

Mo3C-1: A D-Band Variable-Gain Balanced Power Amplifier with 36% FBW, 18.2dBm PSAT and Reconfigurable Adaptive Bias in 22-nm FD-SOI

G. Venturini, *KU Leuven*; P. Reynaert, *KU Leuven*

Mo3C-2: A 0.036mm^2, 145GHz CMOS Power Amplifier with 7.4% PAE1dB and 4.2dBm OP1dB for Large Arrays

K. Park, *Univ. of California, Santa Barbara*; M.J.W. Rodwell, *Univ. of California, Santa Barbara*

Mo3C-3: A 9.5-to-40GHz Ultra-Broadband Linear Power Amplifier with Compensated Coupled-Line Transformer in 65-nm Bulk CMOS

S. Yoo, *Pusan National Univ.*; K. Oh, *Pusan National Univ.*; G. Kim, *Pusan National Univ.*; I. Nam, *Pusan National Univ.*; O. Lee, *Pusan National Univ.*

Mo3C-4: A 15.5–46.0GHz Broadband Power Amplifier with 19.0–22.0dBm Psat and 30.0% Peak PAEmax in 28-nm Bulk CMOS

T. Huang, *Fudan Univ.*; H. Xu, *Fudan Univ.*; Y. Yin, *Fudan Univ.*

Mo3C-5: A 37–43GHz VSWR-Resilient Load-Isolated Doherty Power Amplifier Achieving 26% Average PAE at 36Gb/s in 45-nm SOI CMOS

Y. Ibrahim, *Univ. of California, Berkeley*; A. Niknejad, *Univ. of California, Berkeley*

252AB

Mo4A: Integrated Radar and Spectrum-Sensing Arrays

Chair: Harald Pretl, *Johannes Kepler Universität Linz*

Co-Chair: Mustafijur Rahman, *IIT Delhi*

Mo4A-1: A 4T4R Code-Domain UWB Radar with Fully Analog Multi-Lag Correlators and Pre-Correlation Averaging — 15:40

A. Undavalli, *Northeastern University* ; A.S. Kumar, *Yale Univ.*; T.G. Liang, *Northeastern University* ; K. Rashed, *Oregon State Univ.*; S. Chakrabartty, *WashU*; A. Natarajan, *Yale Univ.*; A. Nagulu, *Northeastern University*

Mo4A-2: A 2 to 20GHz Resolution-Enhanced RF Spectrum Sensor Using a Looped Phase-Time Array — 16:00

L. Zhong, *Penn State*; M. Tian, *Penn State*; W. Lee, *Penn State*

Mo4A-3: 405-GHz 2×2 Concurrent Transceiver Pixel Array with 7.8-GHz Bandwidth Using Series-Coupled Standing-Wave Oscillators — 16:20

S. Noh, *Univ. of Texas at Dallas*; G. Murugesan, *Univ. of Texas at Dallas*; S. Mun, *Univ. of Texas at Dallas*; Y.-J. Lee, *Univ. of Texas at Dallas*; F. Zhang, *Univ. of Texas at Dallas*; W. Choi, *Seoul National Univ.*; K.K. O, *Univ. of Texas at Dallas*

Mo4A-4: A Doppler-Assisted 76GHz PMCW Radar with Meter-Scale Unambiguous Range and µm-Scale Range Accuracy — 16:40

Z. Zhang, *Univ. of California, Irvine*; X. Liu, *Univ. of California, Irvine*; Y. Huang, *Univ. of California, Irvine*; H. Aghasi, *Univ. of California, Irvine*

Mo4A-5: A W-Band RTWO-Based Digital Transmitter for PMCW Radar Achieving 14.9% Efficiency — 17:00

S. Yang, *USTC*; Z. Zhang, *USTC*; W. Tao, *USTC*; Y. Yang, *USTC*; J. Deng, *USTC*; J. Liu, *Hefei SCMI*; F. Lin, *USTC*; R.B. Staszewski, *Univ. College Dublin*; L. Lou, *USTC*; Y. Hu, *USTC*

254AB

Mo4B: Front-Ends and LNAs

Chair: Vojkan Vidojkovic, *Technische Universiteit Eindhoven*

Co-Chair: Marcus Granger-Jones, *Qorvo*

Mo4B-1: A 4-Channel Self-Synchronizing Receiver Array Without LO Distribution with Angle-of-Arrival Estimation — 15:40

S. Zakir, *Arizona State Univ.*; W. Ahmad, *Arizona State Univ.*; A. Kiyaei, *Arizona State Univ.*; A.H. Shah, *Arizona State Univ.*; S. Zeinolabedinzadeh, *Arizona State Univ.*

Mo4B-2: A 24–29.5-GHz CMOS Front-End Module with 33.6% TX Peak Efficiency and 5.8-mW RX Power Consumption — 16:00

D.-J. Shin, *KAIST*; S. Hong, *KAIST*

Mo4B-3: A 5.2~7.8GHz Cryo-CMOS LNA with 4-K Noise Temperature with Cascode gm-Boosting and Current Reuse for Noise Reduction — 16:20

Y. Geng, *UESTC*; H. Fu, *Chengdu Data Automation System Technologies*; H. Chen, *UESTC*; C. Wang, *UESTC*

Mo4B-4: A 10–19.2GHz LNA Using a Partially Three-Winding Transformer and Class-AB Operation Achieving -5.3 to -2.4 dBm IP1dB for 6G FR3 Receivers — 16:40

M.-S. Baek, J.-H. Kim, J.-H. Song, J.-S. Park, I. Kim, E.-G. Lee, *Chungnam National University*; S.-M. Moon, *ETRI*; D.-P. Chang, *ETRI*; C.-Y. Kim, *Chungnam National University*

Mo4B-5: A 77.3-GHz 3.36-dB NF LNA with Cross-Coupled Noise Cancellation and Low-Loss Input Matching Transformer in 22-nm CMOS — 17:00

J. Deng, *USTC*; A. Li, *USTC*; B. Liao, *USTC*; Z. Zhang, *USTC*; S. Yang, *USTC*; J. Liu, *Hefei SCMI*; Z. Xu, *Hefei SCMI*; R.B. Staszewski, *Univ. College Dublin*; L. Lou, *USTC*; Y. Hu, *USTC*

257AB

Mo4C: Sub-THz Power Amplifiers and Bidirectional Amplifiers

Chair: Mohamed Elkhouly, *Broadcom*

Co-Chair: Wooram Lee, *Penn State*

Mo4C-1: A 187–224-GHz 20-dB-Gain 4.5-dBm-Psat Power Amplifier with Dual-Band Matching Networks and Slotline Combining in 40-nm CMOS — 15:40

C.-X. Tsai, *National Taiwan Univ.*; C.-H. Li, *National Taiwan Univ.*

Mo4C-2: A Compact 125–150-GHz Power Amplifier in 90-nm SiGe 9HP+ BiCMOS with 34-dB Gain for Phased-Array Transmitters — 16:00

J.-H. Kim, *Chungnam National University*; J.-H. Song, *Chungnam National University*; M.-S. Baek, *Chungnam National University*; J.-S. Park, *Chungnam National University*; G.M. Rebeiz, *Univ. of California, San Diego*; C.-Y. Kim, *Chungnam National University*

Mo4C-3: A 286-GHz CMOS Amplifier Achieving 56-GHz BW3dB Via fmax-Boosting and Gain-Staggering — 16:20

D. Tang, *Southeast Univ.*; Y.-C. Xue, *Southeast Univ.*; P. Zhou, *Southeast Univ.*; Z. Chen, *Southeast Univ.*; J. Chen, *Southeast Univ.*; H. Gao, *Purple Mountain Laboratories*; W. Hong, *Southeast Univ.*

Mo4C-4: A D-Band Bidirectional Amplifier Utilizing Lossy U-Boosting Network — 16:40

S. Park, *Institute of Science Tokyo*; Y. Yamazaki, *Institute of Science Tokyo*; C. Liu, *Institute of Science Tokyo*; C. Wang, *Institute of Science Tokyo*; H. Sakai, *Institute of Science Tokyo*; K. Kunihiro, *Institute of Science Tokyo*; K. Okada, *Institute of Science Tokyo*

253ABC

Mo4D: Broadband and Bi-Directional Phase Shifters for RF and mm-Wave Arrays

Chair: Hao Gao, *Southeast University*

Co-Chair: Kwang-Jin Koh, *Boeing*

Mo4D-1: A Broadband 360° Distributed Vector-Summing Phase Shifter Achieving <1.99°/0.22-dB RMS Gain and Phase Error Over 8-to-110-GHz Bandwidth — 15:40

L. Liu, *Univ. of Texas at Austin*; Y. Fang, *Univ. of Texas at Austin*; Z. Fu, *Univ. of Texas at Austin*; H. Guo, *Rice Univ.*; T. Chi, *Rice Univ.*; S. Li, *Univ. of Texas at Austin*

Mo4D-2: A 91–125GHz 6-Bit RF Beamforming Receive Channel Using a Dual Current-Steering Phase Shifter with a Digitized Transistor Core and Tunable Gate Bias in 22-nm FD-SOI — 16:00

H. Ju, *Univ. of California, San Diego*; Y. Zou, *Univ. of California, San Diego*; G.M. Rebeiz, *Univ. of California, San Diego*

Mo4D-3: A 28-GHz Bi-Directional Reflection-Amplifier-Based Phase Shifter for Active Reconfigurable Intelligent Surface (RIS) — 16:20

P. Sawakewang, *Univ. College Dublin*; A. Worapishet, *Mahanakorn University of Technology*; T. Kijsanayotin, *Qorvo*; P. Guan, *Univ. College Dublin*; C. Khongprasongiri, *Univ. College Dublin*; R.B. Staszewski, *Univ. College Dublin*; T. Siriburanon, *Univ. College Dublin*

Mo4D-4: An 8–28GHz Bidirectional Variable-Gain Phase Shifter for 6G FR3/ 5G n258 FR2 Featuring a Magnitude-Equalized Self-Similar 90° Coupler and a Simultaneously Phase-Temperature Compensated Attenuator — 16:40

B.A. Abdelmagid, *ETH Zürich*; H. Wang, *ETH Zürich*

Mo4D-5: A 24–30GHz 7-Bit Passive Hybrid Phase Shifter with <1.1° RMS Phase Error and <0.61dB Amplitude Error — 17:00

Z. Zhang, *Southeast Univ.*; Q. Chen, *Southeast Univ.*; X. Jiang, *Southeast Univ.*; Y. Liang, *Southeast Univ.*; X. Yang, *Southeast Univ.*; R. Cao, *Southeast Univ.*; X. Fan, *Southeast Univ.*; L. Li, *Southeast Univ.*

IMS Showcase

15:10-17:00 | MONDAY, 8 JUNE 2026 | BALLROOM FOYER

Join us before the IMS Joint RFSA/RFTT Plenary Session for the IMS Showcase where the RFSA and RFTT Student and Industry paper finalists will present their work.

RFSA2026 INDUSTRY PAPER FINALISTS

We3D: Accurate Cryogenic S-Parameter Measurement Technique Using Room-Temperature SOLT Calibration and 2X-Thru De-Embedding
Yin-Cheng Chang, Yu-Shao Shiao, Wen-Lin Chen, Bo-Yuan Chen, Kun-Ming Chen, Guo-Wei Huang, Ta-Yeh Lin, Da-Chiang Chang, *NARLabs-TSRI;* Shawn S.H. Hsu, *National Tsing Hua Univ.*

IF2: Wideband FR3 MIMO Antenna Array for NextG Wireless Links
Merve Kacar, *Sivers Semiconductors;* Hong Tang, *UMass Lowell;* Aayush Pandey, Yi-shin Yeh, *Sivers Semiconductors;* S.M. Rakibul Hasan Shawon, *UMass Lowell;* Gurkan Gok, *RTX;* Hualiang Zhang, *UMass Lowell;* Arun Natarajan, Harish Krishnaswamy, *Sivers Semiconductors*

Tu1E: Diplexer-Free Dual-Band Backscatter with Tag-Side FDD via Impedance-Tuner State Synthesis
Jonathan Okocha, Nassim Laarossi, Matthias Rudolph, *Univesity of Cottbus, Germany*

Tu2D: DualSense: A Testbed for Dual-Band (ISM and 5G FR2) ISAC Leveraging Dual-Polarized Phased Arrays
Arun Paidimarri, Sara Garcia Sanchez, Asaf Tzadok, Alexandra Gallyas-Sanhueza, Michel Hack, Alberto Valdes-Garcia, *IBM*

We1B: A 241-271 GHz Sparse MIMO Radar With Antenna-Integrated Transmitter and Receiver Chips
Brian Woods, Yao Yu, Ariel Habshush, Amin Rashidian, *MaXentric Technologies, LLC;* Aditya V. Muppala, *Univ. of California, Berkeley;* Ehsan Afshari, *Univ. of Michigan;* Toshifumi Nakatani, *MaXentric Technologies, LLC*

Tu3E: A Compact Circularly Polarized Integrated Feeder System for Next-Generation Q/V-Band Satellite Links
Mahmoud Gadelrab, *Scientific Microwave;* Mohamed Mamdouh M. Ali, *Assiut University;* Mahmoud Elsaadany, *MacEwan University;* Shoukry I. Shams, *Concordia Univ.;* Gada Saad, *Scientific Microwave*

RFSA2026 STUDENT PAPER FINALISTS

Tu1D: Time-domain Terahertz Imaging with a Plasmonic Photoconductive Terahertz Source Array
Tianyi Gan, *University of California, Los Angeles*

Tu1F: A 200-to-257GHz Autodyne FMCW Phased-Array Radar with 2D Beam-Steering in 55nm BiCMOS
Hossein Naghavi, *University of Washington*

Tu1G: Real-Time, Over-the-Air Modulation Recognition using a 320MS/s Spiking Neural Network on FPGA
Sai Sanjeet, *SUNY Buffalo*

Tu2D: Millimeter-Wave Active STAR-RIS with Programmable Reflect and Transmit Operation and Channel Sensing for Secure ISAC
Wenkai Fang, Muhamed Allam, Zijian Shao, *Princeton University*

Tu3D: I2SAC: AI-enabled Digital-Twin Framework on a mmWave 64-element Phased Array for Integrated Imaging, Sensing, and Communication
Vikram R. Anapana, *North Carolina State University*

Tu3E: Dynamic Refocusing of a Flexible Phased Array via Shape Tracking
Alon Elgarat, *Ben-Gurion University*

We1D: Enabling Broadbeam Performance in Planar Backscatter Tags: A Semi-Passive Metalens-Enhanced mmID for Ambient IoT Environments
Marvin Joshi, *Georgia Tech*

We1B: Beyond Imaging: A 256 GHz Superheterodyne FMCW Radar System for 3-D Imaging and Micro-Doppler Based Sound Reconstruction
Ali Ghazizadeh Ghalati, *University of Michigan*

We1C: Assumption-Free Active Calibration of mm-Wave Phased Arrays using Excitation Estimation via Far-field Measurements
Ahmed Ben Ayed, *University of Waterloo*

We1A: High-Efficiency Inductive Powering and Auto-Localization of CMOS Brain Implants by a Wearable Metasurface and Coupled Matching
Mohammad Abdolrazzaghi, *University of Toronto*

We2C: Microwave Probe Based on an Inverted Microstrip Line for Broadband Electron Paramagnetic Resonance Spectroscopy
Selina Eckel, *Karlsruhe Institute of Technology*

RFTT2026 STUDENT PAPER COMPETITION FINALISTS

We3H: An 8-27 GHz PCM Switched Reflective-Type Phase Shifter in 180nm SiGe BiCMOS Process for X, Ku and K Band Beamforming Applications
Ahmed Hegazy, *University of Waterloo*

We1G: Toward 5G Wearables: An Additively Manufactured, Thermoelectric Powered mmID and Integrated Microfluidic pH Sensor
Theodore Callis, *Georgia Institute of Technology*

IF1: Double Balanced Parametric and Resistive Millimeter-Wave Mixers with more than 100 GHz RF-Bandwidth
Patrick Umbach, *Fraunhofer IAF*

Th1C: Integration of Passive D-Band Components Within the AFSIW Technological Platform for Future Systems on Substrate
Samir LAGOUG, *University of Bordeaux*

We3G: A 24 GHz Self-Biased Class-F3 Voltage-Controlled Oscillator for High-Speed Wireline Transceivers in 12 nm FinFET Technology
Alexander Berwald, *Friedrich-Alexander-Universität Erlangen-Nürnberg*

Th2D: GaN Non-volatile RF Switch Based on Bipolar Charge Trapping for Reconfigurable RF FEMs
Yichen Liu, *Hong Kong University of Science and Technology*

Tu3I: Rapid Full-Wave Training-Data Synthesis for Deep-Learning Surrogates
Vinay Chenna, *University of Southern California*

Th3C: Design of a Compact Scalable Gysel Power Combiner in Rectangular Coaxial Guide for High Power Applications
Manoj Kumar, *Indian Institute of Technology Roorkee*

Th2A: A 265–317-GHz Frequency Doubler with an Asymmetric Marchand Balun Achieving >40-dBc Fundamental Rejection in 65-nm CMOS
Wooyong Keum, *Korea University*

We2F: A Continuous-Mode Harmonic-Tuning Ku-Band GaN MMIC Doherty Power Amplifier with an 18.7 % Fractional Bandwidth
Po-Yu Lee, *National Tsing Hua University*

Th2B: High-Efficiency VHF Class-Φ2 Power Amplifier with a GaN Sinusoidal Resonant Gate Driver
Yixuan Huang, *Hong Kong Polytechnic University*

Tu4I: Redundancy-Guided Active Data Construction for Efficient ML-Assisted Microwave Design
Wei Jiang, *Nanjing University*

We3E: A Cryo-CMOS Fractional-N PLL in 22 nm FDSOI operating at 6 K for Trapped-Ion Quantum Computer Applications
Yazan Saad Aldine, *Technische Universität Braunschweig*

We1F: A 6.4-7.2 GHz Gain-Enhanced GaN MMIC Doherty Power Amplifier Based on Adaptive Power Divider for 6G Applications
Shun Wan, *Tsinghua University*

Th1A: A 0.48 W-mm2 High-Power-Density D-Band Power Amplifier in 250-nm InP HBT Process
Gunwoo Park, *Korea University*

We1H: A 2-Stage Cascaded Reflection-Type Group Delay Controller with Large Group Delay Range using Coupled-Line Transformer
Hwan-Jae Cho, *Yonsei University*

Th1B: A D-band Passive-Mixer-First Receiver Front-End For an IF-Beamforming Phased Array in 45nm RFSOI
Meijun Tian, *Pennsylvania State University*

Th3B: A Two-Tier Low-Complexity Linearization Architecture for Fully Digital mMIMO Transmitters
Jin Gyu Lim, *University of Waterloo*

RFTT2026 INDUSTRY PAPER COMPETITION FINALISTS

We3G-2: A 1–271-GHz Ultra-Broadband Amplifier Based on Synthesis of Multiple Amplifier Topologies
Teruo Jyo, Munehiko Nagatani, Yuta Shiratori, Miwa Mutoh, Hiroyuki Takahashi, *NTT, Inc.*

We1F-4: A 140 W Integrated GaN Doherty Power Amplifier Module Based on a Triple-tuned Design Method for 5G Massive-MIMO Base-Stations
Yifei Chen, Seungwon Park, Jooseok Lee, Seungjae Baek, Taewan Kim, Sehyug Jeon, Heedo Kang, Ansang Ryu, Sung-Gi Yang, *Samsung*

We3H-6: A DC-40GHz Grounded Coplanar Waveguide SP4T RF MEMS Switch in Hermetic Package
Xu Zhu, Nicholas Yost, *Menlo Microsystems*

We2E-2: Analysis of Multistable Superconducting Quantum Interference Devices (SQUIDs) in Keysight Advanced Design System"
Mohamed Ismail Abdelrahman, Joseph Macauley, Mohamed Awida Hassan, *Keysight Technologies*

Th3D-5: Blind-Scan Angle Estimation for Surface-Mounted Antenna Arrays Using a Quasi-Analytical Approach"
Omar Wadah, Islam A. Eshrah, *Analog Devices*

We1G-2: Demonstration of an F-Band Heterogeneously Integrated Multi-Chip Downconverter"
Caitlyn Cooke, Kevin Leong, Michael Eller, Maxwell Duffy, Nancy Lin, Xiaobing Mei, K.K. Loi, Alfonso Escorcia, Khanh Nguyen, Samuel Esparza, William Deal, *Northrop Grumman Corp.*

Th1C-1: High Density MIMCAPs in a 300mm Silicon Interposer using High-k Dielectric and 3D Oxide-studs for mm-Wave Applications"
Ilker Comart, Philip Nolmans, Shuo Kang, Rana ElKashlan, Alfredo Sanchez Ramos, Luc Pauwels, Nele Van Hoovels, Siddhartha Sinha, Xiao Sun, Andy Miller, Eric Beyne, Nadine Collaert, *IMEC*

Th2D-2: Low-Loss 25 GHz RF Switches in 300 mm GaN-on-Si Technology with 0.4 dB Insertion Loss and 70 fs Ron×Coff,
Seahee Hwangbo, Qiang Yu, Ibukun Momson, Said Rami, Heli Vora, Prafful Golani, Michael Beumer, Pratik Koirala, Ahmad Zubair, Samuel Bader, Marko Radosavljevic, Han Wui Then, *Intel*

Th2A-5: Metallized 3D Printed THz Hollow Waveguide Components
Alejandro Garcia-Tejero, Rico Weber, Seymen Yolcu, Dmitrij Ievlev, Dirk Götzl, Marco Buhmann, Francesco Merli, *HUBER+SUHNER*

We2F-3: Vector-Sum Phase Shifter Design for Analog Predistortion in an FR3 Band Power Amplifier Using GaAs HBT"
Shun Beppu, Daisuke Araki, Takashi Soga, Yuuma Noguchi, Kiichiro Takenaka, Masatoshi Hase, Satoshi Goto, Hisashi Yamazaki, *Murata Manufacturing*

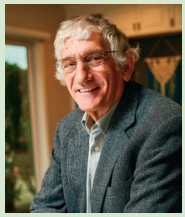
IMS Joint RFSA/RFTT Plenary Session and Fireside Chat

From Quantum Circuits to Quantum Computers: A Fireside Chat with Dr. John Martinis

Moderated by Dr. William Oliver

17:30-19:00 | MONDAY, 8 JUNE 2026 | BALLROOM

Abstract: Quantum computers are fundamentally different than conventional computers. They promise to address certain problems that are practically prohibitive and even impossible to solve using today's supercomputers. The challenge is building one that is large enough to be useful. In this Fireside Chat, we will talk with one of the pioneers in the field, Dr. John Martinis, 2025 Nobel Prize awardee in Physics, CTO and co-founder of Qolab. We will talk through John's perspectives on the past, present, and future of quantum circuitry, the promise, the hype, and the challenges ahead associated with realizing useful quantum computers at scale.



Dr. John Martinis

Dr. William Oliver

Bio: John Martinis is a distinguished physicist and 2025 Nobel Laureate in Physics, renowned for his pioneering contributions to superconducting quantum computing. His research has been central to developing high-fidelity qubits and engineering the architectures needed for scalable quantum processors. He previously led Google's quantum hardware team, where his group achieved the landmark 2019 quantum supremacy experiment — the first demonstration of a quantum computer outperforming the world's most powerful classical supercomputer on a computational task. In 2022, he co-founded Qolab, where he now serves as CTO and continues to advance next-generation superconducting qubit technology and quantum system design.

Bio: William D. Oliver is jointly appointed the Henry Ellis Warren (1894) Professor of Electrical Engineering and Computer Science and Professor of Physics at the Massachusetts Institute of Technology. He serves as the Director of the Center for Quantum Engineering, Associate Director of the Research Laboratory of Electronics, and Principal Investigator with the Engineering Quantum Systems Group at MIT campus. Will's research interests include the materials growth, fabrication, design, and measurement of superconducting qubits, as well as the development of cryogenic packaging and control electronics.

From 2003-2023, Will also worked at MIT Lincoln Laboratory – most recently as Laboratory Fellow (2017-2023) – where he was instrumental in growing the quantum computing group to its present levels. Will stepped down from this position to co-found Atlantic Quantum, a quantum computing startup. Atlantic Quantum was acquired by Google in October 2025.

Will is a Fellow of the American Association for the Advancement of Science, a Fellow of the American Physical Society, and a Fellow of the IEEE. He serves on the National Quantum Initiative Advisory Committee, the US Committee for Superconducting Electronics, and as an IEEE Applied Superconductivity Conference (ASC) Lead Editor.

Will received his Ph.D. in Electrical Engineering from Stanford University, his M.S. in Electrical Engineering and Computer Science from MIT, and a B.S. in Electrical Engineering and B.A. in Japanese from the University of Rochester (NY).

IMS Welcome Reception

20:00 – 21:30 | MONDAY, 8 JUNE 2026 | VIEW BOSTON, PRUDENTIAL CENTER

IMS2026 starts with a welcome event on Monday for all attendees, which will be hosted at the View Boston atop the Prudential Center following the IMS2026 Joint RFSA/RFTT Plenary Session and Fireside Chat.

INDUSTRY WORKSHOPS | 08:00 – 17:20 | TUESDAY, 9 JUNE 2026

SESSION CODE	TIME & LOCATION	TITLE AND ABSTRACT	SPEAKER(S), AFFILIATION
IWTu1	08:00 – 09:40 Room: 152	**Thermal Management Simulation and Design for RF 3D Heterogeneous Integration —** 3D Heterogeneous Integration promises huge improvements to size, weight, power, and cost (SWAP-C) while maintaining or improving performance through choice of best-in-class electronics, components, and packaging. But with this increased system density comes additional physical challenges such as thermal management. Advanced electronics design and advanced packaging design need to consider the thermal generation and thermal management processes together to realize the true benefits of 3DHI. Join 3D Glass Solutions and Keysight for an investigation into the design of an advanced electronic system using thermal-aware electronic design processes to explore this complex interaction and determine the best thermal management solution	Edward Horne, *3DGS*; Ian Rippke, *Keysight*
IWTu2	08:00 – 09:40 Room: 154	**Revolutionize your phased array testing: fast antenna pattern measurements, analysis, and AI-based 3D pattern reconstruction —** High-gain modern phased array radiation pattern measurements require narrow angular resolution to ensure accurate results and reliable null measurements. Fast and precise analysis is essential for uniform beam steering with minimal scan loss and side-lobe levels. You need to measure multiple beam and null steering settings, tapering modes and polarizations in SATCOM or NTN. We will demonstrate how to optimize radiation pattern measurements and analysis, regardless of your equipment. AI will be used for 3D pattern reconstruction. Our goal is to provide a game-changing approach to measurement and analysis, enhancing your testing workflow and quality of results.	Fabricio Dourado, *Rohde & Schwarz*; Giorgia Zucchelli, *MathWorks B.V.*; Sudarshan Sivaramakrishnan, *MathWorks B.V.*
IWTu3	10:10 – 11:50 Room: 152	**AI-assisted modeling of RF components for digital twins of wireless systems —** This workshop explores AI-assisted modeling techniques for RF components, enabling the creation of accurate digital twins and supporting a seamless digital thread across wireless system design. We cover advanced methods for characterizing beamformers, front-ends, and other RF devices through measurement and simulation, highlighting how AI differs from traditional IQ and VNA waveform-based modeling. System-level workflows are presented, integrating AI-driven behavioral models to predict performance across diverse conditions. Attendees will learn to validate digital twins with measurements, enhance simulation fidelity, and streamline design cycles, while assessing the advantages and limitations of AI versus conventional approaches.	Markus Loerner, *Rohde & Schwarz*; Salvatore Finocchiaro, *Qorvo*; Florian Ramian, *Rohde & Schwarz*; Wissam Saabe, *Dassault Systems*; Giorgia Zucchelli, *MathWorks*
IWTu4	10:10 – 11:50 Room: 154	**Heterogeneous Integration of III-V Technologies with Si ones to address 6G RF Challenges —** By 2025, the global mobile cellular subscriber count is forecasted to surpass 6 billion, with 5G paving the way for high-data capacity and low-latency through sub-6GHz and mm-Wave spectrum. 6G networks will hinge on 7-15GHz FR3 bands, a pivotal shift in mobile connectivity. The global rise of smartphones owes much to CMOS technology advancements to smaller nodes, computational power, and digital calibrations. This workshop explores current 5G RF-FEM designs at the heart of this transformation, addressing implementation challenges and discussing 6G FR3 ones. The semiconductor roadmap envisioned for 6G FR3 will be discussed, focusing on the integration of III-V-Si technologies.	Pascal Chevalier, *ST*; Frederic Gianesello, *ST*; Florinel Balteanu, *Skyworks Inc.*; Luis Andia, *Soitec*;
IWTu5	13:30 – 15:10 Room: 152	**Explore the Flexibility in Apollo MxFE™ to Maximize the Spectrum Equalization Performance —** Join us this workshop to learn creative methods to maximize the spectrum equalization performance for Apollo MxFE™ by exploring the flexibility in its DSP architecture. The methods include a two-stage filtering using both PFILT and CFIR and leveraging CFIR sparse mode to expand effective taps from 16 to a maximum of 128. Simulation results along with a live demo of ADXBAND16EBZ - a Quad Apollo system development board will demonstrate the significant improvements in equalization performance, highlighting how Apollo's flexible DSP architecture enables higher system-level capability across EW, Radar, ISR, and Instrumentation applications.	Mizhou Tan, *Analog Devices*; Robert Dandaraw, *Analog Devices*; Sid Das, *Analog Devices*; Peter Delos, *Analog Devices*
IWTu6	13:30 – 15:10 Room: 154	**Reconfigurable Wideband Phased Arrays for mmWave: System Design and Verification Across Radar and Wireless Domains —** The evolution of wireless systems toward higher frequencies, together with the integration of joint RF sensing and communications, drives unprecedented demands on phased array performance. Next-generation architectures must deliver exceptional transmitter linearity and receiver sensitivity across multi-gigahertz bandwidths and large antenna arrays. We explore advanced measurement and behavioral modeling techniques, linking hardware prototypes with digital twins to accelerate the exploration of architectures and the development of wideband adaptive analog and digital algorithms, emphasizing the balance between modeling accuracy and computational efficiency. Demonstrations highlight design trade-offs and performance optimization strategies relevant to both 5G-6G communication links and AESA radar systems.	Giorgia Zucchelli, *MathWorks*; Jordan Besnoff, *Analog Devices*; Caterina Rapisarda, *Leonardo*; Francesco Peluso, *Leonardo*
IWTu7	15:40 – 17:20 Room: 152	**Designing a High-Fidelity Signal Chain from DC to 55 GHz: Architectures, Components, and Integration Strategies —** This workshop explores the design of a high-performance signal chain spanning DC to 55 GHz. Attendees will examine key topics such as Digitization, Wideband up-down conversion, Tunable filtering, and Amplification. Key components will be highlighted showing unique features and process tradeoffs. Topics include architecture tradeoffs, frequency planning, high-speed data conversion, and system-level optimization for dynamic range and latency. Practical insights into design approach, calibration, and signal integrity will be shared. Ideal for RF and DSP engineers, this session equips participants with the knowledge to architect scalable signal chains for radar, 5G-6G, satellite, and instrumentation applications.	Brad Hall, *Analog Devices Inc.*; Jon Hall, *Analog Devices, Inc*; Selim Abdelrahman, *Analog Devices, Inc.*; Ekrem Oran, *Analog Devices, Inc.*; Alp Oguz, *Analog Devices, Inc.*
IWTu8	15:40 – 17:20 Room: 154	**Create Digital Twins of Phased Arrays from OTA Hardware Measurements and Scale Up for System-Level Simulation —** Model-based simulation enables early validation of design concepts, but accurately representing real-world imperfections can be challenging. This workshop will demonstrate how to create digital twins from hardware over-the-air measurements. Attendees will see live data gathering, model validation, and scaling to larger arrays, comparing digital twins with real hardware. Participants will learn to identify root causes of performance issues, using highly integrated mmWave beamformers with frequency conversion capable of circular polarization in compact antenna test range systems.	Fabricio Dourado, *Rohde & Schwarz*; Giorgia Zucchelli, *MathWorks B.V.*

STUDENT DESIGN COMPETITIONS | 10:00 – 17:00 | Tuesday, 9 June 2026 | BOOTH 100060 IMS EXHIBIT FLOOR

All attendees are invited to the annual IMS Student Design Competitions on Tuesday, 9 June 2026. Students have been busy over the past several months designing and building solutions to the challenging engineering problems presented in the nine student design competitions listed below. Judges will measure the students' designs at this event to determine the winners of the various competitions. Come to this event to cheer on the students, celebrate their hard work, and learn about their innovative designs!

FULL-DAY SESSION | 10:00 – 17:00	
SDC4	Allen Katz High Efficiency Power Amplifiers (HEPA)
SDC5	High-Efficiency Power Amplifier for 220 MHz
MORNING SESSION | 10:00 – 13:00	
SDC1	Hands-on 5G Filter Design from CAE to Measurement in the Sub 6 Band
SDC2	RF Bias Tee Design for Active Baseband Load-pull Applications
SDC6	Multiband Digital Predistortion for Power Amplifiers with Coupled Interference
SDC8	High-Sensitivity Biomedical Radar for Multi-Person Vital Sign Sensing
AFTERNOON SESSION | 14:00 – 17:00	
SDC3	SDC3 - Tunable Impedance Matching Network
SDC7	Low Cost Reflectometer

VISIT THE SOCIETIES PAVILION

Learn how you can take advantage of all the great things the IEEE Microwave Theory and Technology Society (MTT-S) has to offer and meet other IEEE societies, organizations and partners.

Booth 16002

MTT-S IEEE MICROWAVE THEORY & TECHNOLOGY SOCIETY

IEEE microwave MAGAZINE

SAN ANTONIO 2027 ims

AESS

IEEE AP-S Antennas and Propagation Society

EMC SOCIETY

EurAAP

IEEE GRSS Geoscience and Remote Sensing Society

IEEE Boston Section

IMPI International Microwave Power Institute

IEEE SSCS Solid-State Circuits Society IC Innovation

Get your complimentary professional headshot taken in the Societies Pavilion

Tuesday, 9 June 2026:
09:30 – 12:30 & 13:30 – 17:00

Wednesday, 10 June 2026:
09:30 – 13:00 & 14:00 – 18:00

Thursday, 11 June 2026
09:30 – 12:30 & 13:00 – 14:30

252AB

Tu1A: mm-Wave FMCW Radars and UWB Transceivers

Chair: Giuseppe Gramegna, *IMEC*
Co-Chair: Vito Giannini, *OLIX Computing*

08:00

Tu1A-1: A 76–81GHz FMCW MIMO Coded Transceiver for Automotive Radar

B. Sheinman, T. Heller, J. Vovnoboy, D. Corcos, Y. Schwartz, M. Grubman, D. Malowany, Y. Horesh, F. Bohn, N. Bochmann, M.H. Eissa, I. Haydaroglu, S. Malz, C. Menkus, R. Kim, A. Nagabhushana, I. Aoki, S. Kee, J. Zachan, O. Katz, *indie*

08:20

Tu1A-2: A Built-In Self-Test System for 60GHz MIMO FMCW Radar SoCs

W. Zhou, *Samsung*; G. Feygin, *Samsung*; P. Dayal, *Samsung*; H.-S. Chen, *Samsung*; S. Srinivasa, *Samsung*; R.K. Gutta, *Samsung*; P.D. Solanki, *Samsung*; G. Rogers, *Samsung*; O.E. Eliezer, *Samsung*; M. Li, *Samsung*; S.K. Rayudu, *Samsung*; T. Yu, *Samsung*; J. Suh, *Samsung*; J. Hur, *Samsung*

08:40

Tu1A-3: A 28-nm FD-SOI 77-GHz Automotive FMCW Radar with Antenna Launcher in Package

F. Ahmed, M. Furqan, F. Piri, I. Petricli, M.M. Pirbazari, F. Vecchi, C. Debnath, A. Manzoni, A. Michelin Salomon, *STMicroelectronics*

09:00

Tu1A-4: An Area-Efficient NBA-MMS UWB Receiver with Capacitance Boosting and PVT-Robust RSSI for IEEE 802.15.4ab

S. Kang, *Samsung*; J. Kim, *Samsung*; S. Kim, *Samsung*; W. Jung, *Samsung*; J. Myeong, *Samsung*; D. Seo, *Samsung*; H.-G. Seok, *Samsung*; H.-C. Park, *Samsung*; C.-H. Park, *Samsung*; J. Kim, *Samsung*

09:20

Tu1A-5: An 802.15.4ab Narrowband Assistance RX Resilient to -32dBm Blocker at 3.2dB NF with High Dynamic Range TIA and Clip Detector

A.N. Bhat, *IMEC*; A. Boora, *IMEC*; K. Ding, *IMEC*; J. van den Heuvel, *IMEC*; M. Eskiyerli, *IMEC*; E. Allebes, *IMEC*; P. Zhang, *IMEC*; M. Konijnenburg, *IMEC*; Y.-H. Liu, *IMEC*; P. Vis, *IMEC*; C. Bachmann, *IMEC*

09:40

254AB

Tu1B: Frequency Multipliers from D-Band to Sub-THz

Chair: Minoru Fujishima, *Hiroshima University*
Co-Chair: Wei Deng, *Tsinghua University*

Tu1B-1: A Calibration-Free 55-to-70dBc H1 Rejection, 13.8% Efficiency, 102-to-120GHz CMOS Frequency Tripler Using Phase-Alignment Technique for Harmonic Recombination

S. Koop-Brinkmann, *Technische Univ. Braunschweig*; V. Lasserre, *Technische Univ. Braunschweig*; V. Issakov, *Technische Univ. Braunschweig*

Tu1B-2: A 110–142-GHz Frequency Quadrupler with 13.1-dBm Psat Achieved by Coupled-Line-Based Output Matching Technique in 130-nm SiGe

Z. Wang, *CityUHK*; H. Luo, *NUS*; Q. Dong, *NUS*; Z. Shu, *Xidian Univ.*; J. Chen, *Southeast Univ.*; K.T.C. Chai, *A*STAR*; Y. Guo, *CityUHK*

Tu1B-3: A 108–170-GHz ×6 Amplifier-Multiplier Chain with 16-dBm Output Power and >29.5-dBc Harmonics Rejection in 130-nm SiGe Process

C. Shu, *Southeast Univ.*; L. Kong, *Southeast Univ.*; P. Zhou, *Southeast Univ.*; D. Tang, *Southeast Univ.*; Z. Li, *Sanechips Technology*; L. Lu, *Southeast Univ.*; J. Chen, *Southeast Univ.*; W. Hong, *Southeast Univ.*

Tu1B-4: A Broadband 241–306GHz Frequency Multiply-by-24 Based Coherent Radiator Delivering +26.5dBm EIRP in 90-nm SiGe BiCMOS

J.S. Virdi, *Univ. of California, Los Angeles*; W. Sun, *Univ. of California, Los Angeles*; A. Babakhani, *Univ. of California, Los Angeles*

257AB

Tu1C: Scalable, Calibrated mm-Wave and Wideband Tx/Rx Front-Ends for Radar, 5G, and SATCOM

Chair: Emanuel Cohen, *Technion*
Co-Chair: Khaled Khalaf, *Pharrics*

Tu1C-1: A 2–18GHz Integrated 4-Channel Transmit/Receive Beamformer in 65-nm CMOS

J. Gong, *Tsinghua Univ.*; Y. Yang, *Tsinghua Univ.*; K. Gao, *Tsinghua Univ.*; Z. Wang, *Tsinghua Univ.*; X. Li, *Tsinghua Univ.*; Z. Zhou, *Tsinghua Univ.*; J. Wang, *Tsinghua Univ.*; H. Wu, *Tsinghua Univ.*; W. Chen, *Tsinghua Univ.*

Tu1C-2: A K-Band 4-Beam Phased Array Transmitter in Only 5-Layer PCB Enabled by Silicon-Assisted Beam-Combining Network for SATCOM

R. Jiang, *Tsinghua Univ.*; H. Jia, *Tsinghua Univ.*; H. Ge, *Tsinghua Univ.*; J. Zhao, *Tsinghua Univ.*; W. Deng, *Tsinghua Univ.*; B. Chi, *Tsinghua Univ.*

Tu1C-3: Scalable and Compact Fully-Connected Network Based on Gm-Cell Grid for 28-GHz Multi-Stream MIMO Receiver

S. Lee, *POSTECH*; S. Cho, *POSTECH*; S.-U. Choi, *POSTECH*; S. Kim, *Samsung*; I. Choi, *POSTECH*; J. Kang, *POSTECH*; Y. Du, *POSTECH*; H.-J. Song, *POSTECH*

Tu1C-4: A 256-Element 28GHz 5G NR Wirelessly-Powered Active Relay Transceiver with TDD Synchronization Free Bidirectional Amplifiers

S. Date, A. Hirayama, S. Kato, K. Yuasa, M. Ide, M. Kikuchi, T. Tomura, J. Mayeda, A. Shirane, *Science Tokyo*

Tu1C-5: A W-Band FMCW Radar Transceiver with Self-Calibrated Type-III ADPLL Achieving 1.27-cm Range Resolution for Imaging Applications

L. Hao, *Peking Univ.*; H. Bai, *Peking Univ.*; Z. Shen, *Peking Univ.*; N. Zhang, *Peking Univ.*; J. Zhou, *Peking Univ.*; C. Wu, *Peking Univ.*; Z. Wang, *Peking Univ.*; J. Liu, *Peking Univ.*; H. Liao, *Peking Univ.*

255

Tu1J: High-Speed Optical Transceivers

Chair: Sajjad Moazeni, *University of Washington*
Co-Chair: Sushil Subramanian, *Intel Corporation*

Tu1J-1: A 460Gb/s PAM-4 Linear Distributed Driver with 105GHz BW for TFLN Modulators in 130nm SiGe BiCMOS

L. da Silva, *Ghent Univ.*; C. Bruynsteen, *Ghent Univ.*; J. Declercq, *Ghent Univ.*; A. Ostrovskis, *Keysight Technologies*; F. Pittala, *Keysight Technologies*; G. Torfs, *Ghent Univ.*; N. Singh, *Ghent Univ.*; X. Yin, *Ghent Univ.*

Tu1J-2: A 200-Gb/s Low-Noise TIA in 28-nm CMOS

F. Zhang, J. Yang, Y. Xia, Z. Zhang, R. Yang, L. Zhao, W. Zhang, C. Li, Z. Zhang, *Xi'an Jiaotong University*; S. Bao, *CAS*; B. Wang, *CAS*; L. Geng, D. Li, *Xi'an Jiaotong University*

Tu1J-3: A 4×212Gbps 3.34pJ/bit Electronic-Photonic Co-Designed Transmitter Chipset in 0.18-µm SiGe BiCMOS and 90nm Silicon Photonics

Z. Dang, *HUST*; Z. Deng, *NOEIC*; Y. Liu, *NOEIC*; Q. Wang, *NOEIC*; Z. Wang, *NOEIC*; Z. Xieg, *NOEIC*; R. Jiang, *Tsinghua Univ.*; H. Jia, *Tsinghua Univ.*; M. Tan, *HUST*; X. Xiao, *NOEIC*

Tu1J-4: A 55-GHz Bandwidth PAM-4 InP DHBT Photoreceiver Based on PD-TIA Co-Design for >112-GBd Optical Transceivers

A. Chauvet, *III-V Lab*; R. Hersent, *III-V Lab*; F. Blache, *III-V Lab*; F. Jorge, *III-V Lab*; M. Da-Rocha-Amaro, *III-V Lab*; K. Mekhazni, *III-V Lab*; H. Gariah, *III-V Lab*; N. Davy, *III-V Lab*; C. Mismer, *III-V Lab*; V. Nodjiadjim, *III-V Lab*; M. Goix, *III-V Lab*; A. Konczykowska, *III-V Lab*; B. Ardouin, *III-V Lab*; C. Caillaud, *III-V Lab*; A.-E. Kasbari, *ENSEA-LÉA*; A. Ouslimani, *ENSEA-LÉA*

253ABC

Tu1D: THz Imaging and Communications Technologies

Chair: Kamran Entesari, *Texas A&M University*

Co-Chair: Mona Jarrahi, *University of California, Los Angeles*

Tu1D-1: KEYNOTE: Beyond Boundaries: Weaving Photonics and Electronics in the Terahertz Age

T. Nagatsuma, *Univ. of Tokyo*

Tu1D-2: Time-Domain Terahertz Imaging with a Plasmonic Photoconductive Terahertz Source Array

T. Gan, *Univ. of California, Los Angeles*; X. Li, *Univ. of California, Los Angeles*; F. Shen, *Univ. of California, Los Angeles*; J.-P. Guillet, *IMS (UMR 5218)*; M. Jarrahi, *Univ. of California, Los Angeles*

Tu1D-3: Chemical Mapping and Concealed Explosive Imaging Using Terahertz Time-Domain Spectroscopy and Deep Learning

X. Jiang, *Univ. of California, Los Angeles*; Y. Li, *Univ. of California, Los Angeles*; Y. Li, *Univ. of California, Los Angeles*; C.-Y. Shen, *Univ. of California, Los Angeles*; A. Ozcan, *Univ. of California, Los Angeles*; M. Jarrahi, *Univ. of California, Los Angeles*

Tu1D-4: Development of a 230-Micron Array of Dual-Polarization Kinetic Inductance Detectors

E. Villa, B. Aja, *Universidad de Cantabria*; V. Rollano, *CSIC-INTA*; L. de la Fuente, *Universidad de Cantabria*; A. Pascual, D. Rodriguez, M.T. Magaz, *CSIC-INTA*; J.P. Pascual, E. Artal, *Universidad de Cantabria*; D. Granados, *IMDEA Nanociencia*; A. Gomez, *CSIC-INTA*

Tu1D-5: A 60-Gbps Polymer Microwave Fiber Communication Link at Y-Band

F. Strömbeck, *Chalmers Univ. of Technology*; Y. Yan, *Chalmers Univ. of Technology*; H. Zirath, *Chalmers Univ. of Technology*; S. Lagoug, *IMS (UMR 5218)*; J.L. González Jiménez, *CEA-LETI*; L. Petit, *Radiall*; A. Ghiotto, *IMS (UMR 5218)*; E. Kerhervé, *IMS (UMR 5218)*; M. Wojnowski, *Infineon Technologies*

259AB

Tu1E: Energy-Efficient Backscatter Communication Systems

Chair: Thomas Ussmueller, *B&E antec*

Co-Chair: Kazuya Yamamoto, *Mitsubishi Electric*

Tu1E-1: KEYNOTE: Towards Practical SWIPT: Energy-Aware Wireless Systems for Future IoT and Space Applications

N.B. Carvalho, *Universidade de Aveiro*

Tu1E-2: A Novel Dual Function Receiver-Backscatterer at mm-Wave Using an ADC Front End

P. Manchanda, *BTU Cottbus-Senftenberg*; P. Tschammer, *FBH*; C. Andrei, *BTU Cottbus-Senftenberg*; U.L. Rohde, *BTU Cottbus-Senftenberg*; M. Rudolph, *BTU Cottbus-Senftenberg*

Tu1E-3: Diplexer-Free Dual-Band Backscatter with Tag-Side FDD via Impedance-Tuner State Synthesis

J. Okocha, *BTU*; N. Laarossi, *BTU*; M. Rudolph, *BTU*

Tu1E-4: All-Digital CSS Ambient Backscatter with 17.6µW Power Consumption and a MISO Receiver

S. Majumder, *Heriot-Watt Univ.*; C. Lohr, *Bellevue*; J. Birk, *Heriot-Watt Univ.*; M.M. Tentzeris, *Georgia Tech*; G. Goussetis, *Heriot-Watt Univ.*; S.D. Asimonis, *Univ. of Patras*; S.N. Daskalakis, *Heriot-Watt Univ.*

Tu1E-5: An NLTL-Based Harmonic Backscatter System for 6-DoF Sensing

X. Zheng, *Zhejiang Univ.*; Y. Yang, *Zhejiang Univ.*; J. Xu, *Zhejiang Univ.*; S. Chen, *Zhejiang Univ.*; Y. Lv, *Zhejiang Univ.*; Y. Zhou, *Zhejiang Univ.*; S. Zheng, *Zhejiang Univ.*; X. Hui, *Zhejiang Univ.*; X. Zhang, *Zhejiang Univ.*

156AB

Tu1F: RF and Digital Beamforming for Next-Gen Sensing and Communications

Chair: Mahdi Javid, *Qorvo*

Co-Chair: Julio Navarro, *Boeing*

Tu1F-1: A 200-to-257GHz Autodyne FMCW Phased-Array Radar with 2D Beam-Steering in 55nm BiCMOS

H. Naghavi, *Univ. of Washington*; A. Tabatabavakili, M. Tavakoli Taba, *Univ. of Michigan*; X. Zhao, Z. Zhang, *Univ. of Washington*; A. Ghazizadeh Ghalati, S.M. Banihashemi, *Univ. of Michigan*; M. Aseeri, *KACST*; A. Cathelin, *STMicroelectronics*; E. Afshari, *Univ. of Michigan*

Tu1F-2: A Scalable Dual-Band Dual-Beam Phased Array Leveraging Interleaved Sparse Subarrays for 6G FR3 Communications

J. Drewniak, *Univ. of California, San Diego*; T. Liang, *Univ. of California, San Diego*; G.M. Rebeiz, *Univ. of California, San Diego*

Tu1F-3: Spatial Over-the-Air Post-Distortion Cancellation with an Embedded Distortion-Correcting Transmitter Antenna for Linearizing Phased-Array Transmitters

A. Ben Ayed, *Univ. of Waterloo*; E. Gu, *Univ. of Waterloo*; H. Jin, *Univ. of Waterloo*; P. Mitran, *Univ. of Waterloo*; S. Boumaiza, *Univ. of Waterloo*

Tu1F-4: V-Band Direct-RF DBF Receiver with RF-Input-Free Sampling-Timing Calibration Method

Y. Tsukui, *Mitsubishi Electric*; Y. Morino, *Mitsubishi Electric*; K. Mori, *Mitsubishi Electric*; T. Furuichi, *Tohoku Univ.*; N. Suematsu, *Tohoku Univ.*; A. Hirai, *Mitsubishi Electric*; K. Yamanaka, *Mitsubishi Electric*

Tu1F-5: A 30-GHz Bandwidth Low-Power W-Band 4-TX and 4-RX Chipset for High-Resolution Radars in 65nm CMOS

J. Xu, *UESTC*; Z. Jiang, *UESTC*; R. Liao, *UESTC*; H. Liu, *UESTC*; K. Kang, *UESTC*; J. Zhang, *UESTC*

157AB

Tu1G: AI for Advanced Radar and Modulation Sensing

Chair: Akim Babenko, *Google*

Co-Chair: Chris M. Thomas, *Boeing*

Tu1G-1: Real-Time, Over-the-Air Modulation Recognition Using a 320MS/s Spiking Neural Network on FPGA

S. Sanjeet, *SUNY Buffalo*; B.D. Sahoo, *SUNY Buffalo*

Tu1G-2: Sparsity-Based Range-Velocity-Time PointMLP for FMCW Radar Human Activity Classification with Efficient Computation

Y.-H. Wu, *National Cheng Kung Univ.*; C.-L. Yang, *National Cheng Kung Univ.*

Tu1G-3: Parallel Kalman Filtering with Physics-Informed Selective State-Space Models for Robust Radar Sensing

J. Park, *Georgia Tech*; A.P. Padhy, *Georgia Tech*; H. Cho, *Georgia Tech*; S. Mukhopadhyay, *Georgia Tech*

Tu1G-4: Learning to Track: Deep Association for Multipath-Resilient In-Air Writing with D-Band FMCW Radar

S. Abouzaid, *Ruhr-Universität Bochum*; L. Nothelle, *Ruhr-Universität Bochum*; N. Pohl, *Ruhr-Universität Bochum*

Tu1G-5: Millimeter-Wave 3D Radar and IR Multimodal Sensing System Enabling AI-Based Event Recognition with Enhanced Privacy

A. Tzadok, *IBM*; S. Lukashov, *IBM*; A. Valdes-Garcia, *IBM*

New! Late Breaking News: RFTT2026

08:20 – 09:40

151AB

Tu1H: RFTT Late Breaking News

Chair: Steven Bowers, *University of Virginia*

Co-Chair: Joe Bardin, *Google*

Tu1H-1: An Ultra-Compact Inductorless Noise-Canceling LNA with Gain-Boosting and Current Reuse in 16nm FinFET

Shuyu Chen, *Univ. of California, Los Angeles*; Boxun Yan, *Univ. of California, Los Angeles*; Runzhou Chen, *Univ. of California, Los Angeles*; Chao-Jen Tien, *Univ. of California, Los Angeles*; Mau-Chung Frank Chang, Univ. of California, Los Angeles

Tu1H-2: Single-, Dual- and Octa-Core Millimeter-Wave VCOs with -190 dBc/Hz FOM_T in 22 nm FDSOI CMOS

Matthias Moeck, *Karlsruhe Institute of Technology*; Cagri Ulusoy, Karlsruhe Institute of Technology

Tu1H-3: Wide-Band Microwave Components for a Tokamak Edge Scanning Reflectometer

Elizabeth Kowalski, Valentina Nikolaeva, *Commonwealth Fusion Systems*; Yijun Lin, Seung-Gyou Baek, Daniel Hachmeister, *Massachusetts Institute of Technology*; Rafael Zubieta Lupo, Kyle Rohan, Ted Howell, Matthew Silva Sa, Matthew Reinke, *Commonwealth Fusion Systems*

Tu1H-4: 189-GHz-Bandwidth InP-HBT Baseband Amplifier Module With 0.5-mm Coaxial Connectors

Ko Hasegawa, *NTT Device Technology Laboratories*; Hitoshi Wakita, *NTT Device Technology Laboratories*; Teruo Jyo, *NTT Device Technology Laboratories*; Munehiko Nagatani, *NTT Device Technology Laboratories*; Hiroyuki Takahashi, NTT Device Technology Laboratories

08:00
08:10
08:20
08:30
08:40
08:50
09:00
09:10
09:20
09:30
09:40

TUESDAY

MICROAPPS | 09:45 – 16:49 | TUESDAY, 9 JUNE 2026 | MICROAPPS THEATER, BOOTH 15122

SESSION CODE	TIME	TITLE	SPEAKER(S), AFFILIATION
TUMA2	10:02 – 10:17	Shift Left your Signal Integrity — Automated SI-Driven PCB Optimization with GenAI	Carl Allendorph, *Jitx*
TUMA3	10:19 – 10:34	New Load Pull Analysis for RFIC Design	Arthur Schaldenbrand, *Cadence Design Systems*;
TUMA4	10:36 – 10:51	Machine Learning Driven, Electromagnetically Aware, RFIC Layout and Design Co-Optimization	Garth Sundberg, *Synopys, Inc.*
TUMA5	10:53 – 11:08	Co-design of Acoustic Filter and Silicon IC for Improved System Level Performance	Bryce Hotalen, *Cadence*
TUMS6	11:10 – 11:55	Startup Panel Session: Startups and Digital Twins — Accelerating Design, Development, and Deployment	Dan Mantoni, *Analog Devices;* Xu Zhu, *Menlo Micro*; Tingjun Chen, *Nortel Networks & Duke University*
TUMA7	12:00 – 12:15	5G Filters for Semiconductor Device Test Bench	Edward Liang, *MCV Microwave East, Inc.*
TUMA8	12:17 – 12:33	How to Design a Custom integrated High Q - Millimeter Wave, Single Layer Capacitor Using Thin Film Technology.	Larry Hawkins, *Vishay*
TUMA9	12:35 – 12:50	Low Noise Amplifiers for Cryogenic Applications	Steven Mazza, *Narda-Miteq*
TUMA10	12:52 – 13:07	SWaP-C Drone Challenges? Printed RF Filters may be Your Solution	Bob Buxton, *Smiths Interconnect*
TUMA11	13:09 – 13:24	Using PA Biasing Controllers to Reduce Bias Circuit Complexity	Erin Bowrie, *Texas Instruments*; Paul Frost, *Texas Instruments*
TUMA12	13:26 – 13:41	AI-Assisted Workflows for Passive Component Design	Diamond Liu, *Canadian*
TUMA13	13:43 – 13:58	5G Radio Power Saving Techniques with TI RF Transceivers: RF Planning, System-Level Techniques, and Device Features	Kang Hung Hsia, *Texas Instruments*; Ben Uhing, *Texas InstrumentsSerkan Tokgoz, Texas Instruments*; Dhruvil Solanki; Texas Instruments; Neeraj Sharma, *Texas Instruments*
TUMA14	14:00 – 14:15	A Practical Simulation Approach for RF Desense Mitigation of Consumer Electronics	Jason Bommer, *Synopsys*; Nick Hirth, *Synopsys*
TUMA15	14:17 – 14:32	Advanced Stability in RF Design	Tawna Wilsey, *Cadence Design Systems*
TUMA16	14:34 – 14:49	About Sampling Rates, Master Clock Rates, and Nyquist Zones on the USRP X440	Neel Pandeya, *National Instruments*
TUMA17	14:51 – 15:06	Co-Site Interference – The Efficient Simulations in WIPL-D Software	Branislav Ninkovic, *WIPL-D*
TUMA18	15:08 – 15:23	Impact of Reference Clock Slew Rateon RF Synthesizer Phase Noise and Improvement Techniques	Narala Raghavendra Reddy, *Texas Instruments India Pvt. Ltd.*;
TUMA19	15:25 – 15:40	Optimization of Heat Pipe Configuration in an Air-Cooled Aluminum Heat Sink for a Radio Frequency Amplifier	David Dawson, *ITS Cooling*
TUMA20	15:42 – 15:57	Advances In Thermal Analysis to Address the Growing Thermal Challenges of 3D Heterogeneous Integration	Mo Shakouri, *Microsanj LLC*; Doug Gray, *Microsanj LLC*
TUMA21	15:59 – 16:14	Demystifying 'N': Improving Temperature Variable Attenuator Selection by Modeling Temperature Behavior	Wes Laquerre, *International Manufacturing Services*
TUMA22	16:16 – 16:32	Full Thermal Single Sweep Broadband S-Parameter Measurements to 250 GHz with Single Ended and Differential Approaches	GAVIN FISHER, *FORMFACTOR GmbH*
TUMA23	16:34 – 16:49	How to Reduce Thermal Drift in Transmit-Receive Modules (TRM).	Dave Raymond, *Smiths Interconnect*

Sponsored By:

everythingRF

252AB

Tu2A: Broadband RF Front-End Components for Next-Generation Wireless Systems

Chair: Bichoy Bahr, *Texas Instruments*
Co-Chair: Justin Wu, *AmLogic*

Tu2A-1: A 5–7GHz Channel and Bandwidth Selective Shunt N-Path LNA Based Receiver with +6dBm OOC IB1dB, <-71dBm LO Re-Radiation for WiFi 7 Multi-Link Operation

R. Krichman, *Intel*; A. Ravi, *Intel*; N. Ershengoren, *Intel*; R. Banin, *Intel*; S. Krishnamurthy, *Intel*; U. Grosglik, *Intel*; O. Tal, *Intel*; N. Sharvit, *Intel*; O.E. Avraham, *Intel*; S. Zur, *Intel*; O. Degani, *Intel*

Tu2A-2: A Single-Stage Feedback-Feedforward D-Band LNA in SiGe BiCMOS

G. De Filippi, *Fondazione Chips-IT*; L. Piotto, *Fondazione Chips-IT*; A. Mazzanti, *Università di Pavia*

Tu2A-3: A Broadband G-Band Frequency Doubler in 130-nm SiGe Technology

M. Bao, *Ericsson*; Y. Yan, *Chalmers Univ. of Technology*; K. Aufinger, *Infineon Technologies*; H. Zirath, *Chalmers Univ. of Technology*

Tu2A-4: A Fully Differential DC-Capable RF SPDT Switch in SOI

I. Kalyoncu, *Analog Devices*; H. Kayahan, *Analog Devices*

254AB

Tu2B: Advanced Phase-Locking and Clock Generation Techniques

Chair: Ahmed Elkholy, *Broadcom*
Co-Chair: Wanghua Wu, *Samsung*

Tu2B-1: An 8–28-GHz 16-Phase Delay Locked Loop Employing Nested Feedback Loops in 28-nm CMOS

J. Bi, *Fudan Univ.*; Y. Tian, *Fudan Univ.*; J. Gu, *Fudan Univ.*; K. Cen, *Fudan Univ.*; X. Shen, *NICIC*; H. Xu, *Fudan Univ.*; N. Yan, *Fudan Univ.*

Tu2B-2: A 6.2-GHz Reference-Feedthrough-Suppressed Type-I Sampling PLL with a Bottom-Plate-Sampling PD Scoring 18.2 fsrms Jitter, -258.7-dB FoM and -80.6-dBc Reference Spur

N. Zhang, J. Xiao, *Xidian Univ.*; X. Liu, *SUSTech*; R. Liu, J. Zhu, Y. Zhou, *Xidian Univ.*; F. Liang, *USTC*; X. Wang, W. Peng, *USTC*; Y. Yang, X. Ma, Y. Hao, *Xidian Univ.*; M. Liu, *Xidian Univ.*; Y. Chen, *Tsinghua Univ.*

Tu2B-3: A 25.4fs Jitter Fractional-N Digital PLL with an LC-Based Power-Gated Oscillator and Series-Resonance DCO

D. Lodi Rizzini, M. Rossoni, F. Osio, S. Gallucci, R. Moleri, *Politecnico di Milano*; A. Mazzanti, *Università di Pavia*; A.L. Lacaita, S.M. Dartizio, S. Levantino, *Politecnico di Milano*

Tu2B-4: A 2.4-GHz 168-fsrms-Jitter and -56-dBc-Reference-Spur RO-Based Cascaded Injection-Locked Clock Multiplier

Q. Luo, *SUSTech*; H. Mao, *SUSTech*; X. Liu, *SUSTech*

Tu2B-5: An Ultra Low Noise 5-GHz Ring Oscillator-Based PLL with Over-Sampling Feedforward Phase Noise Cancellation Achieving -267.05dB FoMN

Y.-H. Huang, *Univ. of Washington*; P.-H. Cheng, *Univ. of Washington*; J.C. Rudell, *Univ. of Washington*

257AB

Tu2C: Next Generation Sub-THz Circuit Blocks

Chair: Vadim Issakov, *Technische Universität Braunschweig*
Co-Chair: Kenichi Okada, *Institute of Science Tokyo*

Tu2C-1: A 110–170GHz Phase-Insensitive and PVT-Robust Digital-Step Attenuator with Phase Compensation and Background Step Calibration

B.A. Abdelmagid, *ETH Zürich*; A. Wang, *ETH Zürich*; H. Wang, *ETH Zürich*

Tu2C-2: A 121/145GHz Dual-Band LNA with Single-Path and Dual-Mode Gain-Boosting Core in 28nm CMOS

H. Lee, *KAIST*; H.-R. Jeon, *KAIST*; N. Hwang, *KAIST*; S.-G. Lee, *KAIST*; K.-S. Choi, *Yonsei Univ.*

Tu2C-3: A 224-GHz 5.9-dBm-Pout VCO Utilizing Deep-Triode-Induced Current Top-Clipping Technique

M. Yu, *Tianjin Univ.*; J. Zhang, *Tianjin Univ.*; K. Ma, *Tianjin Univ.*; Z. Yang, *Tianjin Univ.*

Tu2C-4: A 111.5GHz-to-163.6GHz 37.9%-Tuning-Range -200.3dBc/Hz-FoMT VCO Employing Hybrid Coarse-Magnetic-Tuning and Fine-Capacitive-Tuning Techniques

H. Yang, *HKUST*; B. Zhang, *HKUST*; Y. Liu, *HKUST*; Z. Jing, *HKUST*; Z. Liu, *HKUST*; H.C. Luong, *HKUST*

Tu2C-5: A 220 to 260GHz Ultra-Compact, Calibration-Free 5-Bit Phase Shifter with 1.8° RMS Phase Error in 9HP SiGe Process

M. Tian, *Penn State*; L. Zhong, *Penn State*; W. Lee, *Penn State*

255

Tu2J: Co-Packaged Optics and Die-to-Die Interfaces

Chair: Zeshan Ahmad, *Coherent*
Co-Chair: Bahar Jalali Farahani, *Cisco*

Tu2J-1: A 1.49pJ/b 4-Channel 256-Gb/s MRM-Based Coherent Co-Packaged Optics with Linear Carrier Phase Recovery

P. Zeng, *Univ. of Washington*; M. Rezaei, *Univ. of Washington*; D. Sturm, *Univ. of Washington*; A.R. Nayak, *Univ. of Washington*; H. Li, *Univ. of Washington*; S. Moazeni, *Univ. of Washington*

Tu2J-2: A 200Gbps 0.67pJ/bit Transceiver Front-End for Silicon-Photonics with Group Delay and Nonlinear Adjustment in 28nm CMOS

Y. Yang, *CAS*; S. Bao, *CAS*; C. Cheng, *CAS*; B. Wang, *CAS*

Tu2J-3: An 8×64Gb/s PAM-4 Retimed Optical Receiver with Forwarded Clock for UCIe Compliant Optical I/O in 28-nm CMOS

Y. He, J. Zhao, Z. Duan, P. Tan, Y. Li, Y. Zeng, Z. Peng, H. Sun, S. Wei, *Xi'an Jiaotong University*; C. Zhang, D. Wang, S. Wu, J. Luan, H. Luo, *Sanechips Technology*; X. Gui, *Xi'an Jiaotong University*

Tu2J-4: A 3.5-to-14GHz, Less-Than-0.81LSB-INLpp, 7b Adaptive Phase Interpolator with Segment-Squeeze INL Calibration Algorithm for Die-to-Die Interfaces

S. Li, *Tsinghua Univ.*; Y. Chen, *CAS*; W. Deng, *Tsinghua Univ.*; N. Qi, *CAS*; H. Jia, *Tsinghua Univ.*; L. Liu, *CAS*; B. Chi, *Tsinghua Univ.*

10:10
10:30
10:50
11:10
11:30
11:50

TUESDAY

253ABC

Tu2D: Integrated Sensing and Communication (ISAC) Innovation: Enabling a Dual-Purpose Future

Chair: Kenneth E. Kolodziej, *MIT Lincoln Laboratory*
Co-Chair: Marcus Pan, *Mercury Systems*

10:10 – 10:30

Tu2D-1: RISCAM: A 576-Element 2D Scalable Reconfigurable Intelligent Surface with Multi-Beam RF Camera at X-band for ISAC

Tyler Blundo, *Princeton Univ.*; Zijian Shao, *Princeton Univ.*; Alex Stepko, *Princeton Univ.*; Emir Ali Karahan, *Princeton Univ.*; Juho Park, *Princeton Univ.*; Kaushik Sengupta, *Princeton Univ.*

10:30 – 10:50

Tu2D-2: Millimeter-Wave Active STAR-RIS with Programmable Reflect and Transmit Operation and Channel Sensing for Secure ISAC

W. Fang, *Princeton Univ.*; M. Allam, *Princeton Univ.*; Z. Shao, *Princeton Univ.*; H. Saeidi, *Qualcomm*; A. Stepko, *Princeton Univ.*; K. Sengupta, *Princeton Univ.*

10:50 – 11:10

Tu2D-3: CHAMELEON: Integrated Sensing and Communication with Sub-Symbol Beam Switching in mmWave Networks

Z. Gao, *Duke Univ.*; Z. Liu, *Duke Univ.*; T. Chen, *Duke Univ.*

11:10 – 11:30

Tu2D-4: DualSense: A Testbed for Dual-Band (ISM and 5G FR2) ISAC Leveraging Dual-Polarized Phased Arrays

A. Paidimarri, *IBM*; S. Garcia Sanchez, *IBM*; A. Tzadok, *IBM*; A. Gallyas-Sanhueza, *IBM*; M. Hack, *IBM*; A. Valdes-Garcia, *IBM*

11:30 – 11:50

Tu2D-5: FPGA Acceleration and Over-the-Air Validation of IEEE 802.11ad Based Integrated Sensing and Communication Using RFSoC and Millimeter Wave Front-Ends

J. Mangal, *IIIT-Delhi*; A. Choudhary, *IIIT-Delhi*; J. Tekchandani, *IIIT-Delhi*; S.S. Ram, *IIIT-Delhi*; S. Darak, *IIIT-Delhi*; J. Bahuguna, *IIIT-Delhi*

259AB

Tu2E: Advances in Receiver and Transmitter Architectures

Chair: Nizar Messaoudi, *Keysight Technologies*
Co-Chair: Steven Rosenau, *Apple*

10:10 – 10:30

Tu2E-1: A Low-Power and Self-Interference-Tolerant Receiver for Shared-Aperture In-Band Full-Duplex Arrays

H. Lim, *Yonsei Univ.*; Y. Lee, *Samsung*; S.Y. Han, *Yonsei Univ.*; B.-W. Min, *Yonsei Univ.*

10:30 – 10:50

Tu2E-2: Investigations on Radiometric DoA Estimation of Human Body Targets at Ka-Band Using a Space-Division Multiple-Access Approach

M. Badii, *Università di Firenze*; S. Maddio, *Università di Firenze*; G. Collodi, *Università di Firenze*; M. Righini, *Università di Firenze*; A. Cidronali, *Università di Firenze*

10:50 – 11:10

Tu2E-3: A 4.7mW, 57–64GHz Mixer-First Receiver in 22nm FDSOI for Green Cognitive Radios

S.P. Rout, *Barkhausen Institut*; P. Sen, *Barkhausen Institut*; A. Harutyunyan, *Barkhausen Institut*

11:10 – 11:30

Tu2E-4: Parametric Frequency Conversions for Broadband Spread Spectrum Signal Processing in RF Front-Ends

S.C. Chen, *Univ. of California, Los Angeles*; Y.E. Wang, *Univ. of California, Los Angeles*

11:30 – 11:50

Tu2E-5: A W-Band +7dBm Output Power Direct Digital RF Transmitter Using Manchester-Encoded 1-Bit BPDSM and Frequency Tripler

Y. Fujiya, *Tohoku Univ.*; R. Miyagawa, *Tohoku Univ.*; T. Furuichi, *Tohoku Univ.*; S. Tsukamoto, *Tohoku Univ.*; N. Suematsu, *Tohoku Univ.*

156AB

Tu2F: Scalable mm-Wave to sub-THz Phased-Array Transceivers and Front-End Architectures

Chair: Kenneth Mays, *Boeing*
Co-Chair: Glenn Hopkins, *Georgia Tech*

10:10 – 10:30

Tu2F-1: E-Band 2×2 Unit Phased Array with Die-to-Die Stitching Scalability for Wafer-Scale Phased Array Systems

Y. Lee, *Samsung*; D. Chun, *Yonsei Univ.*; K.-J. Choi, *Yonsei Univ.*; B.-W. Min, *Yonsei Univ.*

10:30 – 10:50

Tu2F-2: A D-Band SiGe TDD Front-End Featuring a Compact Asymmetric T/R Switch Enabled by Dual-Mode Reconfigurable Coupled-Lines

L. Kong, *Southeast Univ.*; J. Chen, *Southeast Univ.*; P. Zhou, *Southeast Univ.*; C. Shu, *Southeast Univ.*; D. Tang, *Southeast Univ.*; Q. Meng, *Southeast Univ.*; R. Zhou, *Technische Univ. Braunschweig*; S.-Y. Tang, *Southeast Univ.*; Y. Qi, *Southeast Univ.*; Z. Wang, *Southeast Univ.*; P. Yan, *Southeast Univ.*; W. Hong, *Southeast Univ.*

10:50 – 11:10

Tu2F-3: A 140GHz 4-Channel High Power Density Beamforming Front-End in 40-nm Bulk CMOS

J. Kim, *Sungkyunkwan Univ.*; C. Lee, *Samsung*; J. Lee, *Sungkyunkwan Univ.*; M. Seo, *Sungkyunkwan Univ.*

11:10 – 11:30

Tu2F-4: Dual-Channel Tx/Rx-Front-Ends for High Resolution Radar at 160GHz

P. Umbach, *Fraunhofer IAF*; L. John, *Fraunhofer IAF*; R. Weber, *Fraunhofer IAF*; A. Leuther, *Fraunhofer IAF*; F. Thome, *Fraunhofer IAF*

11:30 – 11:50

Tu2F-5: A 230-GHz Wideband High-Efficiency Beam-Steering 1×2 Phased-Array Transmitter in 40-nm CMOS

Yi-Hsiu Liu, *National Taiwan Univ.*; Somia Sharma, *National Taiwan Univ.*; Chun-Sheng Lin, *National Taiwan Univ.*; Chun-Hsing Li, *National Taiwan Univ.*

157AB

Tu2G: AI-Enabled RF: Design and Linearization

Chair: Chenhao Chu, *ETH Zürich*
Co-Chair: Aditya Dave, *Samsung Research America*

10:10 – 10:30

Tu2G-1: KEYNOTE: AI/Machine Learning Technologies for Electromagnetic/Multiphysics Based Modeling and Optimization

Q.-J. Zhang, *Carleton Univ.*

10:30 – 10:50

Tu2G-2: Residual Structure-Based Multi-Model Neural Network with Physical Inspired Core for Digital Predistortion in 6G Intelligent Radio

Xin Wei, *Xidian Univ.*; Xin Liu, *Xidian Univ.*; Huanhuan Jia, *Xidian Univ.*; Tong Shen, *Xidian Univ.*; Ting Feng, *Xidian Univ.*; Yang Lu, *Xidian Univ.*; Xiaohua Ma, *Xidian Univ.*; Wenhua Chen, *Tsinghua Univ.*

10:50 – 11:10

Tu2G-3: Mamba Based Digital Predistortion for Wideband Doherty Power Amplifiers

S. Amir, *Univ. of Calgary*; M.H. Khazani, *Univ. of Calgary*; M. Helaoui, *Univ. of Calgary*; F.M. Ghannouchi, *Univ. of Calgary*

11:10 – 11:30

Tu2G-4: AI-Enabled Inverse Design of Planar RF Passives Under Arbitrary Footprint Constraints

J. Park, *Princeton Univ.*; Z. Shao, *Princeton Univ.*; J. Zhou, *Princeton Univ.*; K. Sengupta, *Princeton Univ.*

11:30 – 11:50

Tu2G-5: AI-Enabled Inverse Design of Harmonic Terminated mmWave PAs and Frequency Doublers

E.A. Karahan, *Marvell Semiconductor*; J. Zhou, *Princeton Univ.*; S. Ghozzy, *Princeton Univ.*; K. Sengupta, *Princeton Univ.*

151AB

Tu2H: Recent Advances in Microwave Acoustic Devices

Chair: Holger Maune, *Technische Universität Darmstadt*

Co-Chair: Amelie Hagelauer, *Technische Universität München*

Tu2H-1: KEYNOTE: AI Needs RF: Power, Edge Intelligence, and the Role of RF Hardware

G. Fattinger, *Qorvo*

Tu2H-2: 18-GHz Bi-Layer A3-Mode Acoustic Resonators with Near-Zero TCF and High Electromechanical Coupling

Y. Wang, *USTC*; F. Lin, *USTC*; Z. Dai, *USTC*; K. Yang, *HKUST*; J. Wang, *USTC*; J. Fang, *USTC*; J. Chen, *USTC*; M. Li, *USTC*; H. Qiu, *USTC*; C. Zuo, *USTC*

Tu2H-3: A Miniature Reconfigurable Acoustic RF Coupler

Hersh Desai, *Univ. of Michigan*; Amir Mortazawi, *Univ. of Michigan*

Tu2H-4: Generalized Synthesis of Double-Ladder Acoustic Filters with Demonstration of a High-Performance Dual-Band Duplexer on LTOI

H. Tian, *UESTC*; J. Cai, *UESTC*; Y. Dong, *UESTC*

Tu2H-5: Wideband Bandpass Filter Cell Using a Hybrid BAW-Assisted Topology

S. Cano, *Univ. Autònoma de Barcelona*; A. Giménez, *Qorvo*; E. Guerrero, *Qorvo*; L. Acosta, *Qorvo*; C. Caballero, *Qorvo*; Y. Yusuf, *Qorvo*; J. Verdú, *Univ. Autònoma de Barcelona*; P. de Paco, *Univ. Autònoma de Barcelona*

Tu2H-6: Arbitrarily Configurable Group Delay in Acoustic Devices

D.R. Holmes, *Univ. of Waterloo*; M. Ou, *Univ. of Waterloo*; E. Abdel-Rahman, *Univ. of Waterloo*; R.R. Mansour, *Univ. of Waterloo*

153AB

Tu2I: Phase-Shifters and True-Time-Delay Circuits (Don't be Late)

Chair: Hjalti Sigmarsson, *University of Oklahoma*

Co-Chair: Xun Gong, *University of Central Florida*

Tu2I-1: 3D Simultaneous Multi-Material Printed RF Signal Processing Wideband Tunable True Time Delay Circuit

M. Uzair, *FAMU-FSU*; A. Naseem, *FAMU-FSU*; S. Niazi, *FAMU-FSU*; H. Zhang, *FAMU-FSU*; S. Zolfaghary Pour, *FAMU-FSU*; H. Yan, *FAMU-FSU*; F. Yan, *FAMU-FSU*; P. Liu, *FAMU-FSU*; J. Casamayor, *FAMU-FSU*; M. Reynolds, *FAMU-FSU*; B. Arigong, *FAMU-FSU*

Tu2I-2: A Compact 4-Bit PCM-Based Hybrid Phase Shifter in 0.18-µm SiGe BiCMOS for 28GHz Phased Arrays

H. Yu, *Univ. of Waterloo*; X. Zhang, *Univ. of Waterloo*; S. Boumaiza, *Univ. of Waterloo*

Tu2I-3: A D-Band 5-Bit Switch-Type Phase Shifter with Low IL and Phase Error Using a Switch-Self-Phase-Shifting Unit

Y. Wang, *Southeast Univ.*; J. Chen, *Southeast Univ.*; P. Zhou, *Southeast Univ.*; J. Li, *Southeast Univ.*; L. Kong, *Southeast Univ.*; Z. Zheng, *Southeast Univ.*; Q. Meng, *Southeast Univ.*; D. Tang, *Southeast Univ.*; W. Hong, *Southeast Univ.*

Tu2I-4: A 0.14-mm² Mixed-Type True-Time Delay Circuit Based on Slow-Wave Transmission Lines Covering 52.8ps for 5G/B5G Carrier Aggregation

Q. Li, *SJTU*; Y. Li, *SJTU*; Z. Wang, *SJTU*; X. Luo, *SJTU*; R. Wang, *SJTU*; Y. Mei, *SJTU*; X. Sui, *SJTU*; Z. Feng, *CETC13*; L. Wu, *SJTU*; J. Mao, *SJTU*; J. Pang, *SJTU*

Tu2I-5: A 20–40GHz MMIC 180° Filtering Phase Shifter with 5° Phase Error in 0.25-µm GaAs Technology

N. Ji, *SCUT*; G. Shen, *NJUPT*; Y. Li, *SCUT*; D. Zeng, *SCUT*; P. Zhou, *SCUT*; W. Che, *SCUT*

10:10 10:20 10:30 10:40 10:50 11:00 11:10 11:20 11:30 11:40 11:50

MICROAPPS THEATER, BOOTH 15122

Startup Panel Session: Startups and Digital Twins: Accelerating Design, Development, and Deployment

11:10 - 11:55 | TUESDAY, 9 JUNE 2026

Abstract: 'Digital Twins' promise shortened development cycles, faster prototyping, and reduced cost early in the design stage. But where does this technology stand and how can it help startup companies get to deployment and ultimately profitability faster? Hear thoughts from industry experts and leading academic researchers on how this technology can change the design cycle and help startups achieve success without burning through all their hard-earned funding.

Moderator: Dr. Ian Rippke, *Director of Global Software Solutions, Keysight Technologies*

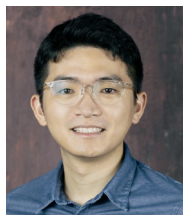
IAN RIPPKE

Panelists:

Dan Mantoni, *Analog Devices*
Dr. Xu Zhu, *Menlo Micro*
Dr. Tingjun Chen, *Duke University*

DAN MANTONI

XU ZHU



TINGJUN CHEN

TUESDAY

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RFSA Panel Session: Spectrum Sharing and Coexistence above 100 GHz

12:00 – 13:30 | TUESDAY, 9 JUNE 2026 | ROOM: 256

In an increasingly congested spectrum landscape, companies, regulators, and policymakers are looking at new frequencies. With large chunks of untapped bandwidth, and the increasing maturity of the required technology, the sub-THz band offers significant promise for the wireless communications world. At the same time, existing services and stakeholders in the band, e.g., from the passive remote sensing and radio astronomy communities, need to be protected. Finally, international and national regulations limit emissions above 100 GHz largely based on considerations derived at lower frequency, overlooking the unique characteristics of electromagnetic wave propagation above 100 GHz, e.g., molecular absorption, and of the corresponding technology, e.g., the extreme directivity of the antennas. There is a growing need for 1) new propagation models and measurements across frequencies that capture the stakeholders' diverse needs and ways of interacting with the spectrum; 2) new circuits, antenna designs, and interference cancellation techniques for sharing and coexistence; and 3) dialogue between the scientific and other stakeholders to understand and model Radio Frequency Interference. With this panel, we want to foster the dialogue between often siloed communities. To do so, we have invited representatives from the wireless communications, radioastronomy, and remote sensing community, including policy advocates and experts.

Organizers: Josep Jornet, Paolo Testolina, *Northeastern University*

Panelists:

Thomas Kürner, *Technische Universität Braunschweig*

Iwao Hosako, *National Insitute of Information and Communications Technology*

Renee Leduc, *Narayan Strategy*

Micheal Marcus, *Marcus Spectrum Solutions*

Priscilla Mohammed, *Goddard Earth Sciences Technology and Research*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

Inter-Society Panel Session: HART — AI for Hardware and Hardware for AI

12:00 – 13:30 | TUESDAY, 9 JUNE 2026 | ROOM: 156C

Recent advances in artificial intelligence (AI) and machine learning (ML) are transforming the way wireless components and complex electromagnetic (EM) systems are conceived, designed, and deployed. This session explores how ML-enabled optimization techniques are redefining applied electromagnetics, spanning the full pipeline from computational electromagnetics (CEM), uncertainty quantification (UQ), and antenna design to impactful applications such as magnetic resonance imaging (MRI), orthopaedic diagnostics, and remote sensing of snow and environmental parameters. By embedding AI and ML into EM modeling and optimization workflows, engineers can accelerate design cycles, navigate high-dimensional design spaces, and achieve performance levels that are difficult to reach with conventional approaches.

Beyond algorithms, the session emphasizes the critical role of data in driving the quality, robustness, and trustworthiness of AI-based solutions. High-fidelity simulation data, measurement-driven datasets, and hybrid physics-informed approaches are discussed as essential enablers for reliable learning and generalization. Attention is also given to the challenge of bridging ambition and deployment—moving AI-enhanced EM techniques from proof-of-concept demonstrations to deployable, validated systems operating under real-world constraints.

Organizers: Nuno Borges Carvalho, *University of Aveiro;* **Ke Wu,** *Polytechnique Montreal*

Panelists:

Costa Sarris, *MTT-S*
Branislav Notaroš, *AP-S*

Raymond Chik, *IEEE AI Coalition*
Rakesh Kumar, *IEEE Future Directions Committee*

Cecilia Metra, *IEEE Computer Society*
Vesna Sossi, *IEEE Division IV*

STARTUP PAVILION PRESENTATION AREA

The Launchpad: Live Demonstrations in the Startup Pavilion

Witness the future in motion! Join us at the Startup Pavilion to experience live, hands-on demonstrations from the industry's most promising innovators as they showcase the breakthrough technologies redefining the RF and microwave landscape.

TIME/SLOT	Company — Talk Title
Tuesday, 9 June 2026 | 12:00-13:30	**Pseudolithic Inc.** — High-Efficiency X-Band GaN Power Amplifier Using Heterogeneous GaN-on-SiC Integration in an SOI Interposer
Tuesday, 9 June 2026 | 14:00-15:30	**TMS Test Services** — Thermal Stabilizer for RF load Pull Characterization
Wednesday, 10 June 2026 | 09:30-11:00	**Philowave** — Interference- From a Problem to a Solution
Thursday, 11 June 2026 | 09:30-11:00	**JITX** — Next-gen AI-driven software platform for PCB design automation, automating SI setup and optimization
Thursday, 11 June 2026 | 11:00-12:30	**Jones Microwave** — Live Demonstration of Jones Microwave's Solid-State Plasma Switch
Thursday, 11 June 2026 | 12:30-14:00	**EchoICs** — Flexible Spectrum Radio - Wide Bandwidth Without Compromise

252AB

Tu3A: Recent Advances in GaN Technology

Chair: Oleh Krutko, *IMEC*
Co-Chair: Harshpreet Bakshi, *Texas Instruments*

Tu3A-1: High-Performance Near-Enhancement-Mode InAlGaN/GaN HEMTs on Silicon with High fT/fMAX of 71.5/173.1GHz for Millimeter-Wave Applications

H.-Y. Huang, *NYCU*; P.-W. Chen, *NYCU*; Y.-C. Weng, *NYCU*; Y.-T. Lin, *NYCU*; Fitriyadi, *NYCU*; J.-C. Sun, *Infinity Communication Technology*; C. Zhang, *Infinity Communication Technology*; E.Y. Chang, *NYCU*

Tu3A-2: GH10-10 Nonlinear Thermal Model Capability & 3W SatCom HPA

S. Bouzid-Driad, *UMS*; F. Drillet, *UMS*; C. Chang, *UMS*; M. Madel, *UMS*; K. Vivien, *UMS*; L. Brunel, *UMS*; R. Pecheux, *UMS*; H. Blanck, *UMS*; V. Di Giacomo-Brunel, *UMS*

Tu3A-3: Fully Aluminum-Based 0.25µm 20V GaN-on-Si Process with 3W/mm for FR3

H.S. Wu, *A*STAR*; Y. Gao, *A*STAR*; Q. Xie, *A*STAR*; Y.H. Leong, *A*STAR*; W.L. Ong, *A*STAR*; L.K. Bera, *A*STAR*; N. Singh, *A*STAR*; G.I. Ng, *A*STAR*

Tu3A-4: A 4W Heterogeneous Power Amplifier with GaN-on-Si Dielets in Single-Crystal Diamond Interposer for 6G FR3 Applications

P. Yadav, *MIT*; X. Li, *Georgia Tech*; D.A. Baig, *Georgia Tech*; R. Han, *MIT*; M. Swaminathan, *Penn State*; T. Palacios, *MIT*

254AB

Tu3B: Next-Generation CMOS Oscillators for RF and mm-Wave

Chair: Andrea Bevilacqua, *Università di Padova*
Co-Chair: Kimia T. Ansari, *Danger Devices*

Tu3B-1: A Transformer-Based Inverse-Class-F-Like VCO with a Digitally Controlled Common-Mode Impedance Tuner

H. Kim, *Korea Univ.*; D. Seong, *Korea Univ.*; S. Shim, *Korea Univ.*; S. Jeon, *Korea Univ.*

Tu3B-2: A 5.56–9.09GHz Octa-Core Dual-Mode DCO Based on Multi-Tap Three-Turn Inductor Achieving 195.7dBc/Hz FoM and Wideband Flicker PN Suppression

J. Weng, *USTC*; L. Dong, *USTC*; Y. Yang, *USTC*; G. Liu, *USTC*; L. Lou, *USTC*; R.B. Staszewski, *Univ. College Dublin*; Y. Hu, *USTC*

Tu3B-3: A 7.0-to-8.6 GHz Balanced Class-F-1 VCO with a Trifilar Transformer-Based Tank Achieving 194.5dBc/Hz FoM

Y. Huang, *CAS*; Z. Yang, *CAS*; K. Cheng, *CAS*; H. Ren, *CAS*; X. Shan, *CAS*; L. Wang, *CAS*; Y. Chen, *Tsinghua Univ.*; B. Li, *CAS*

Tu3B-4: Harmonically Coupled Current-Sharing 4-Phase and 6-Phase Oscillators in 65-nm CMOS

B. Jafari, *Univ. of British Columbia*; S. Sheikhaei, *Univ. of Tehran*; S. Aniruddhan, *IIT Madras*; S. Mirabbasi, *Univ. of British Columbia*; S. Shekhar, *Univ. of British Columbia*

Tu3B-5: A 10.66-to-15.03GHz Dual-Core Dual-Mode Series Resonance VCO Achieving 209dBc/Hz FoMTA

Y. Liu, *Tsinghua Univ.*; Z. Rao, *Tsinghua Univ.*; Y. Wang, *Tsinghua Univ.*

257AB

Tu3C: Advanced Integration Technologies for Power Amplifier and Low-Noise Amplifier Design

Chair: Alexandre Giry, *CEA-LETI*
Co-Chair: Gernot Hueber, *United Micro Technology*

Tu3C-1: 3D-RDL and Bondwire Technology Comparison for Implementation of a 10W Broadband Three-Way LDMOS Doherty Power Amplifier

M. Rousstia, *Ampleon*; A. Ghannam, *3DiS Technologies*; M. Ercoli, *Ampleon*; J. Gajadharsing, *Ampleon*

Tu3C-2: A 10-W 7-GHz GaN-on-Si Doherty Power Amplifier with Hybrid MMIC-Module Integration for 6G Base-Station Applications

K.P. Jung, *Samsung*; S. Jee, *Samsung*; S.H. Kim, *Samsung*; S. Oh, *Samsung*; J. Kim, *Samsung*; D. Kim, *Samsung*; S.-K. Kim, *Samsung*

Tu3C-3: A 60GHz LNA and PA Achieving 5dB NF and 35.6% Peak PAE in a Gate-All-Around (GAA) CMOS Process with Backside Power Delivery

S. Callender, *Intel*; I. Momson, *Intel*; A. Khodkumbhe, *Univ. of California, Berkeley*; A. Niknejad, *Univ. of California, Berkeley*; S. Rami, *Intel*; S. Pellerano, *Intel*

Tu3C-4: A Wideband and Linear 300GHz Power Amplifier in 130nm SiGe BiCMOS Technology

E. Jimenez Tuero, *IHP*; S. Dilek, *IHP*; A. Malignaggi, *IHP*; C. Carta, *IHP*

13:30
13:50
14:10
14:30
14:50
15:10

TUESDAY

253ABC

Tu3D: Integrated Sensing and Communications (ISAC) Technologies and Applications

Chair: Olga Boric-Lubecke, *University of Hawai`i at Mānoa*
Co-Chair: Kwang-Jin Koh, *Boeing*

13:30

Tu3D-1: KEYNOTE: Ubiquitous Apertures at the AI-Driven Frontier of Phased-Array Systems for Integrated Sensing and Communications

J.P. Massman, *Analog Devices*

13:40

13:50

Tu3D-2: Multibeam Phased Arrays with Spherical-Gold Spatio-temporal Coding for Fading-Resilient and Delay-Robust Beam Isolations

Yuan Ma, *Northeastern University* ; Mike Ballou, *Keysight Technologies*; Kyle Richard, *Keysight Technologies*; Hessam Mahdavifar, *Northeastern University* ; Najme Ebrahimi, *Northeastern University*

14:00

14:10

Tu3D-3: I²SAC: AI-Enabled Digital-Twin Framework on a mmWave 64-Element Phased Array for Integrated Imaging, Sensing, and Communication

V.R. Anapana, *North Carolina State Univ.*; J. Sober, *North Carolina State Univ.*; L.D. Hogan, *North Carolina State Univ.*; S. Venkatesh, *North Carolina State Univ.*

14:20

14:30

Tu3D-4: A Wideband ME Dipole-Enabled DAM Antenna for Integrated Frequency-Agile Sub-6GHz Communication and Vital Sign Sensing

S. Li, *Rutgers Univ.*; S. Xie, *Rutgers Univ.*; D. Gao, *Rutgers Univ.*; C.-T.M. Wu, *Rutgers Univ.*

14:40

14:50

Tu3D-5: Detection of Passive Nonlinear RF Tag Micro-Motion Using Communication Signals of Opportunity

C. Hilton, *Michigan State Univ.*; S. Huang, *Michigan State Univ.*; J.A. Nanzer, *Michigan tate Univ.*

15:00

15:10

259AB

Tu3E: Recent Adances in Aerospace Systems for SATCOM and Radar Applications

Chair: Jim Sowers, *Maxar*
Co-Chair: Jan Budroweit, *DLR*

Tu3E-1: Dynamic Refocusing of a Flexible Phased Array via Shape Tracking

A. Elgarat, *Ben-Gurion Univ.*; M. Gal-Katziri, *Ben-Gurion Univ.*

Tu3E-2: UAV Detection in Strong Micro-Doppler Clutter Using Denoising Autoencoders and Convolutional Neural Networks

M.Z. Kaya, *Texas A&M Univ.*; A. Menon, *Texas A&M Univ.*

Tu3E-3: Passive Reduction of Phase Rotation and Doppler Shift on Moving Communication Systems by Using Kramers-Kronig Receivers

J. Gruber, *Univ. of Michigan*; M. Ramesh, *Univ. of Michigan*; E. Afshari, *Univ. of Michigan*

Tu3E-4: A LEO SATCOM TRX Front-End Using CMOS and D-mode GaAs Processes with Current Reuse, Enabling All Positive Biases

Jill Mayeda, *Institute of Science Tokyo*; Sena Kato, *Institute of Science Tokyo*; Xiaolin Wang, *Institute of Science Tokyo*; Atsushi Shirane, *Institute of Science Tokyo*

Tu3E-5: A Compact Circularly Polarized Integrated Feeder System for Next-Generation Q/V-Band Satellite Links

M. Gadelrab, *Scientific Microwave*; M.M.M. Ali, *Assiut University*; M. Elsaadany, *MacEwan University*; S.I. Shams, *Concordia Univ.*; G. Saad, *Scientific Microwave*

156AB

Tu3F: The Future is Directed: Innovations in Phased Array Systems and Subsystems

Chair: Zuo-Min Tsai, *NYCU*
Co-Chair: Tzu-Yuan Huang, *ARGUS SPACE*

Tu3F-1: KEYNOTE: Beamforming Technology Advancements for Phased Array Radar Systems

Sukh S. Deo, *Analog Devices*

Tu3F-2: PRBFN-FAS: Fluid Antenna System Enabled by Pixel-Based Reconfigurable Beamforming Networks

J. Zhang, *HKUST*; J. Rao, *HKUST*; C.-Y. Chiu, *HKUST*; R. Murch, *HKUST*

Tu3F-3: Optically Controlled Reconfigurable Holographic Metasurfaces for Electronic Beam Steering

F. Shan, *Arizona State Univ.*; G.C. Trichopoulos, *Arizona State Univ.*

Tu3F-4: A 7.1–8.4GHz Slant Dual-Polarized High-Aperture-Efficiency Reconfigurable Intelligent Surface for 6G FR3 Systems

J. Qi, *Univ. of California, San Diego*; J. Drewniak, *Univ. of California, San Diego*; T. Liang, *Univ. of California, San Diego*; G.M. Rebeiz, *Univ. of California, San Diego*

Tu3F-5: Receiver G/T Analysis of Phased-Array-Fed Lens Systems

J. Mathis, *Univ. of Notre Dame*; B. Davis, *Univ. of Notre Dame*; J. Lovejoy, *Lockheed Martin*; J. Chisum, *Univ. of Notre Dame*

157AB

Tu3G: Emerging Innovative Systems and Applications

Chair: Rudy Emrick, *Northrop Grumman*
Co-Chair: Shekh Md.M. Islam, *University of Dhaka*

Tu3G-1: Over-the-Air Waveform Synthesis and Calibration for D-Band Digital Arrays with Imperfect Low-Resolution Digital-to-Phase Modulation

N. Tervo, *Univ. of Oulu*; J.J. Kim, *Univ. of California, Santa Barbara*; A. Dinkelacker, *Univ. of California, Santa Barbara*; J.F. Buckwalter, *Univ. of California, Santa Barbara*

Tu3G-2: Physical Layer Security via Secret Sharing Over Time Modulated Arrays

U. Gupta, *Northeastern University* ; H. Mahdavifar, *Northeastern University* ; N. Ebrahimi, *Northeastern University*

Tu3G-3: Self-Cooling GaN Power Amplifier Enabled by Harmonic Injection for Scalable High-Density Array Integration

S.F.B. Faruquee, *Northeastern University* ; P. Gong, *Northeastern University* ; N.B. Vangipurapu, *Univ. of Central Florida*; J. Guo, *Skyworks*; M. Sedaghat, *Northeastern University* ; K. Chen, *Northeastern University*

Tu3G-4: First Experimental Demonstration of Photonic Time Crystal Amplification Using Varactor-Modulated Microstrip at 1GHz

I.H. Abdelaziem, *Purdue Univ.*; M.F. Hagag, *Military Technical College*; T.R. Jones, *Jones Microwave*; D. Peroulis, *Purdue Univ.*

151AB

Tu3H: Advanced mm-Wave Frequency Conversion and Signal Generation in Silicon and III-V Processes

Chair: Chinchun Meng, *NYCU*

Co-Chair: Damla Dimlioglu, *Cornell University*

Tu3H-1: A 38-41 GHz 27-dBm Direct-Conversion I/Q Transmitter in 0.12-µm GaN Technology with Enhanced Linearity for 4096-QAM Modulation

Cheng-Yang Lee, *National Central Univ.* ; Wei-Chih Chang, *National Central Univ.* ; Po-Yuan Chen, *National Central Univ.* ; Hong-Yeh Chang, *National Central Univ.*

Tu3H-2: A -9.3-dBm Output Power 290-GHz Push-Push Mixer in 28-nm CMOS for Sub-THz Transmitter Applications

T.-Y. Chang, *National Taiwan Univ.*; T.-W. Huang, *National Taiwan Univ.*; K.-J. Chuang, *National Taiwan Univ.*; J.-H. Tsai, *National Taiwan Normal Univ.*; Y.-W. Wang, *National Taiwan Univ.*

Tu3H-3: Digitally Reconfigurable D-Band ×7/×9 Frequency Multiplier Employing an Up/Down-Conversion Single-Sideband Mixer in SiGe

S. Hauptmeier, *Ruhr-Universität Bochum*; T.T. Braun, *Ruhr-Universität Bochum*; J. Romstadt, *Ruhr-Universität Bochum*; N. Pohl, *Ruhr-Universität Bochum*

Tu3H-4: A V-Band GaN Oscillator Using an On-Chip High-Q SIW Resonator with an FoM up to -181.2dBc/Hz

H.-L. Chang, *National Tsing Hua Univ.*; L.-K. Chang, *National Tsing Hua Univ.*; Y.-C. Chang, *NIAR-TSRI*; D.-C. Chang, *NIAR-TSRI*; S.S.H. Hsu, *National Tsing Hua Univ.*

Tu3H-5: A 10.3-to-11.4GHz 191.2dB FoMA Impedance Boosting Series-Resonance Oscillator Using Inverse-Coupling Transformer and Current-Compressed Transistor Achieving -144.3dBc/Hz PN at 10MHz

M. Liu, *UESTC*; W. Chen, *UESTC*; X. Luo, *UESTC*

153AB

Tu3I: Advances in Computational Techniques and Machine Learning Methods for Microwave Applications

Chair: Costas Sarris, *University of Toronto*

Co-Chair: Vladimir Okhmatovski, *University of Manitoba*

Tu3I-1: Physics-Informed Neural Operator for Solving Electromagnetic Forward and Inverse Scattering Problems

Q.-C. Dong, *PolyU*; Z. Chen, *Dalhousie University*; Q.H. Liu, *EIT Ningbo*; W. Chen, *PolyU*

Tu3I-2: Rapid Full-Wave Training-Data Synthesis for Deep-Learning Surrogates

Vinay Chenna, *Univ. of Southern California*; Jon Ho, *Univ. of Southern California*; Jui-Hung Sun, *Univ. of Southern California*; Constantine Sideris, *Stanford Univ.*

Tu3I-3: Efficient and Accurate Method for Separating Variant Components from Invariant Background and Component Model Fusion for Fast RFIC Design Space Exploration

H. Liu, *Purdue Univ.*; D. Jiao, *Purdue Univ.*

Tu3I-4: Efficient and Exact Method for Correcting the Ill-Posedness of the Discrete Maxwell System

R. Zhou, *Purdue Univ.*; D. Jiao, *Purdue Univ.*

Tu3I-5: A Data-Driven Implementation of Field Constitutive Relations for the FDTD Simulation of Dispersive Media

T. Xu, *Univ. of Toronto*; C.D. Sarris, *Univ. of Toronto*

Tu3I-6: Tensor Train Accelerated FDTD Method with Logarithmic Cost of Spatial Operations

C. Nguyen, *Univ. of Manitoba*; V. Okhmatovski, *Univ. of Manitoba*

13:30 13:40 13:50 14:00 14:10 14:20 14:30 14:40 14:50 15:00 15:10

EXHIBIT HALL, MICROWAVE BOULEVARD

YP Game Zone

OPEN ALL EXHIBITION HOURS

Young Professionals in Microwaves

This year, the YP leadership is excited to present the first-ever YP Game Zone, featuring an exciting Retro Gaming Tournament! The tournament will showcase classic favorites such as Super Mario, Street Fighter, NBA Jam, and Mortal Kombat— bringing a sense of nostalgia while creating a fun and engaging atmosphere for social networking. Priority registration will be given to young professionals attending the conference, but everyone is welcome to register and participate.

The competition will be scheduled during conference breaks — the goal of this lively event is to offer attendees the chance to relax, show off their gaming skills, and enjoy light refreshments to stay energized. The final competition and awards ceremony will take place on Thursday morning, 11 June 2026.

TUESDAY

TUESDAY

252AB

Tu4A: Energy-Aware RF Techniques for Sensing and Communication

Chair: Hamidreza Aghasi, *University of California, Irvine*
Co-Chair: Chen Jiang, *Fudan University*

15:40 – 15:50

Tu4A-1: A 533µW Fast Duty-Cycled Pulsed-LO Beam-Steering Receiver

Y. Al-Theyabi, *Univ. of Michigan*; D.D. Wentzloff, *Univ. of Michigan*

16:00 – 16:10

Tu4A-2: MSCR: Multi-Source-Collaborative Reconfigurable RF Energy Harvester with 3-D MPPT Achieving -32dBm Sensitivity and 8× Boost in Available Output Power

Y. Ma, *Tongji Univ.*; Y. Liu, *Tongji Univ.*; H. Chen, *Tongji Univ.*; Y. Zhang, *Tongji Univ.*; L. Qiu, *Tongji Univ.*; M. Meng, *Tongji Univ.*

16:20 – 16:30

Tu4A-3: High Resolution Active True Time Delay with Quasi-Quadrature Generator with 31.7dB/ 500MHz Self-Interference Cancellation for Full-Duplex Communication

E. Jeong, *Chonnam National Univ.* ; E. Jo, *Chonnam National Univ.* ; H. Jeon, *Chonnam National Univ.* ; H. Park, *Chonnam National Univ.* ; H. Song, *Chonnam National Univ.* ; T. Kim, *Chonnam National Univ.* ; S. Lim, *Chonnam National Univ.* ; S.-M. Moon, *ETRI*; S. Jang, *ETRI*; S. Oh, *Hanyang Univ.*; T. Jang, *Hanyang Univ.*; S. Lee, *Chonnam National Univ.* ; S. Hong, *KAIST*; J. Park, *UNIST*

16:40 – 16:50

Tu4A-4: A 1×2cm Localization Tag with a 2.92GHz Transmitter Chipset for LEO Satellite Localization Using Hardware and Algorithm Co-Design

Y. Wang, *Univ. of Michigan*; R. Narasimha, *Univ. of Michigan*; S. Young, *Univ. of Michigan*; Y. Shen, *Univ. of Michigan*; Z. Feng, *Univ. of Michigan*; D. Komma, *Univ. of Michigan*; S. Jeong, *Univ. of Michigan*; Q. Zhang, *Univ. of Michigan*; A. Bejarano-Carbo, *Univ. of Michigan*; J. Tang, *Univ. of Michigan*; C.-W. Tseng, *Univ. of Michigan*; G. Tao, *Univ. of Michigan*; Y. Yue, *Univ. of Michigan*; T. Jang, *ETH Zürich*; H.-S. Kim, *Univ. of Michigan*; D. Blaauw, *Univ. of Michigan*

254AB

Tu4B: mm-Wave Front-End Building Blocks for Signal Amplification and Generation

Chair: Marco Vigilante, *Qualcomm*
Co-Chair: Sensen Li, *University of Texas at Austin*

15:40 – 15:50

Tu4B-1: Design and Comparison of Two SiGe Complementary Millimeter-Wave Power Amplifiers

W. Ma, *Nankai Univ.*; W. Wang, *Nankai Univ.*; F. Wang, *Nankai Univ.*; H. Xu, *Nankai Univ.*; X. Wang, *Nankai Univ.*

16:00 – 16:10

Tu4B-2: A Millimeter-Wave Frequency Reconfigurable Dual-Band T/R Front-End for 2.5:1 VSWR-Resilient in Tx Operation

Z. Hu, *SCUT*; Y. Lin, *SCUT*; W. Rao, *SCUT*; L. Gao, *SCUT*; X.Y. Zhang, *SCUT*

16:20 – 16:30

Tu4B-3: A 47-to-100GHz Oscillator-Embedded Artificial Transmission Line Based LO Generator Achieving Averaged FoMt of -193.7dBc/Hz

W. Sun, *Univ. of California, Los Angeles*; B. Fallahi Motlagh, *Univ. of California, Los Angeles*; B. Yan, *Univ. of California, Los Angeles*; A. Babakhani, *Univ. of California, Los Angeles*

16:40 – 16:50

Tu4B-4: A Blocker-Tolerant K-Band LNA with 52-dB Ka-Band TX Rejection for Satellite Communications

H. Sun, *UESTC*; C. Zhao, *UESTC*; Y. Yu, *UESTC*; H. Liu, *UESTC*; Y. Wu, *UESTC*; K. Kang, *UESTC*

17:00 – 17:10

Tu4B-5: A General-Purpose Schematic-Layout Co-Optimization Platform for RFIC Design Demonstrated with a 1.7-dB-NF 12–28GHz LNA

Y. Tao, *Sun Yat-sen Univ.*; X. Meng, *Sun Yat-sen Univ.*; P. Bai, *Sun Yat-sen Univ.*; J. Ouyang, *Sun Yat-sen Univ.*; B. Chi, *Tsinghua Univ.*

257AB

Tu4C: Advances in Devices and Circuits for System Integration

Chair: Matilda Livadaru, *RTX*
Co-Chair: Florian Voineau, *STMicroelectronics*

15:40 – 15:50

Tu4C-1: Accurate, High Coverage On-Chip Built-In Self-Test Adopting Precision-Enhanced Power Detection and Multipath Loopback for mmWave Radar IC Measurements

D. Kim, *Samsung*; K. Kim, *Samsung*; G. Park, *Samsung*; G. Baek, *Samsung*; B.-T. Moon, *Samsung*; H.-C. Park, *Samsung*; C.-H. Park, *Samsung*

16:00 – 16:10

Tu4C-2: Dual-Mode Circular Cavity Filters via Azimuthal Wave Propagation

M. Bakr, *Univ. of Oxford*; S. Amari, *Univ. of Oxford*; U. Rosenberg, *Mician Global Engineering*

16:20 – 16:30

Tu4C-3: Sub-60fs RFSOI Switch Performances in Advanced 200mm 130/65nm Hybrid Technology

R. Bousmaha-Jouve, J. Dura, J. Amouroux, *STMicroelectronics*; P. Masson, *Polytech'Lab (EA 7498)*; R. Vauche, *IM2NP (UMR 7334)*; F. Gianesello, *STMicroelectronics*; W. Rahajandraibe, *IM2NP (UMR 7334)*; J. Babic, R. Laire, *STMicroelectronics*; F. Haddad, *IM2NP (UMR 7334)*; P. Fornara, F. Julien, C. Charbuillet, A. Fleury, *STMicroelectronics*

16:40 – 16:50

Tu4C-4: A 9–11GHz Multistage Switched-Capacitor Delay Element and Signal Repeater Achieving 4.6–71.4ns Delay and 40dB Gain

T. Forbes, *Sandia National Laboratories*; B. Magstadt, *Sandia National Laboratories*; R. Costanzo, *Sandia National Laboratories*; J. Moody, *Sandia National Laboratories*

255

Tu4J: Transceiver Architectures for Ultra-Low Power IoT

Chair: Pierluigi Nuzzo, *University of California, Berkeley*
Co-Chair: Yao-Hong Liu, *IMEC*

15:40 – 15:50

Tu4J-1: A 2.4GHz 369-µW Low-Latency WuRX with Voltage-to-Frequency Digital Demodulation and Bit-Error Correction

H. Zhang, *Tianjin Univ.*; D. Liang, *Tianjin Univ.*; L. Ma, *Tianjin Univ.*; Z. Ma, *Tianjin Univ.*; Q. Li, *Tianjin Univ.*; K. Wang, *Tianjin Univ.*

16:00 – 16:10

Tu4J-2: A Battery-Less Crystal-Less Event-Driven UWB Tag with Hybrid Power Management Network and PI-CDR-Based Wake-Up Receiver

B. Wang, *Xidian Univ.*; R. Zhou, *Xidian Univ.*; J. Yang, *Xidian Univ.*; X. Xiong, *Xidian Univ.*; M. Zhang, *Xidian Univ.*; N. Shi, *Xidian Univ.*; X. An, *Xidian Univ.*; Z. Zhu, *Xidian Univ.*

16:20 – 16:30

Tu4J-3: An 802.11b-WiFi Backscatter Modulator Featuring 30dB PSLR with All-Digital Gaussian Pulse Shaping

Y. Zhang, *Tongji Univ.*; M. Meng, *Tongji Univ.*

16:40 – 16:50

Tu4J-4: A Fully Integrated 2.4GHz BLE Transmitter with ADPLL and Class-G Switched-Capacitor PA Achieving 30% System Efficiency

C.-H. Hsu, *NYCU*; Y.-C. Hsiao, *NYCU*; Y.-C. Yang, *Realtek Semiconductor*; S.-C. Tu, *Realtek Semiconductor*; Y.-C. Shih, *Realtek Semiconductor*; K.-U. Chan, *Realtek Semiconductor*; Y.-T. Liao, NYCU

151AB

Tu4H: Load Modulated and High Efficiency Power Amplifiers

Chair: Wing Shing Chan, *CityUHK*
Co-Chair: Peter Asbeck, *University of California, San Diego*

Tu4H-1: KEYNOTE: Orthogonal LMBA: A Flexible PA Architecture for Broadband Tunable Operation

R. Quaglia, *Cardiff University*

Tu4H-2: A Mode-Reconfigurable Power Amplifier with Hybrid Coupler for Enhanced VSWR Resilience

T. Torii, *Mitsubishi Electric*; K. Nakatani, *Mitsubishi Electric*; S. Sakata, *Mitsubishi Electric*; S. Shinjo, *Mitsubishi Electric*

Tu4H-3: Multi-Band Balanced-to-Doherty Reconfigurable High-Q-Filtering Power Amplifier

A.D. Santiago-Vargas, *Purdue Univ.*; M.F. Hagag, *Military Technical College*; D. Peroulis, *Purdue Univ.*; K. Chen, *Northeastern University*

Tu4H-4: A Gain-Enhanced Outphasing Power Amplifier

R. Mannion, *University of Colorado Boulder*; B. Rautio, *University of Colorado Boulder*; G. Gomez, *University of Colorado Boulder*; T. Barton, *University of Colorado Boulder*

Tu4H-5: A 10–15GHz BiCMOS Power Amplifier for 6G NR FR3 Band with 27.3dBm PSAT and 33% PAE

D. Pecile, *Università di Padova*; A. Gambarucci, *Infineon Technologies*; S. Kokorovic, *Infineon Technologies*; L. Marzocchella, *Infineon Technologies*; A. Bevilacqua, *Università di Padova*

Tu4H-6: A 16.5–31.6GHz Broadband Bidirectional Front-End with 16.1dBm OP1dB and 26.8% PAEOP1dB in 40nm Bulk CMOS

Z. Luo, *Fudan Univ.*; J. Gu, *Fudan Univ.*; H. Qin, *Fudan Univ.*; X. He, *Fudan Univ.*; K. Hu, *Fudan Univ.*; K. Han, *Jiashan Fudan Institute*; H. Xu, *Fudan Univ.*; N. Yan, *Fudan Univ.*

153AB

Tu4I: Circuit and System Design Automation using AI and Advanced Techniques — Session Honoring Vladimir G. Gelnovatch

Chair: José E. Rayas-Sánchez, *ITESO*
Co-Chair: Marco Pirola, *Politecnico di Torino*

Tu4I-1: KEYNOTE: RF Digital Twins: Trading Off Fidelity and Performance Across Models, Simulation Tools, and Hardware Measurements

G. Zucchelli, *MathWorks*

Tu4I-2: End-to-End AI and Transfer Learning-Based Power Amplifier Synthesis Considering Layout and PVT Effects

L. Mendes, *Instituto de Telecomunicações*; P. Paiva, *Univ. de Lisboa*; J.C. Vaz, *Instituto de Telecomunicações*; R. Martins, *Instituto de Telecomunicações*; F. Passos, *Univ. de Lisboa*

Tu4I-3: Redundancy-Guided Active Data Construction for Efficient ML-Assisted Microwave Design

W. Jiang, *Nanjing Univ.*; M. Liu, *Nanjing Univ.*; L. Du, *Nanjing Univ.*; J. Guo, *Nanjing Univ.*; Y. Du, *Nanjing Univ.*

Tu4I-4: Tracing Multi-valued Responses in Nonlinear Systems by Linking a Commercial HB Simulator to a Simplicial Algorithm

Almudena Suarez, *Universidad de Cantabria*; Robert Melville, *EMECON LLC*; Franco Ramirez, *Universidad de Cantabria*

Tu4I-5: Advances in Pixelated 2D Electromagnetic Optimization with Distributed and Lumped Devices for Microwave Circuit Design

W. Zhang, *Politecnico di Torino*; C. Ramella, *Politecnico di Torino*; M. Pirola, *Politecnico di Torino*; Q.-J. Zhang, *Carleton Univ.*

Tu4I-6: Scalable and Rapid Design of Pixelated Passive Networks via S-Parameter Matrix Synthesis and Cascaded Deep Learning

J. Hu, *UESTC*; P.-L. Chi, *NYCU*; T. Yang, *UESTC*

15:40
15:50
16:00
16:10
16:20
16:30
16:40
16:50
17:00
17:10
17:20

TUESDAY

NEW FOR 2026! RF SYSTEMS DIALOGUE

As part of RFSA, we are excited to debut the new RF Systems Dialogue which, this year, will focus on ISAC. Integrated Sensing and Communication (ISAC) is redefining the future of RF and microwave systems by combining radar and wireless communications into a cohesive platform. This technological shift unlocks new capabilities for autonomous systems, smart environments, industrial monitoring, while laying the foundation for next-generation, sensing-aware wireless communication systems.

Invited Session: "Integrated Sensing and Communication (ISAC)—Enabling the Future of Radar and Wireless Systems"

15:55 – 17:15 | TUESDAY, 9 JUNE 2026 | ROOM: 253ABC

Chair: Jungah Lee, *Aura Intelligent Systems, Inc.* | **Co-Chair: Ken Kołodziej,** *MIT Lincoln Laboratory*

Abstract: Integrated Sensing and Communication (ISAC) is a key enabler for platforms that jointly support radar sensing and wireless communications. This invited session presents an end-to-end view of ISAC, spanning national priorities and funding directions, spectrum access and coexistence, and the emerging 6G infrastructure and standardization landscape. The talks highlight recent advances from modeling and waveform design through proof-of-concept systems, and connect these to high-impact applications in security and industrial domains including manufacturing, health, and robotics. Each invited presentation includes Q&A.

Speakers:

ISAC as a Platform
Martin Weiss, *FutureG Applied Research OUSD (R&E)*

Seeing the Spectrum: GPU-Accelerated ISAC for Secure, 5G-Enabled Spectrum Agility and Dynamic Coexistence
Venki Ramaswamy, *MITRE*

ISAC for 5G and Beyond
Young-Han Nam, *Samsung*

ISAC for 6G: From Channel Models and Waveform Design to Proof-of-Concept Systems
Harish Viswanathan, *Nokia*

Evening Panel Session: The Rise of ISAC—Opportunity or Hype?

17:30 – 19:00 | TUESDAY, 9 JUNE 2026 | ROOM: 253ABC

Abstract: This is the moment to ask the uncomfortable questions:
- Are we simply relabeling multifunction radios, or is there something fundamentally new about ISAC?
- Will ISAC live mainly in standards and marketing brochures, or will it become a must-have capability in mainstream devices?
- Where is the real value: cost savings, spectrum efficiency, new services, or something else?

Moderator: Fred Schindler, *Independent Consultant*

Panelists:

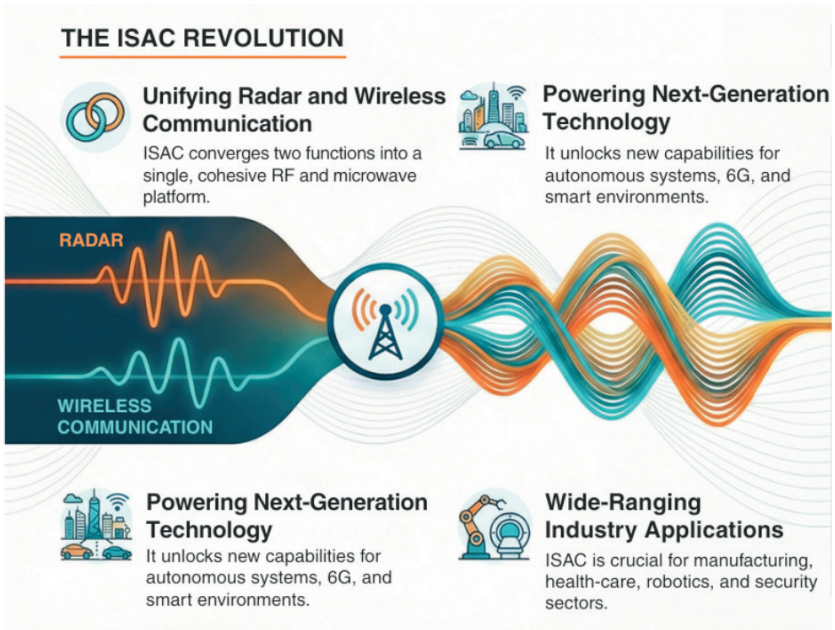
Victor Lubecke, *University of Hawaii*

Steve Papa *Parallel Wireless*

Maryam Rofougaran, *Movandi*

Kumar Vijay Mishra, *University of Maryland*

Hossein Moiin, *ORAN Development Company*



Sponsored By: RF GlobalNet

TUESDAY

WIM/YP Panel Session: "How to Make Waves: Mentorship, Sponsorship, and Advocacy for Advancing Women & Young Professionals in Microwave Engineering"

17:00 – 18:00 | TUESDAY, 9 JUNE 2026 | ROOM: 256

Abstract: Panelists will share their insights on how they would differentiate among the three categories in definition and when to seek them out for assistance. Questions will include: How important have they found mentorship? How can advocates help us get recognition and be seen more fully for our contributions and accomplishments? Along with discussion, the panelists' will share personal stories and anecdotes as well as advice with the audience.

Moderators: Jennifer Byford, *MIT Lincoln Laboratory;* **Gerald DeJean,** *Raytheon*

Panelists:

Carrie Huguenin, *MIT Lincoln Laboratory*	**Siddhartha (Sid) Ghosh,** *Northeastern University*	**Charlotte Blair,** *Synopsys*	**Najame Ebrahimi,** *Northeastern University*	**Michelle Hauer,** *Raytheon*

WOMEN IN MICROWAVES

Young Professionals in Microwaves

STUDENT-INDUSTRY-ACADEMIA RFICHAT:

17:30 – 19:00 | TUESDAY, 9 JUNE 2026 | ROOM: 259AB

This social event on Tuesday is open to all registrants! This panel discussion about "Catching the Next Wave – How to Spot the Next Big Thing and Make the Jump," is designed to help students and professionals navigate career opportunities in the RF field. The session will conclude with networking and complimentary food/beverages for everyone.

Amateur (HAM) Radio Reception: 18:00-20:30

All radio amateurs and other interested IMS participants are cordially invited to the event. The reception schedule is as follows:

18:00–18:30
A social mixer with provided food and drinks. Bring your QSL card to exchange.

18:30–19:30
Invited presentation on the new FlexRadio Aurora by Tony Brock-Fisher K1KP.

19:30–20:30
Special topic booths on the many facets of amateur radio and information on how you can "get on the air" (including getting your FCC amateur radio license).

INSTITUTE OF CONTEMPORARY ART (ICA) BOSTON

Women in Microwaves (WIM)

Reception: 18:30-20:30

This event welcomes all members of IMS to promote collaboration, with a spotlight on the work of female RF engineers and researchers. We will continue our traditional social cocktail party, which grows yearly. The reception will also feature social networking opportunities, games, and more!

Sponsored By:

Microwaves&RF Military+Aerospace Electronics

FLIGHT CLUB DARTS

Young Professionals (YP's)

Reception: 18:30-20:30

Located in the Seaport neighborhood just south of downtown Boston, Flight Club is an upscale entertainment concept combining elevated food and beverage menus with dynamic tech-enabled Social Darts®.

What is Social Darts®? Fast-paced multiplayer games, groundbreaking tracking technology, and instant scoring built to bring people together, whether you're a rookie or a self-proclaimed pro!

Sponsored By:

Microwaves&RF Military+Aerospace Electronics

WESTIN BOSTON SEAPORT HOTEL, GRAND BALLROOM, SECTION A

MTT-S Journals Reception and Poster Session: 19:00-21:00

Please join us on Tuesday evening for our annual "MTT Journals Reception and Poster Session."

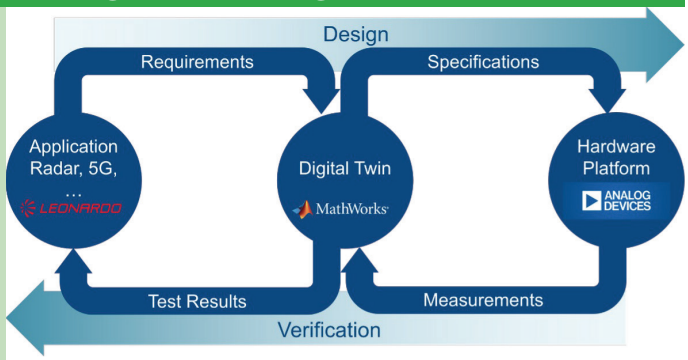
Don't miss this opportunity to learn more about our publications and to interact with our Editors and Board members. Get your questions answered and give your feedback – positive and negative – directly to those who handle your manuscripts or who are constantly asking for more and more of your precious time to do reviews! We can't wait to see you for the first time, or to meet you again in Boston at this flagship event.

NEW FOR IMS2026! RF SYSTEMS PAVILION

Featuring live systems demonstrations for radar and communications.
Join us in Booth 20088! Demos available all Exhibition hours.

Demonstration #1: Radar

Beyond the Datasheet: System-Level RF Insight with Digital Twins



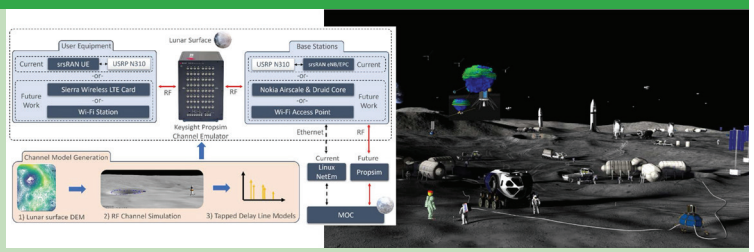
Reaching a complete and confident RF system design solution remains a slow, manual, and iterative process for many engineers. Traditional approaches—analyzing product datasheets, performing isolated small-signal simulations, or relying on repeated rounds of lab prototyping—often lack the system-level insight needed to understand true performance in real-world conditions. As RF architectures grow more complex and mission profiles become more demanding, the need for clear, application-specific design visibility has never been greater.

Digital twins offer a path to design clarity. Unlike standalone simulations of individual components, digital twins evaluate system-level behavior for specific applications and use cases. Analog Devices' digital twin models are virtual representations of ADI RF components and ICs, developed natively in the MATLAB and Simulink environment. This environment enables full-system performance evaluation early in the design process, allowing engineers to explore architectures, assess trade-offs, identify risks, and accelerate decision-making before committing to hardware. Beyond modeling and simulation, digital twins establish a digital thread that supports design and verification, connecting requirements, design decisions, measurements, and results throughout the supply chain, thereby enabling rapid and unambiguous communication between component manufacturers and system integrators.

For IMS2026, the RF Systems Pavilion demo highlights how companies leverage ADI digital twin models within MATLAB and Simulink to simulate their applications. This includes a demo from Leonardo UK showcasing how they simulate a radar system's probability-of-detection performance. Their workflow demonstrates how digital twins enable mission-level evaluation—translating component-level behavior into meaningful system outcomes. Attendees will be able to view simulation videos running continuously throughout the three-day event and engage directly with staff from Analog Devices, MathWorks, and Leonardo to discuss model construction techniques, model fidelity, simulation capabilities, and application-specific insights. In addition to the looped content, a live demo session will be held once per day to support deeper technical interaction for larger audiences.

Demonstration #2: Communications:

A Lunar Surface Communications Testbed: Validate Lunar RF Systems—Before You Launch



As NASA's Artemis program establishes a sustained human presence on the Moon, reliable surface communications are mission-critical. While technologies like Wi-Fi and 3GPP (4G/5G) are proven on Earth, the lunar RF environment is harsher, unfamiliar, and impossible to fully field-test ahead of time. This demo features the NASA Glenn Research Center Emulation and Modeling (GEM) Testbed—a hardware-in-the-loop RF validation platform that brings realistic lunar surface communications testing into the lab.

What This Demonstration Shows:
The GEM Testbed enables engineers and mission planners to predict and validate end-to-end communications performance for lunar surface operations using: ·

- Physics-based RF channel modeling and ray tracing
- High-fidelity lunar digital terrain environments
- Commercial hardware RF channel emulation
- Real 3GPP and Wi-Fi radios and network stacks

The result: **real hardware operating over realistic lunar surface RF channels—** without field testing or flight risk.

Reduce risk. Save cost. Move faster.

- Eliminate early lunar field trials. Replace expensive analog testing with repeatable, lab-based validation.
- Predict real lunar performance. Evaluate coverage, throughput, latency, shadowing, and multipath elects.
- Accelerate system design. Rapidly swap radios, stacks, and configurations—COTS or research-grade.
- Enable smarter mission planning. Analyze EVAs, surface traverses, landing sites, and network layouts before deployment.

Built for Lunar Surface Missions, but applicable to any terrestrial setting

- Site-specific lunar terrain and RF propagation
- Hardware-in-the-loop realism—not simulation only
- Designed for **surface-to-surface lunar communications**
- Scalable from early demos to future lunar infrastructure

A Collaborative Effort

This demonstrator is a collaboration between:

- **NASA Glenn Research Center** – Lunar communications research and system validation
- **Ansys (part of Synopsys)** – High-fidelity RF and digital mission modeling
- **Keysight Technologies** – Hardware RF channel emulation and measurement

Together, they deliver an end-to-end digital-to-hardware workflow for validating wireless systems in extreme lunar environments.

TUESDAY

INDUSTRY WORKSHOPS | 08:00 – 17:20 | WEDNESDAY, 10 JUNE 2026

SESSION CODE	TIME & LOCATION	TITLE AND ABSTRACT	SPEAKER(S), AFFILIATION
IWWe1	08:00 – 09:40 Room: 152	**Beamforming in Action: From Simulation to Hardware, an end to end phased array workflow with the ADXBAND16EBZ Development Platform and MATLAB —** This workshop showcases the development of a phased array system for direction-of-arrival (DoA) estimation and beamforming, leveraging the Analog Devices Quad-Apollo ADXBAND16EBZ platform integrating with MATLAB. Participants will explore MATLAB-based hardware interfacing, array simulation for initial algorithm development (MUSIC and MVDR), and hardware-in-the-loop approaches to test algorithms in a controlled environment while contending with difficulties that come when working with real hardware. The workshop culminates in an over-the-air demonstration using a 16-element uniform rectangular array connected to the Quad-Apollo, highlighting array processing techniques with real signals. Attendees will gain practical insights into bridging algorithm design, simulation, and hardware implementation.	George Mencoff, *Mathworks*; Siddhartha Das, *Analog Devices*; Sam Ringwood, *Analog Devices*; Honglei Chen, *Mathworks*
IWWe2	08:00 – 09:40 Room: 154	**Engineering Challenges & Solution Deployment for High-Speed Signal Design Beyond 200 Gbps in Data Centers & Backplanes —** As serial link data rates push past 200 Gbps, precise characterization of high-speed interconnects becomes critical. traditional measurement approaches are increasingly limited by fixture effects, probe parasitic, and frequency-dependent losses that can mask true device performance. A glance at advanced de-embedding techniques that separate the behavior of test fixtures and measurement equipment from the device under test, enabling accurate modeling and validation at extreme bandwidths will be open for discussion. This workshop bring together researchers, system architects and test labs to address multidisciplinary engineering challenges and near-term deployment solutions for electrical and mixed electrical-optical interconnects operating beyond 200 Gbps.	Cristian Filip, *AMD;* Sameh Elnaggar, *Semtech;* Wade Smith, *Synopsys Inc.;* Laila Salman, *Synopsys, Inc.;* Harshpreet Bakshi, *Texas Instruments;* Kenneth Change, *Jitx*
IWWe3	10:10 – 11:50 Room: 152	**Architecture and Applications for Emerging SATCOM and NTN Communication Networks —** Low earth orbit (LEO) communications constellations have radically changed the space communications industry. Emerging Satellite Communication (SatCom) applications like broadband internet access in remote areas, enhanced emergency response systems, and vehicle and object tracking, amongst other, are all driven by advancements in high-throughput satellites (HTS) and smaller, more affordable satellite technologies. These networks require new ecosystems that support a wide range of terminals with different cost, performance, and ruggedization requirements. This workshop provides a top-to-bottom review of the ecosystem for LEO satellite communication networks: Market trends, system requirements, applications and practical solution implementations.	Dean White, *Qorvo*; Assaf Toledano, *Qorvo*; Ryan Jennings, *Qorvo*; Assaf Toledano, *Qorvo*; Ryan Jennings, *Qorvo*
IWWe4	10:10 – 11:50 Room: 154	**Keeping up with the Wireless G's: Role of Software Defined Radios and Standard Interfaces —** This workshop explores the evolution of wireless standards from 2G to 6G, highlighting the economic impact on network operators, equipment vendors, and semiconductor providers. We examine how software-defined radios (SDRs) have adapted to each generation and the role of standard interfaces in enabling scalable, efficient development. The session concludes with a real-world example from Analog Devices, showcasing an SDR transceiver integrated with signal processing and physical layer functionality aligned with the open radio access network (O-RAN) standard.	Hossein Yektaii, *Analog Devices*; Kevin Gard, *Analog Devices*; Nehal Parikh, *Analog Devices*
IWWe5	13:30 – 15:10 Room: 152	**From Bits to Beams: Analog Devices' Progression to Scalable Full System Solutions for Advanced Wireless Infrastructure —** As demand grows for high-frequency, high-bandwidth wireless connectivity, system designers face challenges balancing performance, power efficiency, and thermal management. This workshop explores Analog Devices' mmWave technology evolution—from discrete RF components to integrated reference designs—highlighting solutions across generations of analog beamforming, frequency conversion, and frequency generation. Attendees will learn how ADI's system-level innovations enable higher linear output power while maintaining strict power limits, reducing thermal complexity. Through technical discussions, design examples, and benchmarks, the session demonstrates how ADI's scalable mmWave solutions accelerate development and meet the demands of next-generation wireless infrastructure including 5G FR2, FWA, and satellite communications.	Kasey Chatzopoulos, *Analog Devices*; Taz Thahirally, *Analog Devices*; Amr Sherief, *Analog Devices*
IWWe6	13:30 – 15:10 Room: 154	**The Dynamic Duo – Software Defined Radio (SDR) & Software Defined Modem (SDM) —** Join our diverse team of engineers and discover how ADI's first ever Software Defined Modem, integrated into the Nevis Narrowband Transceiver, is enabling smaller, lighter, and lower power radios than ever before while still delivering state of the art RF performance. This workshop combines theory with real-world performance data and real-time demonstrations to illustrate how users can leverage Nevis to advance the state of the art in their own radio designs. As a practical example, ADI will present how the combination of an SDR & SDM is being leveraged to create a new generation of Land Mobile Radios.	Matthew Hazel, *Analog Devices, Inc.*; Haijiao Fan, *Analog Devices, Inc.*; Deniss Svetlitsnoi, *Analog Devices, Inc.*; Manusri Viswanathan, *Analog Devices, Inc.*

ADVANCING RF & MICROWAVE DESIGN with TRUSTED INSIGHTS and SOLUTIONS

Whether you're looking for cutting-edge technology, the latest business developments, engineering reference data, or hot new products, Photonics Online has all the information you need. Photonics Online delivers the latest information about the laser, optics, optoelectronics, fiber optics, and imaging industries. Our site is structured to serve the needs of designers, engineers, system integrators, product specifiers, technical managers, business executives, consultants and OEM manufacturers.

Whether you're an RF/microwave design engineer, engineering manager, system integrator, or any other role involved in the design and development of RF/microwave systems, wireless systems, military devices, and other commercial communication systems, RF Globalnet is the most accurate and convenient technical source of design and product information available.

SCAN THE QR CODE TO JOIN THE COMMUNITY

RF Globalnet

(724) 940-7555 | RFGLOBALNET.COM

Microwaves&RF

Electronic Design

Military+Aerospace Electronics

Trusted Insights for Your Business

Microwaves & RF

The independent microwaves & RF technology information source, providing information and resources for specialists in high-frequency electronic design. Our editors write about:

- Test & Measurement
- Communications
- Defense
- Analog
- Embedded Technologies
- And more!

Electronic Design

The premier independent information source for electronics engineers, programmers and designers. We provide fully comprehensive coverage of the electronics industry, including:

- Power & Analog
- Embedded Technologies
- IoT/IIoT, Wired, and Wireless Communications
- Test & Measurement
- Components
- And more!

Military + Aerospace Electronics

A print and digital brand dedicated to bringing you the essential news and insights on defense and aerospace electronic technologies. Topics we cover include:

- RF/Analog
- Communications
- Power
- Trusted Computing
- Sensors
- And more!

Join the Community Today

Microwaves & RF, Electronic Design, and Military + Aerospace Electronics are part of *Endeavor B2B's Engineering Design and Automation* group. We have a great community of engineers, designers, developers, operators, and other professionals who work on the development lifecycle of engineered systems.

Our brands offer free eNewsletters, technical white papers, expert-led webinars, websites full of news and actionable content, and more!

Learn more about these brands by scanning the QR code, or go to **www.mwrf.com/learnmore**

252AB

We1A: From Implants to 5G: Technologies and Systems for Wireless Power Transfer

Chair: Ifana Mahbub, *University of Texas at Dallas*
Co-Chair: Naoki Hasegawa, *Softbank*

We1A-1: KEYNOTE: Sub-GHz Simultaneous Wireless Information and Power Transfer Using Distributed Antenna System

Y. Tanaka, *Panasonic*

We1A-2: High-Efficiency Inductive Powering and Auto-Localization of CMOS Brain Implants by a Wearable Metasurface and Coupled Matching

Mohammad Abdolrazzaghi, *Univ. of Toronto*; Roman Genov, *Univ. of Toronto*; George Eleftheriades, *Univ. of Toronto*

We1A-3: A Flexible, Tileable Phased Array Enabled by CMOS Beamformers

A. Ayling, *Caltech*; S. Nooshabadi, *Caltech*; Z. Szekeres, *Caltech*; S. Samaga, *Caltech*; O. Mizrahi, *Caltech*; A. Hajimiri, *Caltech*

We1A-4: A Rectifier-Type Mixer for 5G NR Wirelessly Powered Relay Transceiver with Optimizable Rectification and Mixing

A. Hirayama, *Science Tokyo*; S. Kato, *Science Tokyo*; K. Yuasa, *Science Tokyo*; S. Date, *Science Tokyo*; T. Tomura, *Science Tokyo*; J. Mayeda, *Science Tokyo*; A. Shirane, *Science Tokyo*

We1A-5: A Self-Powered Antenna Monitoring System for DAS

K. Jin, *Chung-Ang Univ.*; C. Jang, *RF-NISSI*; S. Oh, *RF-NISSI*; S.-S. Han, *Chung-Ang Univ.*; N.J. Kim, *Chung-Ang Univ.*; K. Kim, *RF-NISSI*; H.L. Lee, *Chung-Ang Univ.*

253ABC

We1B: Integrated Components and Subsystems for Radar and Imaging Systems

Chair: Robert Schmid, *Johns Hopkins APL*
Co-Chair: Stavros Vakalis, *University of South Florida*

We1B-1: A 241-271 GHz Sparse MIMO Radar With Antenna-Integrated Transmitter and Receiver Chips

Brian Woods, *MaXentric Technologies, LLC*; Yao Yu, *MaXentric Technologies, LLC*; Ariel Habshush, *MaXentric Technologies, LLC*; Amin Rashidian, *MaXentric Technologies, LLC*; Aditya Muppala, *Univ. of California, Berkeley*; Ehsan Afshari, *Univ. of Michigan*; Toshifumi Nakatani, *MaXentric Technologies, LLC*

We1B-2: FMCW-CDMA Based Radar-Repeater Network for Enhanced Detection and 2D Imaging of Specular Targets

T. Nusrat, *Univ. of South Florida*; S. Vakalis, *Univ. of South Florida*

We1B-3: Range-Adaptive FMCW Radar: Real-Time Adaptation of RF and Baseband for Robust and Energy-Efficient Sensing

J. Park, *Georgia Tech*; M.S. Mohammad, *Georgia Tech*; W.-C. Wang, *Georgia Tech*; S. Mukhopadhyay, *Georgia Tech*

We1B-4: Beyond Imaging: A 256 GHz Superheterodyne FMCW Radar System for 3-D Imaging and Micro-Doppler Based Sound Reconstruction

Ali Ghazizadeh Ghalati, *Univ. of Michigan*; Aditya Varma Muppala, *Univ. of California, Berkeley*; Ali Mosallaei, *Univ. of Michigan*; Morteza Tavakolitaba, *Univ. of Michigan*; Behzad Yektakhah, *Univ. of Michigan*; Kamal Sarabandi, *Univ. of Michigan*; Ehsan Afshari, *Univ. of Michigan*

We1B-5: Low-Loss and Wideband Dielectric Resonator Antenna on System-in-Package for 60GHz Radar Applications

S. Kim, W. Lee, Y. Lee, S. Jung, D. Choi, K. Yoo, J. Kim, D. Choi, H.-S. Lim, C.-H. Park, *Samsung*

We1B-6: A Calibration-Free FMCW Synthesizer for Automotive Radar with Fast Frequency Modulation and Reset Ability

J. Vovnoboy, *Indie Semiconductor*; T. Heller, *Indie Semiconductor*; Y. Horesh, *Indie Semiconductor*; M. Grubman, *Indie Semiconductor*; D. Malowany, *Indie Semiconductor*

254AB

We1C: Signal and System Characterization

Chair: Jon Martens, *Anritsu*
Co-Chair: Xiaobang Shang, *National Physical Laboratory*

We1C-1: Assumption-Free Active Calibration of mm-Wave Phased Arrays using Excitation Estimation via Far-field Measurements

Mohammad Abdollah Chalaki, *Univ. of Waterloo*; Ahmed Ben Ayed, *Univ. of Waterloo*; Patrick Mitran, *Department of ECE, University of Waterloo*; Slim Boumaiza, *Univ. of Waterloo*

We1C-2: Over-the-Air Measurement of Distortion Error-Vector-Magnitude in a Reverberation Chamber

T. Niubó-Alemán, *Keysight Technologies*; A.J. van den Biggelaar, *ANTENNEX*; R. Budé, *ANTENNEX*; A. Hubrechsen, *ANTENNEX*; J. Verspecht, *Keysight Technologies*

We1C-3: Cross-Correlation-Based Absolute and Residual Phase Noise Measurements on Chirped Pulses

W. Wendler, *Rohde & Schwarz*; A. Roth, *Rohde & Schwarz*; B. Gäde, *Rohde & Schwarz*; J. Kornprobst, *Rohde & Schwarz*

We1C-4: Deep-Learning-Based Pixelated Microwave Filter Design and Characterization Using Electro-Optical Electric-Field Measurements

H. Zhou, *Chalmers Univ. of Technology*; R. Bannister, *Univ. of Surrey*; C. Pierce, *Univ. of Surrey*; H. Chang, *Chalmers Univ. of Technology*; D. Widén, *Chalmers Univ. of Technology*; L. Fornstedt, *Chalmers Univ. of Technology*; G. Melin, *Chalmers Univ. of Technology*; A. Bohlin, *Chalmers Univ. of Technology*; P. Lindeberg Fredriksson, *Chalmers Univ. of Technology*; D. Singh, *NPL*; C. Fager, *Chalmers Univ. of Technology*; K. Buisman, *Univ. of Surrey*

257AB

We1D: Advanced RF Sensing Simulation and Technologies

Chair: Victor M. Lubecke, *University of Hawaii*
Co-Chair: Mohammad H. Zarifi, *University of British Columbia*

We1D-1: KEYNOTE: Advanced Simulation Tools for Satellite Coverage and Interference Analysis

C.J. Reddy, *Siemens*

We1D-2: Enabling Broadbeam Performance in Planar Backscatter Tags: A Semi-Passive Metalens-Enhanced mmID for Ambient IoT Environments

M. Joshi, *Georgia Tech*; C.A. Lynch III, *Georgia Tech*; K. Hu, *Georgia Tech*; G. Soto-Valle, *Georgia Tech*; M.M. Tentzeris, *Georgia Tech*

We1D-3: Multimode Dielectric Waveguide Ring Resonator for Radar-Based Real-Time Emulsion Monitoring

K. Dausien, *Ruhr-Universität Bochum*; N. Pohl, *Ruhr-Universität Bochum*; C. Schulz, *Ruhr-Universität Bochum*; J. Barowski, *Ruhr-Universität Bochum*; I. Rolfes, *Ruhr-Universität Bochum*

We1D-4: Microwave Patch Antenna with SnO_2-Filled Grounded Vias for Passive RFID Hydrogen Sensing

A. Pandey, *Univ. of Bologna*; G. Paolini, *Univ. of Bologna*; D. Masotti, *Univ. of Bologna*; A.K. Saurabh, *MNNIT Allahabad*; A. Costanzo, *Univ. of Bologna*

We1D-5: Two-Port-Quasi-Reflectionless Microwave Linear-Displacement Sensor Using a Balanced-Circuit Architecture

Zekai Luo, *Xiamen University of Technology*; Li Yang, *South China Univ. of Technology*; Roberto Gómez-García, *Univ. of Alcala*

08:00
08:10
08:20
08:30
08:40
08:50
09:00
09:10
09:20
09:30
09:40

151AB

We1E: Special Keynote Session: Qubit Technologies and Microwave Control and Readout Circuits for Future Fault-Tolerant Large-Scale Quantum Processors

Chair: Sorin Voinigescu, *University of Toronto*
Co-Chair: Elena Blokhina, *University College Dublin*

We1E-1: KEYNOTE: Cryoelectronics for Scalable Ion-Trap Quantum Control

F. Fahim, *Fermilab*

We1E-2: KEYNOTE: Readout Chip Design and Packaging Challenges to Enable Scalable Quantum Computing

J.-O. Plouchart, *IBM*

We1E-3: KEYNOTE: Cryogenic CMOS and Silicon Spin Qubits for Fault-Tolerant Quantum Computing

S. Pellerano, *Intel*

We1E-4: KEYNOTE: Scaling CMOS Spin Quantum Processors using Superinductors

A.L. Gómez Saiz, *Quantum Motion*

We1E-5: KEYNOTE: Leveraging Scalable Semiconductor Manufacturing for a Multi-Core Full-Stack QSoC on the Road Toward Quantum Utility

D. Redmond, *Equal1*

153AB

We1F: High-Power Doherty Power Amplifiers

Chair: Taylor Barton, *University of Colorado*
Co-Chair: Anna Piacibello, *Politecnico di Torino*

We1F-1: KEYNOTE: Broadband Energy-Efficient Integrated PA MMIC for 5G/6G Applications

W. Chen, *Tsinghua Univ.*

We1F-2: A 6.4–7.2GHz Gain-Enhanced GaN MMIC Doherty Power Amplifier Based on Adaptive Power Divider for 6G Applications

S. Wan, *Tsinghua Univ.*; Y. Yang, *Tsinghua Univ.*; G. Lv, *BIT*; W. Chen, *Tsinghua Univ.*; Z. Feng, *Tsinghua Univ.*

We1F-3: Deep Learning-Driven Inverse Design of Doherty Power Amplifiers Using Pixelated Combiners and Dual-State Impedance Synthesis

H. Zhou, *Tampere Univ.*; H. Chang, *Chalmers Univ. of Technology*; D. Widén, *Chalmers Univ. of Technology*; C. Fager, *Chalmers Univ. of Technology*

We1F-4: A 140W Integrated GaN Doherty Power Amplifier Module Based on a Triple-Tuned Design Method for 5G Massive-MIMO Base-Stations

Y. Chen, *Samsung*; S. Park, *Samsung*; J. Lee, *Samsung*; S. Baek, *Samsung*; T. Kim, *Samsung*; S. Jeon, *Samsung*; H. Kang, *Samsung*; A. Ryu, *Samsung*; S.-G. Yang, *Samsung*

We1F-5: A Broadband Three-Way Continuous-Mode Doherty Power Amplifier with Dual-Resonant Harmonic Injection Network

R. Zhao, *PolyU*; X. Zhou, *PolyU*; W.S. Chan, *CityUHK*; S. Chen, *Hangzhou Dianzi University*

156AB

We1G: Advances in Packaging and 3D Manufacturing Technologies

Chair: Manos Tentzeris, *Georgia Tech*
Co-Chair: Kamal Samanta, *AMWT*

We1G-1: KEYNOTE: Greek Words, Big Technology: The New Language of Advanced Packaging

G. Dogiamis, *Deca Technologies*

We1G-2: Demonstration of an F-Band Heterogeneously Integrated Multi-Chip Downconverter

Caitlyn Cooke, Kevin Leong, Michael Eller, Maxwell Duffy, Nancy Lin, Xiaobing Mei, K.K. Loi, Alfonso Escorcia, Khanh Nguyen, Samuel Esparza, William Deal, *Northrop Grumman Corp.*

We1G-3: Toward 5G Wearables: An Additively Manufactured, Thermoelectric Powered mmID and Integrated Microfluidic pH Sensor

T.W. Callis, *Georgia Tech*; M. Joshi, *Georgia Tech*; G. Soto-Valle, *Georgia Tech*; M.M. Tentzeris, *Georgia Tech*

We1G-4: Redefining Lensing with Adaptive Metastructures: An Ultrawideband Reconfigurable 3D-Printed Metalens for Future Wireless Front-Ends

M. Joshi, *Georgia Tech*; K. Hu, *Georgia Tech*; C.A. Lynch III, *Georgia Tech*; G. Soto-Valle, *Georgia Tech*; M.M. Tentzeris, *Georgia Tech*

We1G-5: Novel 3D Film Laminate Package for High Efficiency 7GHz GaN Power Amplifier Module

H. Shimizu, T. Hashinaga, Y. Moriyama, T. Kawasaki, H. Tango, *Sumitomo Electric*

We1G-6: Packaging and Antenna Design for a 46-Element Dual-Surface mmWave Active STAR-RIS Built with CMOS RFICs

Z. Shao, *Princeton Univ.*; M. Allam, *Princeton Univ.*; W. Fang, *Princeton Univ.*; H. Saeidi, *Qualcomm Technologies*; A. Stepko, *Princeton Univ.*; K. Sengupta, *Princeton Univ.*

157AB

We1H: Advanced Reconfigurable Components and Circuits

Chair: Tarek Djerafi, *INRS-EMT*
Co-Chair: Julien Lintignat, *XLIM and Université de Limoges*

We1H-1: A 2-Stage Cascaded Reflection-Type Group Delay Controller with Large Group Delay Range Using Coupled-Line Transformer

H.-J. Cho, *Yonsei Univ.*; B.-W. Min, *Yonsei Univ.*

We1H-2: BST Based Continuously Tunable Delay Line for Full-Duplex Applications

M. Golcheshmeh, *Univ. of Waterloo*; G. Basavarajappa, *Univ. of Waterloo*; J. Jiang, *Univ. of Waterloo*; R. Mansour, *Univ. of Waterloo*

We1H-3: A 5GHz Frequency-Tunable SiGe Active Isolator Using a Varactor-Controlled Phase Network

J.A. Caezza, *Georgia Tech*; Y.A. Mensah, *Georgia Tech*; C.R. Snyder, *Georgia Tech*; A. Zerbini, *Georgia Tech*; C.T. Coen, *Georgia Tech*; J.D. Cressler, *Georgia Tech*

We1H-4: Full Duplex Filtering Antenna with Nonreciprocal Transmission Characteristic Using SIW and Spatiotemporal Modulation

Y. Ning, *UESTC*; J. Wu, *UESTC*; C. Yi, *UESTC*; Z. Liang, *UESTC*; B. Liu, *UESTC*; P.-L. Chi, *NYCU*; T. Yang, *UESTC*

We1H-5: Frequency Tunable All-Port Reflectionless Nonreciprocal Bandpass Filter Using Spatiotemporal Modulated Resonators

G. Chaudhary, *Jeonbuk National University*; P. Thorng, *Jeonbuk National University*; S. Kim, *Jeonbuk National University*; Y. Jeong, *Jeonbuk National University*

08:00
08:10
08:20
08:30
08:40
08:50
09:00
09:10
09:20
09:30
09:40

WEDNESDAY

MICROAPPS | 09:45 – 17:00 | WEDNESDAY, 10 JUNE 2026 | MICROAPPS THEATER, BOOTH 15122

SESSION CODE	TIME	TITLE	SPEAKER(S), AFFILIATION
WEMA1	09:45 – 10:00	Software Defined Radio (SDR) on a Chip — from Ethernet to RF with an Integrated Processor Sub-system	Hossein Yektaii, *Analog Devices Inc.*
WEMA2	10:02 – 10:17	Fast Electromagnetic Modeling of Superconducting Circuits Used with Quantum Computers and Rapid Single Flux Quantum Designs	Garth Sundberg, *Synopys*
WEMA3	10:19 – 10:43	Simulation Methodology for Co-packaged or Hybrid-bonded Multi-technology 3D RF System in a Single Virtuoso Cockpit	Chris Masse, *Tower Semiconductor*
WEMA4	10:36 – 10:51	Power Integrity in the Era of Advanced Packaging: Changing the Paradigm of FEM	Thomas MacDonald, *ANSYS, Inc.*
WEMA5	10:53 – 11:08	Enabling low cost Wi-Fi SoCs for Defense and Aerospace Applications	Steve Singer, *QORVO, Inc.*
WEMA6	11:10 – 11:55	Startup Panel Session: RF Entrepreneurship in the Age of AI, New Space, and New Defense	Bryan Goldstein, *ADI* Tim Grayson, *BAE Systems*
WEMA7	12:00 – 12:15	MEMS Oscillators for RF Engineers	Raymond Baker, *Richardson RFPD*
WEMA8	12:17 – 12:32	Simulating Receiver Degradation Due to an Adjacent Transmit Signal	Anderson Howard, *Keysight Technologies*
WEMA9	12:35 – 12:50	The Development and Commercialization of a Disruptive High Performance PCB Substrate	John Gardner, *Blueshift*; Garrett Poe, *Blueshift*
WEMA10	12:52 – 13:07	Frequency Controlled Oscillator (FCXO) replaces VCXO in Jitter-Attenuation Applications	Russell Hoppenstein, *Qorvo*
WEMA11	13:09 – 13:24	NASA Presentation	Michael Zemba, *NASA*
WEMA12	13:26 – 13:41	A 5.8 GHz band, Watt-Class, Rectenna for Step-downed Output DC Voltage	Peter Hartshorn, *New Japan Radio*
WEMA13	13:43 – 13:58	Advancing Antenna Simulations with Surrogate Modeling Techniques	Tyler Dodge, *Dassault Systemes;* Apra Pandey, *Dassault Systemes*
WEMA14	14:00 – 14:15	Innovative Antenna Design: Leveraging 3D Printing for Advanced Direction-Finding Applications	Furkan Dayi, *Narda STS*
WEMA15	14:17 – 14:32	Revolutionizing RF AI: Integrating EM Solvers with NVIDIA Omniverse for Real-Time Synthetic Data	Arien Sligar, *Synopsys*
WEMA16	14:34 – 14:49	Streamlining Antenna Placement and Co-Site Analysis on Electrically Large Platforms	Daniel Faircloth, *Nullspace, Inc.*
WEMA17	14:51 – 15:06	Smart Resolution of 3D Component Intersections in Ansys HFSS Mesh Fusion for Streamlined Electromagnetic Simulation of Complex Electronic Assemblies	Juliano Mologni, *Synopsys*; Sara Louie, *Synopsys*Wade Smith, *Synopsys*
WEMA18	15:08 – 15:23	Optimizing Beyond Parameters: Advanced Electromagnetic Design	Dmitry Grudin, *Go Engineer*; Clint Patton, *Go EngineerRishi Silva, Go Engineer*; Tyler Dodge; Dassault Systemes; Apra Pandey, *Dassault Systemes*
WEMA19	15:25 – 15:40	A Systems-to-Microelectronics Engineering Framework with Multiphysics to Bridging System-level Requirements and RF Component Parameters	Vipul Patel, *Ansys Government Initiatives | part of Synopsys*; P. Len Orlando III, *Ansys Government Initiatives | part of Synopsys*
WEMA20	15:42 – 15:57	Optimizing RF Sampling Designs for the n104 Band (>6 GHz)	Ben Uhing, *Texas Instruments*
WEMA21	16:00 – 17:00	IMS Executive Forum — Microelectronics Product Development for Aerospace & Defense on Commercial Timelines	Ishan Sandhu, *Texas Instruments;* Minal Sawant, *AMD;* Bryan Goldstein, *Analog Devices, Inc.;* James Chew, *Intel*

Sponsored By:

INNOVATOR INSIGHTS: THE 5-MINUTE DEEP DIVE

Step into the minds of the experts! Join us at the Startup Pavilion for a series of high-impact, lightning-style sessions where industry pioneers break down complex tech into 5-minute masterclasses on the future of RF and microwave engineering.

12:30-13:40 | WEDNESDAY, 10 JUNE 2026

TIME	Company & Title
12:30	**Philowave**—Interference- Challenges and Technologies
12:40	**JITX**—Taming the Combinatorial Explosion: Scaling SI-Driven Via Optimization with JITX+Ansys+GenAI
12:50	**INCIRT GmbH**—Redefining the Limits of Data Conversion: Power-Efficient Fourier-Domain Data Converters for RF-SoC
13:00	**Flexiramics**—Breaking the Limits of High-Frequency Electronics - Replacing Glass Fiber in PCBs
13:10	**EchoICs**—Flexible Spectrum Radio - Wide Bandwidth Without Compromise
13:20	**Jones Microwave Inc.**—Solid-State Plasma Switching: A New Microwave Technology Platform developed by Jones Microwave Inc.
13:30	**TransEON**—Interface-Engineered GaN Technology for Ultrahigh Power Density Microwave and mm-wave MMICs

IMS2026 has designated Exhibit Only time today from 15:10-17:00!

- 500+ Companies
- RFSA and RFTT Interactive Forum
- Demos in the RF Systems Pavilion
- Headshots in the Societies Pavilion
- Startup Pavilion and Program
- IMS Executive Forum
- MicroApps Sessions
- Game Zone and Networking on the Microwave Boulevard

252AB

We2A: Wireless Power Transfer Subsystems: Rectifiers, Rectennas, and Backscattering-Enabled Hardware

Chair: Kenjiro Nishikawa, *Kagoshima University*
Co-Chair: Jasmin Grosinger, *University of Siegen*

10:10 – 10:20

We2A-1: A Broadband Rectifier with High Dynamic Range Based on Complementary Dual-Branch Structure for Efficient RF Energy Harvesting

K.C. Paul, *Univ. of California, Davis*; H.T. Nguyen, *Univ. of California, Davis*; B.T. Funsten, *LLNL*; A.-V. Pham, *Univ. of California, Davis*

10:30 – 10:40

We2A-2: High-Efficiency 5.8-GHz Rectification Enabled by Doping-Optimized Quasi-Vertical GaN SBDs

Q.-X. Li, *Jiangnan Univ.*; Y. Li, *Jiangnan Univ.*; R.-P. Huang, *Jiangnan Univ.*; X. Zhang, *Jiangnan Univ.*; T. Liu, *Jiangnan Univ.*; X. Wang, *Jiangnan Univ.*; Z.-C. Liu, *Jiangnan Univ.*; Z.-W. Chen, *Jiangnan Univ.*; F.-Q. Jiang, *Jiangnan Univ.*; J.-P. Ao, *Jiangnan Univ.*

10:50 – 11:00

We2A-3: Adaptive Voltage Model for Microwave Energy Harvest

R.-P. Huang, *Jiangnan Univ.*; Y. Li, *Jiangnan Univ.*; T. Liu, *Jiangnan Univ.*; Z.-N. Gu, *Jiangnan Univ.*; J.-P. Ao, *Jiangnan Univ.*

11:10 – 11:20

We2A-4: Single GaN Schottky Diode 5.8GHz Rectifier Module Achieving High Efficiency Over an Extremely Wide RF Input Power Range

A.C. Schumann, S.A. Chevtchenko, A. Wentzel, *FBH*

We2A-5: A New Backscattering Dual-Polarized Rectenna for Wireless Power Transfer and IoT Applications

T.E. Djidjekh, *LAAS-CNRS*; Q. Bernyer, *LAAS-CNRS*; A. Takacs, *LAAS-CNRS*

11:30 – 11:40

We2A-6: A V-Band GaAs Self-Synchronous MMIC Rectifier for Wireless Power Transfer Including Backscattering Capabilities

M. Badii, *Università di Firenze*; G. Lasagni, *Università di Firenze*; M. Righini, *Università di Firenze*; S. Maddio, *Università di Firenze*; G. Collodi, *Università di Firenze*; A. Cidronali, *Università di Firenze*

253ABC

We2B: Applications of Radar, Sensing, and Imaging Systems

Chairs: Russell Kenney, *University of Oklahoma*
Chrisopher Rodenbeck, *Naval Research Laboratory*
Co-Chair: Suresh Venkatesh, *North Carolina State University*

10:10 – 10:20

We2B-1: A G-Band SAR System for Non-Destructive Inspection of Packaged Products

V. Kienle, *University of Ulm*; A. Grathwohl, *University of Ulm*; N. Riese, *University of Ulm*; F. Matt, *University of Ulm*; M. Eberspächer, *Technische Hochschule Würzburg-Schweinfurt*; C. Waldschmidt, *University of Ulm*

10:30 – 10:40

We2B-2: Millimetre-Wave FMCW Radar Thickness Measurement Under Environmental Vibration Using Hardware Synchronization and Reference Reflector Compensations

Y. Mitsui, *Toshiba*; K. Tsujimura, *Toshiba*; H. Mori, *Toshiba*

10:50 – 11:00

We2B-3: Wall Analysis of Buildings Using a Compact Multi-Band Radar System with a Common Phase-Center Antenna

N. Riese, *University of Ulm*; V. Kienle, *University of Ulm*; M. Hitzler, *University of Ulm*; C. Waldschmidt, *University of Ulm*

11:10 – 11:20

We2B-4: Low-Power Analog Correlator Based Code-Domain UWB MIMO Radar for Human Sensing and Tracking

T. Liang, *Northeastern University* ; A. Undavalli, *Northeastern University* ; A. Kumar, *Yale Univ.*; K. Rashed, *Oregon State Univ.*; S. Chakrabartty, *WashU*; A. Natarajan, *Yale Univ.*; A. Nagulu, *Northeastern University*

11:30 – 11:40

We2B-5: Distributed Coherent OFDM-Based Digital Radar for Multistatic UAV-Borne SAR

J. Kanz, *University of Ulm*; C. Gesell, *University of Ulm*; C. Bonfert, *University of Ulm*; D. Werbunat, *University of Ulm*; J. Aguilar, *University of Ulm*; A. Grathwohl, *University of Ulm*; C. Waldschmidt, *University of Ulm*

254AB

We2C: Advanced Biomedical RF Methods, Components, and Systems

Chair: Jan Wessel, *Fraunhofer FHR*
Co-Chair: Davi Rodrigues, *University of Texas at El Paso*

10:10 – 10:20

We2C-1: Microwave Probe Based on an Inverted Microstrip Line for Broadband Electron Paramagnetic Resonance Spectroscopy

Selina Eckel, *Karlsruhe Institute of Technology*; Matthias Beck, *Karlsruhe Institute of Technology*; Ahmet Cagri Ulusoy, *Karlsruhe Institute of Technology*

10:30 – 10:40

We2C-2: An Effective 1µs/A-Scan, 8-Beam Space-Division Multiplexing Optical Coherence Tomography Using Photonic-IC Based Multi-Beam Generation and CMOS TIA Based Readout

S. Deb, *WashU*; S. Hao, *WashU*; A.R. Hossain, *WashU*; A. Undavalli, *Northeastern University* ; W. Zhou, *WashU*; Y. Zhuang, *Northeastern University* ; C. Zhou, *WashU*; A. Nagulu, *WashU*

10:50 – 11:00

We2C-3: Characterization of RF Differential Tissue-Coupled Powering (DTCP): An Emerging Sub-GHz Wireless Power Transfer Link for Bio-Implants

A.I. Omi, *Univ. of Florida*; A. Jiang, *Univ. of Florida*; B. Chatterjee, *Univ. of Florida*

11:10 – 11:20

We2C-4: Wideband Low-Impedance Receive Interface for Untuned Coils

F. Narongrit, *Purdue Univ.*

11:30 – 11:40

We2C-5: Potential of Patch Antennas as MRI Scanner Bore-Integrated Transmit Arrays for 7 T Head Imaging

M.J. Hubmann, *OvG Universität Magdeburg*; G.A. Solomakha, *MPI for Biological Cybernetics*; C. Pfannenmüller, *OvG Universität Magdeburg*; F. Lurz, *OvG Universität Magdeburg*; N.I. Avdievitch, *MPI for Biological Cybernetics*; O. Speck, *OvG Universität Magdeburg*; H. Maune, *OvG Universität Magdeburg*

257AB

We2D: Microwave and mm-Wave Photonics Systems

Chair: Thomas Clark, *Michigan State University*
Co-Chair: Jonathan Comeau, *Otava RF*

10:10 – 10:20

We2D-1: KEYNOTE: Reconfigurable Microwave Photonic Systems: Innovations and Outlook

L.R. Chen, *McGill Univ.*

10:30 – 10:40

We2D-2: On-Chip Pseudo-Random Microwave Waveform Generation Based on Random-Sampled Subwavelength Grating Waveguide Bragg Grating

X. Wang, *McGill Univ.*; Y. Tu, *McGill Univ.*; Z. Wang, *McGill Univ.*; L.R. Chen, *McGill Univ.*

10:50 – 11:00

We2D-3: Wideband Frequency Synthesis Using Dual-Optical Phase-Locked Loop Synchronized to Optical Comb

V. Surendranath-Shroff, *Universität Paderborn*; M. Bahmanian, *Universität Paderborn*; J.C. Scheytt, *Universität Paderborn*

11:10 – 11:20

We2D-4: Photonically-Enabled Low Phase Noise Multi-Octave RF Synthesizer

C. Harrity, *Phase Sensitive Innovations*; A.A. Mahmud, *Phase Sensitive Innovations*; T. Creazzo, *Phase Sensitive Innovations*; T. Mascitelli, *Phase Sensitive Innovations*; K. Clyne, *Phase Sensitive Innovations*; A. Fantom, *Phase Sensitive Innovations*; D.W. Prather, *Univ. of Delaware*

11:30 – 11:40

We2D-5: A K/Ka-Band mmWave Radio-over-Fiber Transceiver Front-End with co-designed SiGe EIC and SiPh PIC for Intra-Satellite Links

Torben Onselaere, *Ghent Univ.*; Gaël Jongbloet, *Ghent Univ.*; Kieran De Bruyn, *Ghent Univ.*; Marijn Werbrouck, *Ghent Univ.*; Reinier Broucke, *Ghent Univ.*; Jasper Jans, *Ghent Univ.*; Cedric Bruynsteen, *Ghent Univ.*; Johan Bauwelinck, *Ghent Univ.*; Nishant Singh, *Ghent Univ.*; Guy Torfs, *Ghent Univ.*

11:50

151AB

We2E: Recent Advances in Compact Models and Packaging for Cryogenic and Quantum Applications

Chair: Luca Pierantoni, *Università Politecnica delle Marche*
Co-Chair: Jean-Olivier Plouchart, *IBM Research*

We2E-1: KEYNOTE: Quantum Matrix Solvers for Modeling of Microwave Devices

V. Okhmatovski, *Univ. of Manitoba*

We2E-2: Analysis of Multistable Superconducting Quantum Interference Devices (SQUIDs) in Keysight Advanced Design System

M. Ismail Abdelrahman, *Keysight Technologies*; J. Macauley, *Keysight Technologies*; M.A. Hassan, *Keysight Technologies*

We2E-3: Full-Circuit Modeling and Nonlinear Analysis of Flux-Pumped SQUID Amplifiers in Keysight Advanced Design System (ADS)

M.I. Abdelrahman, *Keysight Technologies*; S. Kim, *Keysight Technologies*; P. Krantz, *Keysight Technologies*; E.T. Holland, *Keysight Technologies*; M.A. Hassan, *Keysight Technologies*

We2E-4: A Physics-Based Temperature-Dependent Scalable Model for CMOS On-Chip Spiral Inductors for Quantum Computing Applications

Y.-M. Yeh, *ITRI*; C.-H. Li, *ITRI*; C.-S. Chen, *ITRI*; S.-S. Sheu, *ITRI*; S.-C. Cheng, *ITRI*; C.-N. Kuo, *NYCU*

We2E-5: Empirical Study on the Applicability of the Embedded Wafer Level BGA Package for Cryogenic RF Applications

P. Toth, *IBM*; J. Philipp, *Technische Univ. Braunschweig*; C. Geissler, *Infineon Technologies*; V. Issakov, *Technische Univ. Braunschweig*

We2E-6: Performance Limits and Cryogenic Characterization of a 13-to-18GHz CMOS Reflective-Type Phase Shifter for Qubit Control

J. Krause, *Keio Univ.*; H. Ishikuro, *Keio Univ.*

153AB

We2F: High Performance Power Amplifiers for Modern Communication Systems

Chair: Sushil Kumar, *Emerson*
Co-Chair: Hamhee Jeon, *L3Harris Technologies*

We2F-1: A 16.5 to 23.1 GHz High Efficiency Broadband GaN Doherty Power Amplifier utilizing Relative Input Phase Compensation Circuit

Keigo Nakatani, *Mitsubishi Electric Corp.*; Takuma Torii, *Mitsubishi Electric Corp.*; Ryuji Inagaki, *Mitsubishi Electric Corp.*; Akihito Hirai, *Mitsubishi Electric Corp.*

We2F-2: A Continuous-Mode Harmonic-Tuning Ku-Band GaN MMIC Doherty Power Amplifier with an 18.7% Fractional Bandwidth

P.-Y. Lee, *National Tsing Hua Univ.*; Y.-H. Shang, *National Tsing Hua Univ.*; H.-C. Lin, *NIAR-TSRI*; Y.-C. Chang, *NIAR-TSRI*; D.-C. Chang, *NIAR-TSRI*; S.S.H. Hsu, *National Tsing Hua Univ.*

We2F-3: Vector-Sum Phase Shifter Design for Analog Predistortion in an FR3 Band Power Amplifier Using GaAs HBT

S. Beppu, *Murata Manufacturing*; D. Araki, *Murata Manufacturing*; T. Soga, *Murata Manufacturing*; Y. Noguchi, *Murata Manufacturing*; K. Takenaka, *Murata Manufacturing*; M. Hase, *Murata Manufacturing*; S. Goto, *Murata Manufacturing*; H. Yamazaki, *Murata Manufacturing*

We2F-4: Ku-Band Doherty Power Amplifier with Differential Power Combiner in an Advanced GaN-on-Si HEMT Technology for 6G FR3 Applications

A. Noori, *Silicon Austria Labs*; J. Moreno Rubio, *UPTC*; C. Wagner, *Silicon Austria Labs*; C. Fager, *Chalmers Univ. of Technology*; G. Lasser, *Chalmers Univ. of Technology*

We2F-5: A 29.6dBm, 47.96% DE Intra-Cell IQ Generation SCPA Using Time-Domain Charge Redistribution

J. Zhao, *UESTC*; H. Tang, *UESTC*; X. Luo, *UESTC*

156AB

We2G: Phase and Amplitude Control Circuits for Phased Array Transceivers

Chair: Roee Ben-Yishay, *Intel*
Co-Chair: Luciano Boglione, *Boeing*

We2G-1: An Ultracompact Active Bidirectional Phase Shifter with an Intrinsic Reciprocal Phase Inverting Core

Uichan Park, *Seoul National Univ.*; Taeyeong Yoon, *Seoul National Univ.*; Donghun Kang, *Seoul National Univ.*; Jungsuek Oh, *Seoul National Univ.*

We2G-2: A 17–32GHz Bidirectional Amplitude-Phase Control Circuit for Multibeam Phased Array Transceivers in 40-nm CMOS

J. Sun, *Fudan Univ.*; J. Gu, *Fudan Univ.*; J. Wang, *Jiashan Fudan Institute*; K. Hu, *Fudan Univ.*; K. Han, *Jiashan Fudan Institute*; H. Xu, *Fudan Univ.*; N. Yan, *Fudan Univ.*

We2G-3: An Ultra-Compact 34–42GHz Hybrid-Type Phase-Invariant dB-Linear Variable-Gain Amplifier Achieving <1.7° RMS Phase Error

N. Villaggi, *ETH Zürich*; B.A. Abdelmagid, *ETH Zürich*; Y. Liu, *ETH Zürich*; T. Burger, *ETH Zürich*; T.-Y. Huang, *ETH Zürich*; H. Wang, *ETH Zürich*

We2G-4: A Ultrawideband Phase-Invariant VGA with Core-Matching Network Co-Design Achieving <1.38° RMS Phase Error

N. Hwang, *KAIST*; H. Lee, *KAIST*; H.-R. Jeon, *KAIST*; N.M. Nguyen, *KAIST*; M. Kim, *KAIST*; S.-G. Lee, *KAIST*; K.-S. Choi, *Yonsei Univ.*

We2G-5: A Compact Switchless Bidirectional Variable Gain Amplifier for IF Distribution in 6G Phased Arrays in a 130-nm BiCMOS Technology

A. Tiefenbach, *Universität Ulm*; K. Aufinger, *Infineon Technologies*; D. Kissinger, *Universität Ulm*

157AB

We2H: Advanced Non-Planar Filter and Multiplexer Design

Chair: Dimitrios Peroulis, *Purdue University*
Co-Chair: Cristiano Tomassoni, *Università di Perugia*

We2H-1: A Novel Waveguide Quadruplet Combining Dual- and Single-Mode Cavities for the Realization of a Minimum-Length Pseudo-elliptic Filter

Cristiano Tomassoni, *Univ. of Perugia*; Simone Bastioli, *RS Microwave*; Richard Snyder, *RS Microwave Company Inc. 10 Park Place, Butler*

We2H-2: Synthesis of Junction-Less Duplexers

G. Macchiarella, *Politecnico di Milano*; M. Oldoni, *Politecnico di Milano*; S. Tamiazzo, *ANDREW*

We2H-3: Compact Band-Stop Filters Based on Single Ridge Waveguide Lines, Resonators, and Coupling Elements

M.M. Fahmi, *DRDC*; J.A. Ruiz-Cruz, *Universidad Politécnica de Madrid*; R.R. Mansour, *Univ. of Waterloo*

We2H-4: A Compact Wideband Diplexer Covering X- and Ku-Bands with Enhanced Higher-Order Mode Suppression

M.M. Fahmi, *DRDC*; J.A. Ruiz-Cruz, *Universidad Politécnica de Madrid*; R.R. Mansour, *Univ. of Waterloo*

10:10
10:20
10:30
10:40
10:50
11:00
11:10
11:20
11:30
11:40
11:50

WEDNESDAY

MICROAPPS THEATER, BOOTH 15122

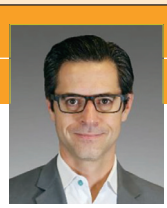
Startup Panel Session: RF Entrepreneurship in the Age of AI, New Space, and New Defense

11:10 – 11:55 | WEDNESDAY, 10 JUNE 2026

Abstract: AI-driven systems, venture-backed defense startups, proliferated LEO constellations, and the maturation of wireless are reshaping the economics and architecture of RF systems. This panel explores how these forces will create new opportunities — and potentially disrupt incumbents — across components, subsystems, and design tools. Where will the next generation of RF startups emerge, and what moats will matter?

Moderator: Chris Marki, *CEO, Marki Microwave*

Panelists: Bryan Goldstein, *ADI;* **Tim Grayson,** *BAE Systems*


CHRIS MARKI


BRYAN GOLDSTEIN


TIM GRAYSON

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RFTT Panel Session: How Will the Quantum Computing Explosion Drive New Growth in the RF Electronics Supply Chain— And RF Engineering Careers?

12:00 – 13:30 | WEDNESDAY 10, JUNE 2026 | ROOM: 156C

This panel is for academics and commercial attendees who need a deeper understanding of the opportunities for RF/UW components and solutions as part of a quantum solution and are determining when the industry will reach quantum advantage and what impact that has the RF industry. Quantum industry experts and leaders will provide insights into the state of the quantum industry, where and how RF/uW components are used and what can be expected in the future. They will also discus educational requirements for this industry and where to look for opportunities.

Organizers: Nadia Haider, *Delft Univ. of Technology,* **Greg Peters,** *TC-30 Quantum Committee*

Panelists:

Luke Mauritsen, *Boston Cryogenics*	**Eric Holland,** *Keysight Technologies*	**Sal Bosma,** *Delft Circuits*	**Kevin Tien,** *IBM*

THOMAS M. MENINO CONVENTION AND EXHIBITION CENTER (MCEC)

RFSA Panel Session: Integrated Sensing & Communications for Future Connected and Autonomous Transportation Systems

12:00 – 13:30 | WEDNESDAY, 10 JUNE 2026 | ROOM: 256

This panel will explore advancements in Integrated Sensing & Communications (ISAC) technologies that unify sensing with wireless connectivity across automotive and aerospace domains. Speakers will outline how tight co-design of sensing and communication stacks can potentially enable dual use of RF hardware (Wi-Fi, UWB, cellular, radar) to cut BOM cost, conserve spectrum, reduce power, and simplify architectural complexity for future software-defined vehicles and aircraft. The discussion is organized around three complementary domains: (1) short-range ISAC repurposing commodity wireless technologies (e.g., Wi-Fi and UWB) for in-cabin, near-vehicle, and in-flight sensing applications including intrusion detection, child presence / occupant vital sign monitoring, occupant localization, and classification; (2) long-range ISAC leveraging cellular infrastructure and high-definition maps for non-line-of-sight detection of occluded road users (e.g., to mitigate crashes at intersections and highway merges), and evolution of dual-purpose radar sensors supporting both high-resolution perception and high-bandwidth links to the network edge; (3) aerospace ISAC applications encompassing UAV/drone traffic management with integrated sensing and communication, aircraft collision avoidance systems combining radar sensing with air-to-air and air-to-ground data links, airport surface surveillance, and satellite-based ISAC for simultaneous Earth observation and communication services.

Organizer: Kamran Ali, *General Motors R&D*

Panelists:

Timothy Talty, *Virginia Tech*	**Jian Wang,** *Wisk Aero*	**Nuria González-Prelcic,** *University of California San Diego*	**Mark Freedman,** *Wish Aero*

252AB

We3A: Microwave Field & Matter Interaction Techniques

Chair: Malgorzata Celuch, *QWED*
Co-Chair: Kamel Haddadi, *Université de Lille*

We3A-1: A Microwave Plasma Tube Based on a Modified Evanescent-Mode Cavity Resonator

T. Azam, *Univ. of Toledo*; K. Singhal, *Univ. of Toledo*; A. Semnani, *Univ. of Toledo*

We3A-2: Sustainable Hemp-Based Polycarbonate Substrates Enabling Low-Loss 5G and mmWave Electronic Systems

W. Xu, *Purdue Univ.*; Y. Liu, *Purdue Univ.*; H.D. Davis, *Purdue Univ.*; B. Chen, *Purdue Univ.*; Y. Zhu, *Purdue Univ.*; P. Aklujkar, *Univ. of Connecticut*; N.M. Mohammad, *Purdue Univ.*; P. Deng, *Purdue Univ.*; G. Sotzing, *Univ. of Connecticut*; M. Cakmak, *Purdue Univ.*; S. Mohammadi, *Purdue Univ.*

We3A-3: Highly Localized Delivery of Microwaves to Quantum Bits with a Scanning Loop Micro-Antenna

S. Noh, *Univ. of California, Irvine*; M. Jiang, *Univ. of California, Irvine*; J.N. Ramos-Silva, *Univ. of California, Irvine*; P. Hemmer, *Texas A&M Univ.*; K. Haddadi, *IEMN (UMR 8520)*; P.J. Burke, *Univ. of California, Irvine*

We3A-4: Microwave Sensing Platform Integrated with Photochromic Films for Ultraviolet Transmission Analysis Through Automotive Glazing

M. ShafieiDarabi, *Univ. of Calgary*; A. YazdaniCherati, *Univ. of Calgary*; K.M. Wolfe, *Univ. of Calgary*; G.C. Welch, *Univ. of Calgary*; Z. Abbasi, *Univ. of Calgary*

We3A-5: Highly Sensitive CSRR-Based Angular Displacement Sensor with Extended Wide Dynamic Range

R.-C. Wang, *National Cheng Kung Univ.*; C.-L. Yang, *National Cheng Kung Univ.*

254AB

We3C: Radar- and RF-Based Vital Sign Sensing

Chair: Chung-Tse Michael Wu, *National Taiwan University*
Co-Chair: Rachel Jarvis, *University of Kansas*

We3C-1: Respiration Monitoring of Multiple People Using Multi-Site FMCW SISO Radar Systems

L. Qin, *HKUST Guangzhou*; M. Zhang, *SUSTech*; W. Song, *SUSTech*; Z. Huang, *HKUST Guangzhou*; X. Liu, *SUSTech*

We3C-2: Pulse-Doppler Self-Injection-Locked (PDSIL) Radar for Noncontact Vital Sign Monitoring

I.-H. Chen, *National Sun Yat-sen Univ.*; M.-H. Hsu, *National Sun Yat-sen Univ.*; Z.-Y. Wu, *National Sun Yat-sen Univ.*; J.-X. Zhong, *National Sun Yat-sen Univ.*; F.-K. Wang, *National Sun Yat-sen Univ.*; J.-Y. Shih, *National Sun Yat-sen Univ.*; C.-W. Lin, *National Sun Yat-sen Univ.*

We3C-3: An Ear-Worn mmWave Radar for Non-Intrusive Cardiovascular Health Monitoring

D.V.Q. Rodrigues, *Univ.of Texas at El Paso*; A. de Oliveira Barros, *Univ.of Texas at El Paso*

We3C-4: A D-Band GaAs pHEMT 2T1R Super-Regenerative Oscillator-Based Sensor Array Using Quench-Controlled Phase-Shifting Technique for Multi-Target Vital Sign Detection

D. Gao, *Rutgers Univ.*; S. Li, *Rutgers Univ.*; C.-J. Wu, *National Taiwan Univ.*; J.-T. Chung, *WIN Semiconductors*; A.Y.-K. Chen, *Univ. of California, Santa Cruz*; C.-T.M. Wu, *Rutgers Univ.*

We3C-5: Highly Sensitive Microwave Sensor Based on SIW Using an Axial Capacitive Extension (ACE) with IDC Loaded CSRR for Wrist Pulse Detection

E.-J. Chang, *National Cheng Kung Univ.*; C.-L. Yang, *National Cheng Kung Univ.*

257AB

We3D: Calibration De-Embedding Techniques for mm-Wave Devices

Chair: Patrick Roblin, *The Ohio State University*
Co-Chair: Ricardo Figueiredo, *Instituto de Telecomunicações*

We3D-1: KEYNOTE: VNA-Based Mixer Measurements Revisited

J. Martens, *Anritsu*

We3D-2: Generalized Thru-Reflect-Line Calibration for 1–220-GHz Single-Sweep Ultra-Wideband On-Wafer Measurement

A. Morini, *Università Politecnica delle Marche*; M. Farina, *Università Politecnica delle Marche*; R. Al Hadi, *ÉTS Montréal*; T. Li, *Cornell Univ.*; X. Tong, *Cornell Univ.*; L. Li, *Cornell Univ.*; J.C.M. Hwang, *Cornell Univ.*

We3D-3: A Novel Cable Fixture Design for Material Characteristic Extraction Based on 2X-Thru De-Embedding Methods

M.-L. Chang, *NTUST*; W.-H. Tsai, *NTUST*; C.-A. Lin, *NTUST*; T.-F. Tseng, *BizLink International*

We3D-4: Accurate Cryogenic S-Parameter Measurement Technique Using Room-Temperature SOLT Calibration and 2X-Thru De-Embedding

Y.-C. Chang, *NARLabs-TSRI*; Y.-S. Shiao, *NARLabs-TSRI*; W.-L. Chen, *NARLabs-TSRI*; B.-Y. Chen, *NARLabs-TSRI*; K.-M. Chen, *NARLabs-TSRI*; G.-W. Huang, *NARLabs-TSRI*; T.-Y. Lin, *NARLabs-TSRI*; D.-C. Chang, *NARLabs-TSRI*; S.S.H. Hsu, *National Tsing Hua Univ.*

253ABC

New! Late Breaking News: RSA2026

We3B: RFSA Late Breaking News

Chair: Jeffrey Nanzer, *Michigan State University*
Co-Chair: Christian Waldschmidt, *Ulm University*

We3B-1: A 100-175-GHz Single-Chip Frequency Extension Module for VNAs with Large Dynamic Range in a 90-nm SiGe BiCMOS Technology

Alexander Tiefenbach, *Ulm Univ.*; Thiemo Herbel, *Ulm Univ.*; Mohammed Ali, *Ulm Univ.*; Klaus Aufinger, *Infineon Technologies AG*; Dietmar Kissinger, Ulm Univ.

We3B-2: A Frequency-Agile Terahertz Detector in 16nm FinFET Driven by a Comprehensive Frequency Modulation Scheme

Jia Zhou, *Univ. of California, Los Angeles*; Rich Soong, Univ. of California, Los Angeles

We3B-3: Tunable Microwave Synthesis Using Feed-Forward Optical Division

James Greenberg, *IMRA America, Inc.*; Scott Egbert, *IMRA America, Inc.*; William McGrew, *IMRA America, Inc.*; Brendan Heffernan, *IMRA America, Inc.*; Antoine Rolland, IMRA America, Inc.

We3B-4: On-Orbit Demonstration of a Deployable Ka-Band 16-Element Active Phased-Array Transmitter

Takuma Komaba, *Institute of Science Tokyo*; Sota Kume, *Institute of Science Tokyo*; Atsuki Ochi, *Institute of Science Tokyo*; Delburg Mitchao, *Institute of Science Tokyo*; So Tanaka, *Institute of Science Tokyo*; Yuta Takahashi, *Institute of Science Tokyo*; Motoki Moritani, *Institute of Science Tokyo*; Hiraku Sakamoto, *Institute of Science Tokyo*; Atsushi Shirane, *Institute of Science Tokyo*; Kenichi Okada, *Institute of Science Tokyo*; Masanori Matsushita, *National Defense Academy*; Yuki Takao,

13:30
13:40
13:50
14:00
14:10
14:20
14:30
14:40
14:50
15:00
15:10

WEDNESDAY

151AB

We3E: Advances in Quantum Computing and Cryogenic Circuits

Chair: Michael Hamilton, *Auburn University*
Co-Chair: Jad Benserhir, *Technische Universiteit Delft*

13:30 **We3E-1: KEYNOTE: Challenges, Constraints, and Approaches for Readout of State-of-the-Art Superconducting Quantum Processors**

N. Zobrist, *Google*

13:50 **We3E-2: A Cryo-CMOS Fractional-N PLL in 22 nm FDSOI operating at 6 K for Trapped-Ion Quantum Computer Applications**

Yazan Saad Aldine, *Technische Univ. Braunschweig*; Adilet Dossanov, *Technische Univ. Braunschweig*; Alexander Meyer, *Technische Univ. Braunschweig*; Kaoru Yamashita, *Keio Univ.*; Hiroki Ishikuro, *Keio Univ.*; Vadim Issakov, *Technische Univ. Braunschweig*

14:10 **We3E-3: A 2.5–5GHz Cryogenic GaAs pHEMT MMIC LNA with an Average Noise Temperature of 2.5K**

W. He, *SUSTech*; S. Zhang, *SUSTech*; Z. Wang, *Shenzhen Univ.*; R. Yin, *Shenzhen International Quantum Academy*; H. Chen, *Shenzhen International Quantum Academy*

14:30 **We3E-4: A 16–50GHz Cryogenic LNA MMIC With 11.2K Average Noise Temperature for Radio Astronomy**

F. Heinz, *Fraunhofer IAF*; F. Thome, *Fraunhofer IAF*; P. Pütz, *MPI for Radio Astronomy*; G. Wieching, *MPI for Radio Astronomy*; A. Leuther, *Fraunhofer IAF*

153AB

We3F: Advanced Linearization Techniques

Chair: Pere Gilabert, *Universitat Politècnica de Catalunya*
Co-Chair: Roberto Quaglia, *Cardiff University*

13:30 **We3F-1: KEYNOTE: Pushing to Nature's Limit: Energy in Wireless Links**

J. Dawson, *TalkingHeads Wireless*

13:50 **We3F-2: Adaptive Tracking Digital Predistortion for RF Power Amplifiers Under Variable Bandwidth and Power Transmission**

H. Jia, *Xidian Univ.*; X. Liu, *Xidian Univ.*; T. Shen, *Xidian Univ.*; X. Wei, *Xidian Univ.*; Q. Shi, *Xidian Univ.*; Y. Lu, *Xidian Univ.*; W. Chen, *Tsinghua Univ.*; X. Ma, *Xidian Univ.*

14:10 **We3F-3: Low-Rank Adaptation-Based Digital Predistortion of RF Power Amplifiers for Dynamic Scenarios**

J. Zhu, *UESTC*; J. Peng, *UESTC*; Y. Bian, *UESTC*; T. Zhong, *UESTC*; M. Xiong, *UESTC*; J. Guo, *UESTC*; X. Wang, *UESTC*; C. Liang, *UESTC*; H. Zeng, *UESTC*; J. Ye, *UESTC*

14:30 **We3F-4: Joint Optimization of Guard-Band-Confined Peak Reduction and DPD for Boosting PA Average Output Power**

D. Kang, *Seoul National Univ.*; U. Park, *Seoul National Univ.*; J. Oh, *Seoul National Univ.*

14:50 **We3F-5: A Segment-Refined Digital Predistortion with Residual-Driven Structural Enhancement for RF Power Amplifiers**

H. Zeng, *UESTC*; J. Peng, *UESTC*; T. Zhong, *UESTC*; J. Zhu, *UESTC*; J. Ye, *UESTC*; Y. Bian, *UESTC*; M. Xiong, *UESTC*; X. Wang, *UESTC*; C. Liang, *UESTC*

156AB

We3G: Analog and Mixed-Signal Circuits for High-Speed Applications

Chair: Edward Gebara, *Michigan State University*
Co-Chair: Hermann Boss, *Rohde & Schwarz*

13:30 **We3G-1: KEYNOTE: InP DHBT ICs for Optical Communications: Past, Present, and Future**

A. Konczykowska, *Nokia Bell Labs*

13:50 **We3G-2: A 1–271-GHz Ultra-Broadband Amplifier Based on Synthesis of Multiple Amplifier Topologies**

Teruo Jyo, *NTT, Inc.*; Munehiko Nagatani, *NTT, Inc.*; Yuta Shiratori, *NTT, Inc.*; Miwa Mutoh, *NTT, Inc.*; Hiroyuki TAKAHASHI, *NTT, Inc.*

14:10 **We3G-3: A 24GHz Self-Biased Class-F_3 Voltage-Controlled Oscillator for High-Speed Wireline Transceivers in 12nm FinFET Technology**

A. Berwald, *FAU Erlangen-Nürnberg*; K. Vilyuk, *FAU Erlangen-Nürnberg*; J. Weninger, *FAU Erlangen-Nürnberg*; A. Engelmann, *FAU Erlangen-Nürnberg*; K. Scheller, *FAU Erlangen-Nürnberg*; R. Weigel, *FAU Erlangen-Nürnberg*; N. Franchi, *FAU Erlangen-Nürnberg*

14:30 **We3G-4: A Low-Jitter Dual-Edge Sampling PLL Based on Joint Optimization of Injection and Ring-VCO**

L. Zhao, *UESTC*; X. Zhang, *UESTC*; W. Xue, *UESTC*; Y. Shu, *UESTC*; X. Luo, *UESTC*

157AB

We3H: PCM, Magnetic, and MEMS Based Filters and Phase-Shifters

Chair: John Ebel, *AFRL*
Co-Chair: Mehmet Kaynak, *Texas Instruments*

13:30 **We3H-1: A 0.384mm^2 Ka-Band 4-Bit True Time Delay Phase-Shifter Using BiCMOS Integrated Phase Change Material Switches**

P. Blondy, *XLIM (UMR 7252)*; J. Lintignat, *XLIM (UMR 7252)*; L. Henrique de Araujo, *XLIM (UMR 7252)*; D. Passerieux, *XLIM (UMR 7252)*

13:50 **We3H-2: An 8–27GHz PCM Switched Reflective-Type Phase Shifter in 180nm SiGe BiCMOS Process for X, Ku and K Band Beamforming Applications**

A.M. Hegazy, *Univ. of Waterloo*; R.R. Mansour, *Univ. of Waterloo*

14:10 **We3H-3: Tilt-Optimized YIG Film-Based Magnetostatic Wave Tunable Bandpass Filters with Spurious and Passband Ripple Suppression**

Shuxian Wu, *Univ. of Pennsylvania*; Shun Yao, *Univ. of Pennsylvania*; Xingyu Du, *Univ. of Pennsylvania*; Tao Wang, *Univ. of Pennsylvania*; Chin-Yu Chang, *Univ. of Pennsylvania*; Roy H. Olsson III, *Univ. of Pennsylvania*

14:30 **We3H-4: A 4–18GHz Tunable Magnetostatic Surface Wave Nonreciprocal Filter with Zero-Static-Power Consumption Optimized for High Out-of-Band Rejection**

X. Du, *Univ. of Pennsylvania*; S. Yao, *Univ. of Pennsylvania*; Y. Ding, *Univ. of Pennsylvania*; D. Lu, *Univ. of Pennsylvania*; S. Wu, *Univ. of Pennsylvania*; C.-Y. Chang, *Univ. of Pennsylvania*; M.G. Allen, *Univ. of Pennsylvania*; R.H. Olsson III, *Univ. of Pennsylvania*

14:50 **We3H-5: Planar Ferrite Isolator Combining Edge-Guided Mode and Gyro-Resonance Absorption**

S. Khim, T. Monediere, *XLIM (UMR 7252)*; H. Parvery, B. Frigui, *CISTEME*; D. Passerieux, J.L. Valdes, L. Huitema, *XLIM (UMR 7252)*

15:00 **We3H-6: A DC–40GHz Grounded Coplanar Waveguide SP4T RF MEMS Switch in Hermetic Package**

X. Zhu, *Menlo Microsystems*; N. Yost, *Menlo Microsystems*

15:10

Startup Fireside Chat: IP 101: Protecting Your Innovation — A Fireside Chat for RF & Microwave Startups

15:15 – 16:00 | WEDNESDAY, 10 JUNE 2026

MICHELE MORESCO

Abstract: Intellectual property can make or break an early-stage technology company, especially in fields like RF, communications, and advanced electronics, where innovation moves fast and competition moves faster. Join us for an engaging fireside chat with an experienced intellectual property attorney specializing in electrical engineering and high-tech startups.

Presenter: Michele Moresco, *Shareholder, Wolf Greenfield*

RFTT INTERACTIVE FORUM | **IF1**

15:10 – 17:00 | Wednesday, 10 June 2026 | EXHIBIT HALL, BOOTH 21122

IF1 SESSION | Chair: Jason Soric, *Raytheon Company* | **Co-Chair:** Ifana Mahbub, *University of Texas at Dallas*

IF1-1: A Novel Compact Schiffman Phase Shifter with 92% Fractional Bandwidth Enabled by Quasi-0-Degree Phase Inverter

P. Gong, *Northeastern University;* K. Chen, *Northeastern University*

IF1-2: A 18:1 Bandwidth 180° Coupler with Wideband Common-Mode Rejection Balun

H. Zhang, *FAMU-FSU*; H. Yan, *FAMU-FSU*; F. Yan, *FAMU-FSU*; P. Liu, *FAMU-FSU*; S. Zolfaghary Pour, *FAMU-FSU*; M. Uzair, *FAMU-FSU*; S. Niazi, *FAMU-FSU*; A. Naseem, *FAMU-FSU*; J. Casamayor, *FAMU-FSU*; B. Arigong, *FAMU-FSU*

IF1-3: Super Cavity Region Substrate Integrated Waveguide Bandpass Filter

Z. Manzoor, *Purdue Univ.*; D. Peroulis, *Purdue Univ.*

IF1-4: Compact D-Band Differential Single-Inductor Power Divider with 0.0059mm² Silicon Area and 0.35-dB Minimum Insertion Loss

A. Franzese, *IHP*; R. Sinha, *NIT Rourkela*; S. Dilek, *IHP*; B. Sutbas, *IHP*; C. Carta, *IHP*

IF1-5: IDT-Based mmWave Resonator with Large Impedance Ratio and Over-100% Frequency Offset Between Resonance and Anti-Resonance

X. Liu, *HKUST*; J. Zheng, *HKUST*; F. Qian, *HKUST*; Z. Ren, *HKUST*; K. Yang, *HKUST*; Y. Yang, *HKUST*

IF1-6: Optically Excited Vanadium Dioxide Switches with DC–330GHz Bandwidth and Sub-Microsecond Switching Time

D.L. West, *Georgia Tech*; B.L. Ringel, *Georgia Tech*; J.D. Cressler, *Georgia Tech*; N. Ghalichechian, *Georgia Tech*

IF1-7: Low-Loss, Flat-Passband, 6–31GHz Tunable Magnetostatic Surface Wave Filter with Zero Static Power Consumption

S. Yao, *Univ. of Pennsylvania*; S. Wu, *Univ. of Pennsylvania*; Y. Ding, *Univ. of Pennsylvania*; D. Lu, *Univ. of Pennsylvania*; X. Du, *Univ. of Pennsylvania*; T. Wang, *Univ. of Pennsylvania*; C.-Y. Chang, *Univ. of Pennsylvania*; M. Allen, *Univ. of Pennsylvania*; R.H. Olsson III, *Univ. of Pennsylvania*

IF1-8: D-Band SIW Transitions in GaAs IPD Technology: Triple-Stack Vertical Flip-Chip and WR-06 Interconnects

T.-Y. Lin, *NIAR-TSRI*; S.-G. Lin, *NIAR-TSRI*; Y.-C. Chang, *NIAR-TSRI*; C. Hsieh, *NIAR-TSRI*; D.-C. Chang, *NIAR-TSRI*

IF1-9: An Additively Manufactured Camera-Lens-Inspired 4D/Shape-Reconfigurable Circular Phased Array for Multi-Octave Ultrawideband, Squint-Free, and Pattern-Invariant Beamforming

H. Al Jamal, *Georgia Tech*; M.M. Tentzeris, *Georgia Tech*

IF1-10: ECAM-Fabricated Low-Loss 3D Feed Network and Antenna for 6G Backhaul

N. Sanford, *WashU*; R. Challa, *Fabric8Labs*

IF1-11: Selective Laser Melting Design-to-Manufacturing Method for Integrated W-Band 3-D-Printed Feeds

G. Garcia-Contreras, *IETR (UMR 6164)*; C. Lattion, *SwissTo12*; S. Sirci, *SwissTo12*; E. Guenier, *CSEM*; E. Menargues, *SwissTo12*; A. Mourier, *SwissTo12*; V. Pejchal, *CSEM*; M. Garcia-Vigueras, *IETR (UMR 6164)*

IF1-12: Accurate Load-pull on InP HBT and InP HEMT Devices, Achieving Above 30% PAE at 220 GHz

Robert Jones, *National Institute of Standards and Technology*; Jerome Cheron, *National Institute of Standards and Technology*; Miguel Urteaga, *Teledyne Scientific Company*; William Deal, *Northrop Grumman Corp.*; Antonio Crespo, *Air Force Research Laboratory Sensors Directorate*; Michael Elliott, *KBR Inc.*; Ryan Gilbert, *KBR Inc.*; Benjamin Jamroz, *National Institute of Standards and Technology*; Jeffrey Jargon, *National Institute of Standards and Technology*; Peter Aaen, *Colorado School of Mine*

IF1-13: 4-Pole 20-nm InGaAs HEMT-on-Silicon Technology for Enhanced Breakdown Voltage Achieving fmax > 650GHz

M. Moulin, *Fraunhofer IAF*; A. Leuther, *Fraunhofer IAF*; S.A. Albahrani, *Fraunhofer IAF*; F. Heinz, *Fraunhofer IAF*; K. Kuliabin, *Albert-Ludwigs-Universität Freiburg*; S. Chartier, *Fraunhofer IAF*; A. Sebastian, *Albert-Ludwigs-Universität Freiburg*; A.A. Kunnath, *Fraunhofer IAF*; R. Lozar, *Fraunhofer IAF*; R. Quay, *Fraunhofer IAF*

IF1-14: A Novel Compact 200MHz GaN DC/DC Converter Module for Highly-Efficient PoL Supply

T. Hoffmann, *FBH*; A. Barber, *FBH*; L. Schellhase, *FBH*; D. Sun, *FBH*; A. Wentzel, *FBH*

IF1-15: Double Balanced Parametric and Resistive Millimeter-Wave Mixers with More Than 100GHz RF-Bandwidth

P. Umbach, *Fraunhofer IAF*; F. Thome, *Fraunhofer IAF*; A. Leuther, *Fraunhofer IAF*; R. Quay, *Fraunhofer IAF*

IF1-16: Distributed Resistive Up-Converter GaN HEMT MMIC With High LO Suppression for Wideband Applications Up to D-Band

C. Maurette-Blasini, *Albert-Ludwigs-Universität Freiburg*; S. Chartier, *Fraunhofer IAF*; S. Wagner, *Fraunhofer IAF*; P. Brückner, *Fraunhofer IAF*; R. Quay, *Albert-Ludwigs-Universität Freiburg*

IF1-17: A 33–39-GHz Compact Low-Power Low-PN VCO Achieving 205-dBc/Hz FOMTA with Overlapping Symmetrical Folded Tail Inductors for FMCW Radars

J. Zhang, *Tianjin Univ.*; M. Yu, *Tianjin Univ.*; F. Yuan, *Tianjin Univ.*; K. Ma, *Tianjin Univ.*

IF1-18: K-Band MMIC Quasi-Elliptic Filtering Amplifier Isolator

K. Li, *Univ. College Cork*; D. Psychogiou, *Univ. College Cork*

IF1-19: 8–27GHz Compact, Low-Power CMOS Active Power Divider Using CG-SF Topology and Inductor Array

B.-C. Lee, *Chungnam National University*; J.-T. Son, *Chungnam National University*; J.-H. Kim, *Chungnam National University*; J.-E. Lee, *Chungnam National University*; C.-Y. Kim, *Chungnam National University*

IF1-20: Novel GaN-Based Digital Class-E Doherty PA with High 12dB OBO Efficiency

G. Bartolotti, *Politecnico di Torino*; A. Piacibello, *Politecnico di Torino*; V. Camarchia, *Politecnico di Torino*; D. Sun, *FBH*; T. Hoffmann, *FBH*; A. Wentzel, *FBH*

IF1-21: An Efficient Load-Modulated Outphasing Energy Recovery Amplifier with High Linearity Using a Complex-Impedance Rectifier

B. Zeng, *CityUHK*; P.-W. Shu, *CityUHK*; Y. Pan, *Guangzhou University*; S. Zheng, *Sun Yat-sen Univ.*; W.S. Chan, *CityUHK*; X. Zhou, *PolyU*

IF1-22: A 25dBm 95–115GHz Coupler-Based Traveling-Wave MMIC Power Amplifier in GaAs pHEMT Technology

G. Kaval, *Gotmic*; M. Bao, *Ericsson*; G. Lasser, *Chalmers Univ. of Technology*; M. Gavell, *Gotmic*; C. Fager, *Chalmers Univ. of Technology*

IF1-23: A 26–40GHz GaN Doherty Power Amplifier with >20% PAE at 6-dB Back-Off Supporting Multi-Band 5G mm-Wave Applications

M. Safari Mugisho, *Fraunhofer IAF*; C. Friesicke, *Fraunhofer IAF*; P. Brückner, *Fraunhofer IAF*; R. Quay, *Fraunhofer IAF*

IF1-24: 0.5-to-52GHz High Power Nonuniform Distributed Amplifier in 60nm GaN/Si Process

A.S. Pham, *Univ. of California, Davis*; A.-V. Pham, *Univ. of California, Davis*

IF1-25: Dual Input Characterization of an Asymmetric Orthogonal Load Modulated Balanced Amplifier for Enhanced Linear Performance

J.-B. Urvoy, *Cardiff University*; À. Ciutat, *Univ. Politècnica de Catalunya*; R. Quaglia, *Cardiff University*; G. Montoro, *Univ. Politècnica de Catalunya*; P.L. Gilabert, *Univ. Politècnica de Catalunya*

IF1-26: Rotman Lens Design Using Factorization Machine and Quantum Annealing

Y. Son, *Kyung Hee Univ.;* E. Lee, *Kyung Hee Univ.;* S. Kim, *Kyung Hee Univ.*

IF1-27: Quantum Random Phased Array for Physical Layer Security in Covert Communication

J. Casamayor, *FAMU-FSU*; F. Yan, *FAMU-FSU*; M. Reynolds, *FAMU-FSU*; B. Arigong, *FAMU-FSU*

IF1-28: Quantum Transport in RF Applications: Ab Initio Investigations, Circuit Modeling, and Experimental Validation of Ferroelectric Diodes

M. Aldrigo, *IMT Bucharest*; E. Pavoni, *Università Politecnica delle Marche*; L. Zappelli, *Università Politecnica delle Marche*; G. Biagetti, *Università Politecnica delle Marche*; P. Crippa, *Università Politecnica delle Marche*; H.J. Christopher, *IMT Bucharest*; C. Parvulescu, *IMT Bucharest*; F. Nastase, *IMT Bucharest*; P. Russo, *Università Politecnica delle Marche*; E. Laudadio, *Università Politecnica delle Marche*; D. Mencarelli, *Università Politecnica delle Marche*; L. Pierantoni, *Università*

IF1-29: Compact Tune-Free Dual-Band Filter Using Metal Insert

A. Deleniv, *Ericsson*; P. Bouça, *Ericsson*; T. Do, *Ericsson*

RFSA INTERACTIVE FORUM | IF2

15:10 – 17:00 | Wednesday, 10 June 2026 | EXHIBIT HALL, BOOTH 21122

Chairs: Ifana Mahbub, *University of Texas at Dallas* | **Co-Chair:** Jason Soric, *Raytheon Company*

IF2-1: Real-Time Microwave Reflectometry for Precision Electronic Material Synthesis

A. Ghafari, *Univ. of Notre Dame*; G. Zhou, *Univ. of Notre Dame*; E. Zahedi, *Univ. of Notre Dame*; A. Orlov, *Univ. of Notre Dame*; A. Hoffman, *Univ. of Notre Dame*; C. Hinkle, *Univ. of Notre Dame*; J. Chisum, *Univ. of Notre Dame*

IF2-2: A GaN-Based Ka-Band Front-End for High-Temperature Applications

D. Matlock, *Michigan State Univ.*; D. Frey, *Michigan State Univ.*; M. Hodek, *Michigan State Univ.*; N.C. Miller, *Michigan State Univ.*; E. Gebara, *Michigan State Univ.*

IF2-3: Wideband FR3 MIMO Antenna Array for NextG Wireless Links

M. Kacar, *Sivers Semiconductors*; H. Tang, *UMass Lowell*; A. Pandey, *Sivers Semiconductors*; Y.-S. Yeh, *Sivers Semiconductors*; S.M.R.H. Shawon, *UMass Lowell*; G. Gok, *RTX*; H. Zhang, *UMass Lowell*; A. Natarajan, *Sivers Semiconductors*; H. Krishnaswamy, *Sivers Semiconductors*

IF2-4: System-Power-Efficient Reconfigurable Intelligent Surface with M+N Control: Achieving Full-Space Steering Including Diagonal Plane

S. Bang, *Seoul National Univ.*; H. Kim, *Seoul National Univ.*; B. Kim, *Seoul National Univ.*; H. Kim, *Seoul National Univ.*; B. Moon, *Seoul National Univ.*; U. Park, *Seoul National Univ.*; D. Seo, *Seoul National Univ.*; M.-S. Kim, *Kyungpook National Univ.*; H.-R. Kim, *Kyungpook National Univ.*; J. Oh, *Seoul National Univ.*

IF2-5: A Multi-Resonator Chipless Tag System Employing Miniaturized Resonators and a Novel High-Resolution Detecting Technique

M. Makimoto, *Univ. of Electro-Communications*; F. Sakai, *Sakura Tech*; K. Wada, *Univ. of Electro-Communications*

IF2-6: AgCl Based Optically Transparent and Flexible Beam Forming Reflectarray for Millimeter-Wave Applications

M.S. Ali, *Univ. of Glasgow*; Z. Akram, *Univ. of Glasgow*; J. Kazim, *Univ. of Glasgow*; M.Q. Mehmood, *Univ. of Glasgow*; C. Karuwan, *NSTDA*; W. Kamsong, *NSTDA*; M. Zubair, *University of Leicester*; F.A. Tahir, *Univ. of Glasgow*; M. Imran, *Univ. of Glasgow*; Q. Abbasi, *Univ. of Glasgow*

IF2-7: Deep-Learning-Based High-Efficient Sparse Array Design for a K-Band Short-Range MIMO Radar System

Y. Cao, *SJTU*; J. Zhang, *SJTU*; C. Gu, *SJTU*

IF2-8: Compact, Video-Rate, Photonically-Enabled, Millimeter Wave Imaging Sensor Featuring Scalable Architecture

C.E. Harrity, *Phase Sensitive Innovations*; S. Dontamsetti, *Phase Sensitive Innovations*; D. Marinucci, *Phase Sensitive Innovations*; T. Creazzo, *Phase Sensitive Innovations*; S. Rosenthal, *Phase Sensitive Innovations*; K. Shreve, *Phase Sensitive Innovations*; C. Newkirk, *Phase Sensitive Innovations*; D. Laplace, *Phase Sensitive Innovations*; C. Schuetz, *Phase Sensitive Innovations*; S. Shi, *Univ. of Delaware*; D.W. Prather, *Univ. of Delaware*

IF2-9: Iteratively Calibrated S11 Thermometry for Microsecond-Scale Intra-Pulse Heating in 96-Well Plates

Q. Tian, *Cardiff University*; H. Gao, *Cardiff University*; Y. Lou, *Cardiff University*; T. Martin, *Cardiff University*; W. Jiang, *Cardiff University*; J. Benedikt, *Cardiff University*

IF2-10: 3D-Printed Jig for Rapid Interconnecting and One-Port Measurement of Microwave (Bio)Sensors

K. Stachura, *AGH University of Krakow*; J. Sorocki, *AGH University of Krakow*; D. Kozien, *AGH University of Krakow*; I. Piekarz, *AGH University of Krakow*

MICROAPPS THEATER, BOOTH 15122

IMS Executive Forum: Microelectronics Product Development for Aerospace & Defense on Commercial Timelines

16:00-17:00 | WEDNESDAY, 10 JUNE 2026

This panel of executives from the semiconductor industry will discuss the challenges of developing for the Aerospace & Defense Market segment that has historically been limited to a few large prime contractors with long development cycles and Government customers with limited technology insertion points for large programs of record. This paradigm is shifting with the traditional defense industrial base becoming more agile along with new VC-backed defense firms that are responding to the customers' desire to move faster, sometimes with relaxed requirements.

TIMOTHY HANCOCK

Moderator: Timothy Hancock, *Director of Microelectronics, Raytheon Advanced Technology*

Panelists:

Ishan Sandhu, *Director, Sales & Applications, Texas Instruments*

Minal Sawant, *Sr. Director, Aerospace & Defense Vertical Market, AMD*

Bryan Goldstein, *Corporate VP, Aerospace, Defense and Communications, Analog Devices, Inc.*

James Chew, *VP for Government Technologies, Intel*

ISHAN SANDHU

MINAL SAWANT

BRYAN GOLDSTEIN

JAMES CHEW

Sponsored By:

RTX

COLLINS AEROSPACE | PRATT & WHITNEY | RAYTHEON

WEDNESDAY

MTT-S Awards Banquet

18:30 – 21:30 | WEDNESDAY, 10 JUNE 2026

We are delighted to introduce the 2026 recipients of MTT-S Society Awards! Congratulations to all the awardees for being recognized for their outstanding contributions to the field of microwave theory and technology, significant achievements in their career, or distinguished services to the society. The MTT-S Awards Banquet program includes dinner, entertainment, and technical and service awards presented by the MTT-S Awards Committee.

AWARD	AWARD RECIPIENT (S) AND CITATIONS
Microwave Career Award	**Stephen Maas—**For a Career of Leadership, Meritorious Achievement, Creativity and Outstanding Contributions in the Field of Microwave Theory and Technology
Microwave Pioneer Award	**Dylan Williams, Roger Marks—**For the Development of Impedance-Corrected Thru-Reflect-Line Calibrations and Measurements in Printed Transmission Lines
Microwave Application Award	**Alexander Kölpin—**For Outstanding Contributions to Interferometric Radar Technology for Medical Applications
Distinguished Service Award	**Amir Mortazawi—**For a Career of Leadership, Meritorious Achievement, Creativity and Outstanding Contributions in the Field of Microwave Theory and Technology
Distinguished Educator Award	**Raafat Mansour—**For Outstanding Achievements as an Educator, Mentor, and Role Model of Microwave Engineers and Engineering Students
N. Walter Cox Award	**Alaa Abunjaileh—**For Exemplary Service to the Society in a Spirit of Selfless Dedication and Cooperation
IEEE MTT-S Outstanding Young Engineer Award	**Hiroshi Hamada—**For outstanding early career achievements in Sub-THz InP-based circuits and systems for high-speed wireless communications
IEEE MTT-S Outstanding Young Engineer Award	**Eduardo A. Rojas—**For outstanding early career achievement in advanced manufacturing of RF packaging and wireless components, and his extensive service and leadership for the MTT-S community
IEEE MTT-S Outstanding Young Engineer Award	**Jan Budroweit—**For outstanding early career achievements in reconfigurable space radio systems and exemplary contributions to space initiatives within the society
IEEE MTT-S Outstanding Young Engineer Award	**Aline Eid—**For outstanding early career achievements in mmWave long-range powering, and retrodirective architectures and radars for backscatter communications, sensing, and localization
Microwave Prize	**David Werbunat, Julian Lerch, Benedikt Schweizer, Benedikt Woischnek, Rossen Michev, Christina Bonfert, Jurgen Hasch, Christian Waldschmidt—**For the outstanding/impactful paper entitled, "Multichannel Repeater for Coherent Radar Networks Enabling High-Resolution Radar Imaging," *IEEE Transactions on Microwave Theory and Techniques*, vol. 72, no. 5, pp. 3247-3259, May 2024
IEEE Microwave Magazine Best Paper Award	**Farid Medjdoub, Keisuke Shinohara, Fabian Thome, Jeong-sun Moon, Eduardo Chumbes, Matthew T. Guidry, Umesh Mishra, Enrico Zanoni, Matteo Meneghini, Gaudenzio Meneghesso, James W. Pomeroy, Terirama Thingujam, Martin Kuball—**For the outstanding/impactful paper entitled, "Emerging GaN Technologies for Next-Generation Millimeter-Wave Applications," *IEEE Microwave Magazine*, October 2024
IEEE Microwave and Wireless Components Letters Tatsuo Itoh Prize	**Emre Akso, Weiyi Li, Christopher Clymore, Everett O'Malley, Matthew Guidry, Justin Kim, Brian Romanczyk, Henry Collins, Boyu Wang, Christian Wurm, Nirupam Hatui, Stacia Keller, James Buckwalter, Umesh Mishra—**For the outstanding/impactful paper entitled, "Record D-Band Performance from Pre-Matched N-Polar GaN-on-Sapphire Transistor with 2 W/mm and 10.6% PAE at 132 GHz," *IEEE Microwave and Wireless Technology Letters*, vol. 34, no. 4, April 2024"
IEEE Transactions on Terahertz Science & Technology Best paper Award	**Thomas Kürner, Ralf-Peter Braun, Guillaume Ducournau, Uwe Hellrung, Akihito Hirata, Shintaro Hisatake, Laurenz John, Bo Kum Jung, Ingmar Kallfass, Tetsuya Kawanishi, Keitarou Kondou, Yigal Leiba, Bruce Napier, Ran Timar, Alexandre Renaud, Peter Schlegel, Pascal Szriftgiser, Axel Tessmann, Dominik Wrana—**For the outstanding/impactful paper entitled, "THz Communications and the Demonstration in the ThoR–Backhaul Link," *IEEE Transactions on Terahertz Science and Technology*, vol. 14, no. 5, pp. 554-567, September 2024
IEEE Journal of Microwaves Best Paper Award Best paper Award	**Jesse Brunet , Alex Ayling, Ali Hajimiri—**For the outstanding/impactful paper entitled, "Transmitarrays for Wireless Power Transfer on Earth and in Space," *IEEE Journal of Microwaves*, vol. 4, no. 4, October 2024"
IEEE Journal on Multiscale and Multiphysics Computational Techniques Best Paper Award	**Huan Huan Zhang, Zheng Lang Jia, Peng Fei Zhang, Ying Liu, Li Jun Jiang, Da Zhi Ding—**For the outstanding/impactful paper entitled, "Electromagnetic-Circuital-Thermal-Mechanical Multiphysics Numerical Simulation Method for Microwave Circuits," *IEEE Journal on Multiscale and Multiphysics Computational Techniques*, vol. 9, pp. 129-141, 2024"
IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology	**Federica Naccarata, Marco Di Cristofano , Gaetano Marrocco—**For the outstanding/impactful paper entitled, "Continuous Detection of Fluid Leaks into the Body by Means of Partially Dissolvable Antennas," *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, vol. 8, no. 1, pp. 15-25, March 2024"

THURSDAY WORKSHOPS SYSTEMS AND APPLICATIONS

| 08:00 – 17:20 | THURSDAY 11, JUNE 2026

	WORKSHOP TITLE	WORKSHOP ABSTRACT
WTHA	**Microwave Measurements Supporting Quantum Technologies** **Organizers:** F. Mubarak, VSL — *National Metrology Institute;* M. Stanley, *NPL;* M. Marchetti, *Maury Microwave;* N. Messaoudi, *Keysight Technologies* **08:00 – 17:20** **ROOM: 252AB**	Quantum technologies such as quantum computing are rapidly evolving from theoretical promise to technological frontier, driven in large part by innovations in microwave engineering. At the heart of many quantum platforms — especially superconducting qubits — lie microwave signals and components that enable precise control and readout of quantum states. These systems operate in extreme cryogenic environments, often at temperatures below 50 millikelvin, where conventional microwave techniques face unprecedented constraints. As quantum processors scale to accommodate hundreds or thousands of qubits, the microwave infrastructure required to support them grows exponentially. This includes a dense network of coaxial cabling, attenuators, filters, amplifiers, and interconnects, all of which must perform reliably under cryogenic conditions. The resulting demands on thermal management, spatial efficiency, and signal fidelity are formidable, and they call for a new generation of microwave design and metrology tailored to quantum applications. This workshop will explore the role of microwave technologies in enabling quantum control and readout and examine the unique challenges of cryogenic measurements for semiconductor and superconductor components. Topics will include calibration and uncertainty analysis in quantum-limited regimes, design strategies for minimizing heat load while maximizing signal integrity, and the development of emerging standards for benchmarking quantum hardware. Attendees will hear from a diverse lineup of speakers including quantum system developers, microwave instrument manufacturers, academic researchers, and national metrology institutes, who are tackling the practical challenges of building scalable quantum computers.
WTHB	**Sustainable Microwave Engineering and Microwave-Enabled Sustainability** **Organizers:** J. Grosinger, *University of Siegen;* M. Wagih, *University of Glasgow;* P. Siegel, *THz Global* **08:00 – 17:20** **ROOM: 253ABC**	ICT and electronics are responsible for 2–4% of global emissions and potentially over 50% of the critical minerals consumption per capita, mostly attributed to the manufacturing of semiconductor devices. Microwave technologies underpin telecommunications and are a major energy consumer; emerging microwave technologies also have the potential to make electronics, and the world, more sustainable. This workshop will provide a holistic view of how sustainability and microwave technologies interact, across three main areas: (1) The sustainability of microwave devices and wireless networks, and more broadly electronics, with a focus on semiconductors and Life Cycle Assessments (LCAs); (2) Microwave technologies for sustainable sensing and identification, with a focus on RFID technologies and sustainable chipless solutions; (3) Microwave wireless power transfer (WPT) and its role in sustainability, from battery-less IoT to space-based "Net-Zero" energy generation. The workshop will start by introducing microwave engineers to areas ranging from RFICs/MMICs to passive technologies and systems, to quantifying sustainability. LCA will be introduced as a methodology which can be used to quantify the footprint of both specific electronic devices, with a focus on integrated circuits/chips, and of systems. LCA will then be applied to a range of technologies, including emerging mm-wave/THz links, RFID (UHF and chipless), and IoT applications. Given the central role of semiconductors, sustainable chip manufacturing and integration will be introduced, including a strong focus on industrial insights. These will be provided by opinions from activities across Europe, the US, and the UK, with a focus on industrially co-created insights. Methods for adopting "circular economy" principles and allowing RFICs and MMICs to be recycled and reused will be introduced. Frameworks for design-for-recycling will be discussed, highlighting challenges around reliability and commercialisation. The last technical aspect will explore the role of microwaves in creating a more sustainable world. Wireless Power Transfer (WPT), both terrestrial (low-power) and space-based (high-power) will be introduced as sustainable technologies for green energy. Chipless RFID and circular/low-waste RFID tags will also be discussed, as exemplars of how microwave-enabled tech could enable more supply chains. The workshop's primary aim is to deepen the understanding of sustainability challenges across the microwave community. With the workshop speakers coming from a range of backgrounds and having active roles within the community, including 2 Editors-in-Chief (EiCs) of microwave journals, and multiple Topic Editors and Distinguished Microwave Lecturers (DMLs), we will conclude with an interactive panel discussion reflecting upon the sustainability challenges and seeking audience interaction. The panel will be primarily driven by the audience's questions, and will be followed by a breakout and networking time to allow the attendees to connect with the speakers.
WTHC	**Towards the Integration of AI Approaches in Biological, Healthcare and Precision Agriculture Applications Using Microwaves Analysis** **Organizers:** A. Costanzo, *Università di Bologna;* K. Grenier, *LAAS-CNRS* **08:00 – 17:20** **ROOM: 254AB**	Electromagnetic fields from low frequency to sub-mm-wave (THz) are attracting much interest for biological, healthcare and agriculture precision applications. Among them is the possibility to non-invasively analyze living organisms at various scales, from individual cells to tissues and organs, for in-vitro and in-vivo investigations. With the advent of machine-learning techniques, the intrinsic variability of living organisms can be increasingly taken into account and offer new perspectives for detection and applications. This workshop will address the latest advances in microwave, mm-wave and sub-mm-wave biosensing and probing instruments suitable for molecular-scale to organ-scale investigations during in-vitro and in-vivo studies. Accurate biological sample characterization and analysis will be highlighted with resonant or broadband approaches with respect to the target applications, with main aims of early diseases' diagnosis and prognosis. The integration of machine-learning techniques is becoming more common in biomedical investigations and enables further advances in detection accuracy and limits. Examples will be discussed, demonstrating its undoubted interest and increased use in the near future. A large space for discussion and interactions between speakers and attendees will be kept open during the day.

The Exhibit Floor closes today at 15:00. Don't miss your chance to:

Engage with 500+ companies

See demos in the RF Systems Pavilion

Get your headshot taken in the Societies Pavilion

Visit the Startup Pavilion

Attend a MicroApps Session

Challenge a colleague to a game on the Microwave Boulevard

INDUSTRY WORKSHOPS | 08:00 – 17:20 | THURSDAY, 11 JUNE 2026

SESSION CODE	TIME & LOCATION	TITLE AND ABSTRACT	SPEAKER(S), AFFILIATION
IWTh1	08:00 – 09:40 Room: 152	**Wideband RF PA Characterization: VNA vs VSA-VSG Under Memory Effect Conditions —** Modern technology is driving higher data rates and wider bandwidths. Communication standards such as 5G, 802.11, and satellites are driving power amplifier (PA) designers to develop amplifiers with ever-wider bandwidths. As bandwidth increases PAs memory effects become more pronounced, making accurate memory effect characterization more critical than ever. Additionally, efficiency requirements push the PAs further into non-linearity. Both topics are critical for digital predistortion (DPD) techniques. Different instrument classes are available for measuring wideband PAs. This workshop will compare data obtained from vector network analyzers (VNAs) and from vector signal generator-spectrum analyzer setups.	Paul Peterson, *Rohde & Schwarz*; Florian Ramian, *Rohde & Schwarz*; Martin Lim, *Rohde & Schwarz*; Markus Loerner, *Rohde & Schwarz*
IWTh2	08:00 – 09:40 Room: 154	**Precision at the Front-End: The Journey from Design to Manufacturing of Cutting-Edge AI-Optimized High Power RF Filters & Consolidated RF Waveguide Components —** This workshop shed light on end-to-end process that transforms advanced electromagnetic designs into manufacturable, reliable hardware for demanding applications such as satellite payloads, radar systems, and next-generation communication networks. Beginning with rigorous electromagnetic simulation and optimization, design phase integrates thermal, mechanical, and additionally Multipactor analyses to ensure high power handling and minimal insertion loss. Speakers share unique design and engineering challenges as well as uncover recent innovations in achieving exceptionally tight tolerances, thermal stability, and design robustness across complete lifecycle of consolidated RF waveguide components—from initial electromagnetic design through precision machining, surface finishing, and final qualification.	Mohamed Ali, *Scientific Microwave Corporation*; Gada Saad, *Scientific Microwave Corporation*; Daniel Fallon, *Synopsys Inc.*; Laila Salman, *Synopsys Inc.*; Diamond Liu, *SynMatrix Technologies*; Michael Hollenbeck, *Optisys LCC*; Robert Smith, *Optisys LCC.*
IWTh3	10:10 – 11:50 Room: 152	**Implementing an Open-Source 5G End-to-End Testbed Using OAI and USRP Radios —** This workshop discusses the implementation, configuration, and operation of a comprehensive stand-alone open-source 5G end-to-end testbed to enable 5G research, development, and prototyping. The testbed provides a 5G SA FR1 and FR3 platform based on the OAI software stack and the USRP radio, for operation both over-the-air (OTA) and via coax cable. The testbed includes the all the primary system components: the core network; the basestation (gNB); and three implementations of the handset (UE). We will discuss in detail the full procedure for building this testbed, highlight several practical use-cases, and explore troubleshooting steps.	Neel Pandeya, *National Instruments (NI)*
IWTh4	10:10 – 11:50 Room: 154	**Disruptive Paths to RF Innovation with Additive Manufacturing & Thermal Cooling —** Recently, powder-bed fusion metal additive manufacturing (AM) process has matured as a breakthrough technology for the development of RF and microwave components such as waveguides, filters as well as antennas. Additive Manufacturing of RF Waveguide Components showed several advantages over the traditional-conventional machining process especially when it comes to part weight reduction and design flexibility. Critical discussions will also cover the challenges that remain. Surface roughness, material anisotropy, and process variability can degrade RF performance if not properly managed. Standards for material characterization, dimensional accuracy, and RF testing are still evolving.	Andreas Vlahinos, *Advanced Engineering Solutions*; Laila Salman, *Synopsys Inc.*; Peter Moschetti, *Synopsys Inc.*; Ahmed Zaghlol, *Innovative Thermal Solutions Inc.*
IWTh5	13:30 – 15:10 Room: 152	**The "Swiss Army Knife" for Calibration and Broadband Verification —** This workshop focuses on leveraging phase information in RF device characterization using the Rohde & Schwarz ZN-ZCG phase reference. It is tailored for engineers, technicians, and researchers aiming to enhance measurement accuracy through advanced phase reference techniques in VNAs and VSAs-VSGs. Accurate RF measurements extend beyond amplitude: Understanding and utilizing phase information is essential. This workshop introduces the signal comb — a versatile phase reference tool — and demonstrates how it serves as a comprehensive solution for calibration and broadband verification, improving the precision of amplitude and phase measurements in diverse RF applications.	Thorsten Lück, *Rohde & Schwarz*; Florian Ramian, *Rohde & Schwarz*; Harley Berman, *Marki Microwave*; Markus Lörner, *Rohde & Schwarz*; Lars Foged, *MVG | Microwave Vision Group*
IWTh6	13:30 – 15:10 Room: 154	**Next-Generation RF Components: Strategies to Minimize Loss, Noise & Distortion —** As RF systems expand into higher frequencies and wider bandwidths, preserving signal integrity and fidelity has become a universal challenge. This panel will explore how advances in interconnects, passives, and active RF components address core engineering concerns, including minimizing loss, noise, and distortion, while optimizing SWaP-C, reliability, and repeatability. By presenting perspectives across the signal chain, the discussion will highlight real-world tradeoffs, integration challenges, and emerging technologies. Attendees will gain practical guidance on selecting, integrating, and optimizing components for next-generation, mission-critical applications in aerospace, defense, and communications, including phased array systems, space systems, and advanced microwave architectures.	David Higginson, *Q Microwave*; Philip Lenk, *Micro-Coax*; Colby Hobart, *Amphenol Printed Circuits*; Matthew Radicchi, *Times Microwave Systems*; Cameron Foley-Molovinsky, *Times Microwave Systems*; Matthew O'Leary, *XMA Corp.*
IWTh7	15:40 – 17:20 Room: 152	**AI-driven RF-mmWave IC design flow with Synopsys + Keysight + Ansys simulation tools —** In the world of the most advanced and demanding RF-mmWave integrated circuits, designers look to Synopsys, Ansys (part of Synopsys) and Keysight to outfit them with the best-in-class set of AI-driven IC design and layout, circuit simulation and EM analysis software. In this workshop and tutorial, experts from Synopsys and Keysight will walk designers through such a flow. It starts inside Synopsys' Custom Compiler where designers will put their ideas down on the most feature-rich yet intuitive design canvas. Synopsys' ASO.ai is unleashing the power of AI to analog and RF-mmWave IC design. Critical signal paths and devices will be extracted and modeled by Keysight RFPro EM if the Method of Moment analysis is the most appropriate, or by Ansys'; HFSS if a full 3D Finite Element Method is the most appropriate. This workshop will explain to participants how this choice can be best made. We will then show how Synopsys's; PrimeWave can be used to assemble the design, models, and build test benches (with Keysight's Virtual Test Benches) as well as define critical measurements to characterize the IC. A full description of this IC will be simulated in Keysight's Nexus or GoldeGate RFIC simulators. For designers looking to use native capabilities in Keysight's ADS, we will also demonstrate how a design can seamlessly work in Keysight ADS seamlessly and Synopsys'; Custom Compiler. At the conclusion of this workshop, designers will have experienced the best flow to ensure a first-time success tape out of an RF integrated circuit.	Cedric Pujol, *Keysight Technologies*; Jian Yang, *Synopsys, Inc.*
IWTh8	15:40 – 17:20 Room: 154	**Circular Polarization with mmWave Phased Array Antenna: multiple simultaneous beams with independent polarizations (LHCP, RHCP, H- or V-pol) —** Phased array antennas (PAA) play a crucial role in satellite communications, where circular polarization (CP) and simultaneous multiple beams are employed to enhance capacity, coverage, and reliability. This workshop will focus on evaluating CP performance of PAAs operating in multibeam hybrid configurations, enabling independent polarizations for each beam, including left-hand circular polarization (LHCP), right-hand circular polarization (RHCP), horizontal or vertical polarization (H- or V-pol). We will delve into the design of a PAA with 256 elements, discuss measured performance, and provide a live demonstration of how to conduct over-the-air testing using a multi-reflector compact antenna test range.	Organizer: Corey Mathis Keysight, *Technologies*

151AB

Th1A: mm-Wave and sub-THz Power Amplifiers

Chair: Kevin Kobayashi, *Qorvo*
Co-Chair: Munkyo Seo, *Sungkyunkwan University*

Th1A-1: A Compact D-Band 32-Way 28.2 dBm Power Amplifier in InP HBT

M. Seo, *Sungkyunkwan Univ.*; J. Jang, *Sungkyunkwan Univ.*; N. Sharma, *Samsung*; W.-S. Choi, *Samsung*; G. Xu, *Samsung*

Th1A-2: A D-Band GaN Power Amplifier with 28 dBm Psat, a Power Density of 0.2 W/mm^2, and Loss-Optimized Matching Networks

Thomas Zieciak, *Fraunhofer Institute for Applied Solid State Physics*; Philipp Neininger, *Fraunhofer Institute for Applied Solid State Physics*; Christian Friesicke, *Fraunhofer Institute for Applied Solid State Physics*; Peter Brückner, *Fraunhofer Institute for Applied Solid State Physics*; Rüdiger Quay, *Fraunhofer Institute for Applied Solid State Physics*

Th1A-3: A 70–170-GHz InP Differential Non-Uniform Distributed Amplifier Using Tapered Output Coupled Line for High Output Power

P.T. Nguyen, *Univ. of California, Davis*; A. Pham, *Univ. of California, Davis*; V.-A. Ngo, *Univ. of California, Davis*; N. Wagner, *Keysight Technologies*; A. Stameroff, *Keysight Technologies*; A.-V. Pham, *Univ. of California, Davis*

Th1A-4: A 0.48W/mm^2 High-Power-Density D-Band Power Amplifier in 250-nm InP HBT Process

G. Park, *Korea Univ.*; S. Jeon, *Korea Univ.*

Th1A-5: A CMOS E/W-Band Power Amplifier with 53% Bandwidth Using an Over-Neutralized Active Core for Dielectric Waveguide Interconnects

S. Lee, *Seoul National Univ.*; Y. Lee, *Seoul National Univ.*; K. Choi, *Seoul National Univ.*; W. Choi, *Seoul National Univ.*

153AB

Th1B: Low Noise Components for Wideband Receivers

Chair: Caglar Ozdag, *IBM Research*
Co-Chair: Fabian Thome, *Fraunhofer IAF*

Th1B-1: A D-Band Passive-Mixer-First Receiver Front-End for an IF-Beamforming Phased Array in 45nm RFSOI

M. Tian, *Penn State*; L. Zhong, *Penn State*; W. Lee, *Penn State*

Th1B-2: A 22 to 44GHz Broadband Passive Mixer-First Receiver Achieving 9.3dB NF in 45nm RFSOI

M. Artlip, *Penn State*; A. Stepko, *Penn State*; L. Zhong, *Penn State*; D.S. Hostetler, *ARL at Penn State*; W. Lee, *Penn State*

Th1B-3: A 7–15GHz IF Reflectionless Receiver with Tri-Coupled Transformer Based LNA and 43.8–76.3ns Settling Time Automatic Gain Control

Q. Li, *UESTC*; B. Yang, *UESTC*; A. Han, *Shenzhen Univ.*; Y. Shu, *UESTC*; X. Luo, *UESTC*

Th1B-4: A Compact 11–27.3GHz CMOS LNA Employing a 5-in-1 Transformer Feedback for Wideband Operation

L.-C. Tsai, *National Taiwan Univ.*; L.-H. Lu, *National Taiwan Univ.*

Th1B-5: A D-Band Wideband Low-Noise Amplifier in 40-nm Bulk CMOS Technology with Doubly-Tuned Transformer Networks

Y.-T. Chang, *National Taiwan Normal Univ.*; J.-H. Tsai, *National Taiwan Normal Univ.*

156AB

Th1C: Innovative Integration Techniques of Waveguide Structures for GHz to Sub-THz Applications

Chair: Jason Soric, *Raytheon Technologies*
Co-Chair: Hualiang Zhang, *University of Massachusetts Lowell*

Th1C-1: High Density MIMCAPs in a 300mm Silicon Interposer Using High-k Dielectric and 3D Oxide-Studs for mm-Wave Applications

I. Comart, *IMEC*; P. Nolmans, *IMEC*; S. Kang, *IMEC*; R. ElKashlan, *IMEC*; A. Sanchez Ramos, *IMEC*; L. Pauwels, *IMEC*; N. Van Hoovels, *IMEC*; S. Sinha, *IMEC*; X. Sun, *IMEC*; A. Miller, *IMEC*; E. Beyne, *IMEC*; N. Collaert, *IMEC*

Th1C-2: A Wideband True Time Delay Microstrip Line Five-Port Coupler with Double Ring Star Link

Ayesha Naseem, *Florida A&M University*; Muhammad Uzair, *Florida A&M University*; Shehryar Niazi, *Florida A&M University*; Hanxiang Zhang, *Florida State Univ.*; Saeed Zolfaghary pour, *Florida A&M University*; Hao Yan, *Florida State Univ.*; Fei Yan, *Florida A&M University*; Po Wei Liu, *Florida State Univ.*; Jonathan Casamayor, *Florida State Univ.*; Mia Reynolds, *Florida State Univ.*; Bayaner Arigong, *Florida A&M University*

Th1C-3: Integration of Passive D-Band Components Within the AFSIW Technological Platform for Future Systems on Substrate

S. Lagoug, *IMS (UMR 5218)*; S. Le Bihan, *IMS (UMR 5218)*; E. Kerhevé, *IMS (UMR 5218)*; A. Hamani, *CEA-LETI*; J.-L. Gonzalez Jimenez, *CEA-LETI*; A. Ghiotto, *IMS (UMR 5218)*

Th1C-4: A Structurally Reused Hybrid Integrated Ridged-Air-Filled Substrate Integrated Waveguide for Large-Frequency-Ratio X-K- and E-Band Cross-Band Operation

B. Lei, *Shenzhen Univ.*; J. Li, *Shenzhen Univ.*; T. Yuan, *Shenzhen Univ.*

Th1C-5: A Highly Isolated Dual-Band Substrate Integrated Waveguide Phase Shifter with Large Phase Tuning Range

Z. Wei, *UESTC*; Y. Li, *UESTC*; J. Hu, *UESTC*; H. Shao, *UESTC*; P.-L. Chi, *NYCU*; T. Yang, *UESTC*

157AB

Th1D: Advanced Integrated Passive Devices

Chair: Roberto Gómez-García, *Universidad de Alcalá*
Co-Chair: Shahrokh Saeedi, *Boeing*

Th1D-1: KEYNOTE: Transmission Line Filters from Waveguides, to CPW, to Sound

C. Jackson, *IEEE*

Th1D-2: A Fully Differential Ultra-Compact Broadband Rat-Race Coupler Using Folded Inverted Coupled-Lines in 180-nm CMOS

Q. Zhang, *UESTC*; X. Zhang, *UESTC*; S. Wang, *UESTC*; C. Zhao, *UESTC*; Y. Wu, *UESTC*; H. Liu, *UESTC*; W. Yin, *Zhejiang Univ.*; K. Kang, *UESTC*

Th1D-3: Ultra-Wideband, Low-Loss, and High-Isolation Wilkinson Power Divider Using the Multiple Resonant Technique

K.-W. Mao, *National Taiwan Univ.*; C.-C. Kuo, *National Taiwan Univ.*; K.-Y. Lin, *National Taiwan Univ.*

Th1D-4: A 220-340 GHz Modified Marchand Balun with Asymmetric Ground Shield in 90 nm SiGe-BiCMOS

Alexandros Bechrakis Triantafyllos, *Delft Univ. of Technology*; Daniele Cavallo, *Delft Univ. of Technology*; Marco Spirito, *Delft Univ. of Technology*; Klaus Aufinger, *Infineon Technologies AG*; Nuria Llombart, *Delft Univ. of Technology*; Maria Alonso-delPino, *Delft Univ. of Technology*

Th1D-5: Miniaturized 150-GHz Branch-Line Coupler Using Capacitive Compensation in Quartz-IPD Technology

Z.-W. Shao, *NYCU*; C.-N. Kuo, *NYCU*

08:00
08:10
08:20
03:30
08:40
08:50
09:00
09:10
09:20
09:30
09:40

THURSDAY

MICROAPPS | 09:45 – 15:00 | Thursday, 11 June 2026 | MICROAPPS THEATER, BOOTH 15122

SESSION CODE	TIME	TITLE	SPEAKER(S), AFFILIATION
THMA1	09:45 – 10:00	**Scalable MIMO Testbed and Hybrid Beamforming Technology Drive High-Resilient Connectivity in 6G Networks and SATCOM**	Ethan Lin, *TMY Technology Inc.*
THMA2	10:02 – 10:17	**Dynamic Gain Model Pre-Distortion Methodology applied towards Digital Beam Former Design**	Eric Newman, *Keysight*
THMA3	10:19 – 10:34	**Multi-Chip Synchronization of RF Channels**	Ian Beavers, *Analog Devices Inc*
THMA4	10:36 – 10:51	**RF Signal Chain Solutions Revolutionizing Satellite Communications, 5G, Aerospace and Defense**	Baljit Chandhoke, *Microchip Technology*
THMA5	10:53 – 11:08	**Using Thin Film Sputtering Technologies to Create New Bias Options**	Cory Nelson, *Kyocera-AVX*
THMA6	11:10 – 11:25	**RF Wireless System Digital Twins and Automation for AI**	Tarun Chawla, *Remcom*; Justin Newton, *Remcom*
THMA7	11:27 – 11:42	**The Critical Role of Simulation Tool Integration between Electromagnetic Solvers and System Level Design**	Dustin Hoekstra, *Cadence*
THMA8	11:44 – 11:59	**Artificial Intelligence Driving Next Generation Test and Measurement instrumentation**	Navneet Kataria, *Anritsu*
THMA9	12:01 – 12:16	**Gain more insight with residual measurements**	Markus Loerner, *Rohde & Schwarz*
THMA10	12:18 – 12:33	**GSM and NB-IOT: Methods for Testing and Correlation in RFIC Performance Characterization**	Bhavesh Rathod, *Texas Instruments*
THMA11	12:35 – 12:50	**Material Measurements in the 1-170 GHz range supporting AI and other emerging technologies**	Marzena Olszewska-Placha, *QWED Sp. z o.o.*
THMA12	12:52 – 13:07	**Performing Large OTA Data Collections with the USRP**	Neel Pandeya, *National Instruments*
THMA13	13:09 – 13:24	**Phase calibration across frequency**	Markus Loerner, *Rohde & Schwarz*
THMA14	13:26 – 13:41	**Software-defined Pulse Generation for RF and Microwave Experiments**	Mireia Perera Gonzalez, *Swabian Instruments*; Timon Eichhorn, *Swabian InstrumentsSteffen Oesterwind, Swabian Instruments*
THMA15	13:43 – 13:58	**ZIF based SDR Transceiver as a new solution for Test, Measurement and Radar applications**	Padraig Mc Daid, *Analog Devices*
THMA16	14:00 – 15:00	**Startup Panel Session: From Vision to Profitability: The Startup Journey**	Isar Mostafanezhad, *Nalu Scientific, LLC.*; Cameron Hill, *LintrinsIC Semiconductors;* Scarlett Koller, *Mithril;* Duncan Haldane, *JITX;* Michael Hollenbeck, *Optisys*

Sponsored By:

ROHDE&SCHWARZ
Make ideas real

everythingRF

SAN ANTONIO 2027

IMS

REMEMBER TO SAVE THE DATE 23–28 MAY 2027

The IEEE International MTT Symposia (IMS) (www.ims-ieee.org) is the Microwave Theory and Technology Society's flagship symposia and the world's largest industry exhibition highlighting radio frequency (RF) technology, systems and applications. We celebrate the 75th anniversary of the MTT Society in 2027 and look forward to reflecting on our past, present and future, while meeting in San Antonio Texas.

IMS2027 starts the week with IEEE MTT-S RF Integrated Circuits (RFIC) Symposium and follows with IEEE MTT-S RF Systems & Applications (RFSA) Symposium and IEEE MTT-S RF Technology & Techniques (RFTT) Symposium. The week concludes with the Automatic Radio Frequency Techniques Group (ARFTG) Microwave Measurement Conference.

For more information: ims-ieee.org

RFIC Radio Frequency Integrated Circuits

RFSA Radio Frequency Systems & Applications

RFTT Radio Frequency Technology & Techniques

ARFTG

151AB

Th2A: Sub-THz and THz Circuits and Components

Chair: Hamed Rahmani, *New York University*
Co-Chair: Chun-Hsing Li, *National Taiwan University*

10:10 – 10:20

Th2A-1: A Sub-mmW Receiver MMIC Achieving a 6.8-dB Average Noise Figure Over a >190-GHz Bandwidth

Fabian Thome, *Fraunhofer IAF*; Patrick Umbach, *Fraunhofer Institute for Applied Solid State Physics*; Arnulf Leuther, *Fraunhofer IAF*

10:30 – 10:40

Th2A-2: A 265–317-GHz Frequency Doubler with an Asymmetric Marchand Balun Achieving >40-dBc Fundamental Rejection in 65-nm CMOS

W. Keum, *Korea Univ.*; J. Yoo, *Samsung*; J. Lee, *Korea Univ.*; M. Choi, *Korea Univ.*; J.-S. Rieh, *Korea Univ.*

10:50 – 11:00

Th2A-3: A 1-V, 19.2-mW, 308-GHz Push-Push Balanced Colpitts Oscillator in 70-nm GaAs pHEMT Technology

C.-J. Wu, *National Taiwan Univ.*; Y.-C. Lin, *National Taiwan Univ.*; X. Jiang, *National Taiwan Univ.*; J.-T. Chung, *WIN Semiconductors*; L.-C. Chang, *WIN Semiconductors*; L.-Y. Tseng, *WIN Semiconductors*; A.Y.-K. Chen, *Univ. of California, Santa Cruz*; C.-T.M. Wu, *National Taiwan Univ.*

11:10 – 11:20

Th2A-4: A 480–530GHz Balanced Frequency Quadrupler Based on Schottky Varactor Diodes Integrated on a Micromachined Silicon Membrane

R. Zhou, *Univ. of Virginia*; Y. Cetin, *Univ. of Virginia*; C.M. Moore, *Univ. of Virginia*; M. Cyberey, *Univ. of Virginia*; M. Bauwens, *Dominion MicroProbes*; N.S. Barker, *Univ. of Virginia*; A. Lichtenberger, *Univ. of Virginia*; R.M. Weikle II, *Univ. of Virginia*

11:30 – 11:40

Th2A-5: Metallized 3D Printed THz Hollow Waveguide Components

A. Garcia-Tejero, *HUBER+SUHNER*; R. Weber, *HUBER+SUHNER*; S. Yolcu, *HUBER+SUHNER*; D. Ievlev, *HUBER+SUHNER*; D. Götzl, *HUBER+SUHNER*; M. Buhmann, *HUBER+SUHNER*; F. Merli, *HUBER+SUHNER*

153AB

Th2B: High Efficiency and Load-Tolerant Power Amplifiers for HF-VHF-UHF

Chair: Frederick Raab, *Green Mountain Radio Research*
Co-Chair: Ramon Beltran, *Ophir RF*

10:10 – 10:20

Th2B-1: KEYNOTE: Aurora: Advancing the Radio Art

T. Brock-Fisher, *Consultant*

10:30 – 10:40

Th2B-2: High-Efficiency VHF Class-Φ_2 Power Amplifier with a GaN Sinusoidal Resonant Gate Driver

Y. Huang, *PolyU*; J. Bi, *PolyU*; X. Zhou, *PolyU*; S. Chen, *Hangzhou Dianzi University*; W.S. Chan, *CityUHK*

10:50 – 11:00

Th2B-3: A Frequency-Tunable GaN Switching Power Amplifier with Digital Pulse Encoding

G. Ehlert, *FAU Erlangen-Nürnberg*; J.P. Wiedemann, *FAU Erlangen-Nürnberg*; M. Loose, *FAU Erlangen-Nürnberg*; A. Deublein, *FAU Erlangen-Nürnberg*; D. Riess, *FAU Erlangen-Nürnberg*; N. Franchi, *FAU Erlangen-Nürnberg*; G. Fischer, *FAU Erlangen-Nürnberg*

11:10 – 11:20

Th2B-4: Towards Solid-State High-Power 13.56MHz Impedance Matching Using Self-Biased SiC-MOSFET-Switched Capacitors

N. Schwab, *FAU Erlangen-Nürnberg*; P. Vennemann, *Aurion Anlagentechnik*; R. Gesche, *Aurion Anlagentechnik*; C. Carlowitz, *FAU Erlangen-Nürnberg*; M. Vossiek, *FAU Erlangen-Nürnberg*

11:30 – 11:40

Th2B-5: A 20–500 MHz, 250W Adaptive Bias Class-G Balanced GaN Power Amplifier with Inherent Resilience to Antenna VSWR

Assaf Azoulay, *Tel-Aviv Univ.*; Nimrod Ginzberg, *Tel-Aviv Univ.*

156AB

Th2C: Advances in Design and Synthesis Methods for Planar Filters with Enhanced Performance

Chair: Tao Yang, *UESTC*
Co-Chair: Photos Vryonides, *Frederick University*

10:10 – 10:20

Th2C-1: Quasi-Reflectionless Short Through-Line Based Bandstop Filters

Adnan Nadeem, *Frederick Research Center*; Symeon Nikolaou, *Frederick Research Center*; Photos Vryonides, *Frederick University*; Dimitra Psychogiou, *Univ. College Cork*

10:30 – 10:40

Th2C-2: Passband Flatness Optimization of Low-Q Filters via Direct Lossy Coupling Matrix Synthesis

C. Yi, *UESTC*; B. Liu, *UESTC*; Y. Ning, *UESTC*; P.-L. Chi, *NYCU*; T. Yang, *UESTC*

10:50 – 11:00

Th2C-3: Bandpass Filter With Wideband Flat Group Delay Based on Tapped Feeding and Short-Stub-Loaded Unequal-Length Coupled Lines

S. Kim, *Yonsei Univ.*; D. Lee, *Yonsei Univ.*; B.-W. Min, *Yonsei Univ.*

11:10 – 11:20

Th2C-4: Beyond Conventional Transmission Zero Allocation: Synthesis of Acoustic Wave Ladder Filters via Out-of-Band Complex Reflection Zeros

Y. Zeng, *SUSTech*; Z. Luo, *SUSTech*; M. Yu, *SUSTech*

157AB

Th2D: Device and Technology Advances for RF Switches and Power Amplification

Chair: Ian Rippke, *Keysight Technologies*
Co-Chair: Wolfram Stiebler, *Raytheon Technologies*

10:10 – 10:20

Th2D-1: Substrate-Dependent Loss in High-Stacked Switch Branches in 28nm FD-SOI CMOS on Standard and High-Resistivity Substrates

M. Rack, *UCLouvain*; M. Nabet, *UCLouvain*; D. Lederer, *UCLouvain*; A. Cathelin, *STMicroelectronics*; J.-P. Raskin, *UCLouvain*

10:30 – 10:40

Th2D-2: Low-Loss 25GHz RF Switches in 300mm GaN-on-Si Technology with 0.4dB Insertion Loss and 70fs Ron×Coff

S. Hwangbo, *Intel*; Q. Yu, *Intel*; I. Momson, *Intel*; S. Rami, *Intel*; H. Vora, *Intel*; P. Golani, *Intel*; M. Beumer, *Intel*; P. Koirala, *Intel*; A. Zubair, *Intel*; S. Bader, *Intel*; M. Radosavljevic, *Intel*; H.W. Then, *Intel*

10:50 – 11:00

Th2D-3: GaN Non-Volatile RF Switch Based on Bipolar Charge Trapping for Reconfigurable RF FEMs

Y. Liu, *HKUST*; Y. Zhang, *HKUST*; T. Chen, *HKUST*; Y. Cheng, *HKUST*; Y.H. Ng, *HKUST*; L. Deng, *HKUST*; Y. Geng, *HKUST*; Z. Wu, *HKUST*; L. Gao, *HKUST*; K.J. Chen, *HKUST*

11:10 – 11:20

Th2D-4: Highly Linear AlN/GaN/AlGaN HEMTs Demonstrated Using 40-GHz Two-Tone Active Load-Pull with Record PAE at 30dBc C/IM3

L. Ben Hammou, *IEMN (UMR 8520)*; F. Grandpierron, *IEMN (UMR 8520)*; E. Carneiro, *IEMN (UMR 8520)*; K. Ziouche, *IEMN (UMR 8520)*; E. Okada, *IEMN (UMR 8520)*; F. Medjdoub, *IEMN (UMR 8520)*

11:30 – 11:40

Th2D-5: GaN Power Bars for Microwave Power: Modeling and Validation

V. Vadalà, *Università di Milano-Bicocca*; A. Raffo, *Università di Ferrara*; R. Namba, *Sumitomo Electric*; G. Bosi, *Università di Milano-Bicocca*; K. Kikuchi, *Sumitomo Electric*; M. Marchetti, *Maury Microwave*; H. Yamamoto, *Sumitomo Electric*; G. Vannini, *Università di Ferrara*

Inter-Society Panel Session: Carbon Footprint of RF Technologies

12:00 – 13:30 | THURSDAY, 11 JUNE 2026 | ROOM: 156C

This inter-society technical panel will emphasize the urgent need for sustainable growth within the RF industry, particularly through the development of standards for measuring the carbon footprint of RF technologies. Today, the environmental impact of RF systems extends across the full lifecycle—from manufacturing processes and material usage to deployment, energy consumption, and long-term operation. However, the absence of consistent measurement frameworks makes it difficult to evaluate, compare, and ultimately reduce these impacts in a systematic way. The panel will bring together experts from multiple societies to explore how collective action can establish widely accepted methodologies and best practices for carbon footprint assessment in RF technologies. By working across organizational boundaries, societies can not only help define these standards but also provide strategic guidance to industry, academia, and policymakers. Such efforts are critical to ensuring that sustainability becomes a foundational consideration in future RF innovations rather than an afterthought. Ultimately, the discussion will highlight how professional societies can play a pivotal role in shaping a greener future for the RF industry—by fostering collaboration, driving standardization, and offering direction to reduce carbon emissions across both manufacturing and operational domains.

Organizers: Sulekha Chattopadhyay, *Environmental Engineering and Science Academy, Department of Electrical Engineering;*
Ke Wu, *Center of Radiofrequency Electronics Research (CREER) of Quebec*

Panelists:

Jungchih Chiao, *Southern Methodist Univ.*

Ravinder Dahiya, *Northeastern University*

Mahmoud Wagih, *University of Glasgow, UK*

Pieter Cardinael, *University of Louvain, Belgium*

Erik Heilman, *IEEE-USA*

Patrick Herring, *Glimpse*

RFTT Panel Session: Will ML/AI really change our proach to device modelling and circuit design?

12:00 – 13:30 | THURSDAY 11, JUNE 2026 | ROOM: 157C

Artificial Intelligence is revolutionizing microwave circuit design, just as it is transforming other scientific and industrial domains. The growing number of published research papers demonstrates that the microwave community is actively embracing AI and ML across a wide spectrum of applications—from novel device modeling to virtual data generation, data management, and advanced EDA tools for circuit optimization. New commercial solutions for ML-assisted circuit design, already offer first-pass, fully automated layout generation, multi-objective optimization, and seamless multi-platform integration from device to system level. This evolving landscape suggests a progressive shift in researchers' focus from traditional design practices toward a complex interplay involving the development of custom, high-accuracy, dynamically reconfigurable models, advanced EDA algorithms, and ML workflows. Are we ready for this revolution? Can we truly trust AI/ML-driven design? Will AI really help to uncover entirely new device concepts and circuit topologies, or will it remain a highly capable design assistant? What tools and skills are needed to become active contributors in this new paradigm? This panel will bring together experts from foundries, model development, and EDA vendors to critically examine the pros and cons, practical implications, IP constraints and future directions of AI-assisted microwave circuit design.

Organizers: Simona Donati Guerrieri, *Politecnico di Torino, Italy;* **Qi-Jun Zhang,** *Carleton University, Canada*

Panelists:

David Danzilio, *WIN Semiconductors*
Valeria Di Giacomo Brunel, *United Monolithic Semiconductors*

Alexander Petr, *Keysight Technologies*
Giorgia Zucchelli, *MathWorks*

Eduard Heidebrecht, *RapidRF AI*
Kaushik Sengupta, *Princeton University, USA*

REMINDER: IMS VIRTUAL RESOURCES

Don't forget to access to the Virtual Resources by 31 July 2026! This is where you can download the Symposium Proceedings and Workshop Proceedings. You will need the email you used to register and your badge or registration number.

https://ims-ieee.org/virtualresources

13:30
13:40
13:50
14:00
14:10
14:20
14:30
14:40
14:50
15:00
15:10

151AB

Th3A: Hybrid High-Power Amplifier Techniques

Chair: Yulong Zhao, *Skyworks Solutions, Inc.*
Co-Chair: Michael Roberg, *Qorvo*

Th3A-1: Baseband Impedance Design Space for Concurrent Band PA Operation

Sayedmohammad Daneshvar Farzanegan, *Univ. of Aveiro*; Filipe Barradas, *Instituto De Telecomunicacoes*; Luis Cotimos Nunes, *Instituto De Telecomunicacoes*; Pedro Cabral, *Instituto De Telecomunicacoes*; Jose Pedro, *Univ. of Aveiro*

Th3A-2: Load-Modulated Hexagonal-Coupler-Based Power Amplifier (LMHA) for Extended Power-Back-Off Range

M. Sedaghat, *Northeastern University* ; P. Gong, *Northeastern University* ; K. Chen, *Northeastern University*

Th3A-3: A 0.7–4.9GHz Multi-Octave Broadband Power Amplifier Based on the Bandwidth Extension of the Quarterwave Transmission Line

Y.C. Choi, *Sungkyunkwan Univ.*; Y. Lee, *Sungkyunkwan Univ.*; Y. Ju, *Sungkyunkwan Univ.*; S. Bin, *Sungkyunkwan Univ.*; K. Bae, *Sungkyunkwan Univ.*; M. Ahn, *Sungkyunkwan Univ.*; Y. Yang, *Sungkyunkwan Univ.*

Th3A-4: A Broadband Inverse-Balun Load-Modulated Power Amplifier (IBMA) Covering 1.3–3.3GHz

P. Gong, *Northeastern University* ; N.B. Vangipurapu, *Univ. of Central Florida*; S.F.B. Faruquee, *Northeastern University* ; K. Chen, *Northeastern University*

153AB

Th3B: Linearization Techniques for MIMO Arrays

Chair: Rajah Vysyaraju, *MACOM*
Co-Chair: Luis C. Nunes, *Universidade de Aveiro*

Th3B-1: A Two-Tier Low-Complexity Linearization Architecture for Fully Digital mMIMO Transmitters

Jin Gyu Lim, *Univ. of Waterloo*; Ahmed Ben Ayed, *Univ. of Waterloo*; Slim Boumaiza, *Univ. of Waterloo*

Th3B-2: Digital Post-Distortion for MIMO Receiver Linearization Under Strong Same-Frequency Interference

Shipra, *Chalmers Univ. of Technology*; H. Taherisefat, *Chalmers Univ. of Technology*; K. Buisman, *Chalmers Univ. of Technology*; T. Eriksson, *Chalmers Univ. of Technology*

Th3B-3: Over-the-Air Linearization of Phased Array Transmitters Under Load Modulation: One-Stage LUT-Aided Approach

J. Fernandez, *Tampere Univ.*; L. Anttila, *Tampere Univ.*; Y. Wang, *Tampere Univ.*; K. Buisman, *Univ. of Surrey*; A. Fischer-Bühner, *Tampere Univ.*; B. Jelonnek, *Nokia* ; M. Valkama, *Tampere Univ.*

Th3B-4: A Broadband Linearization Technique for Doherty Power Amplifiers Using Adaptive Impedance Compensation

J. Wang, *UESTC*; X. Lv, *UESTC*; S. He, *UESTC*; C. Li, *UESTC*

Th3B-5: Piecewise Diode-Based Analog Predistorter for High-Accuracy Wideband RF Power Amplifier Linearization

Md.S.I. Borno, *Villanova Univ.*; T. Cappello, *Villanova Univ.*

156AB

Th3C: Innovative Non-Planar Passive Components and Sensors

Chair: Luca Perregrini, *Università di Pavia*
Co-Chair: Mohamed Fahmi, *DRDC*

Th3C-1: Design of a Compact Scalable Gysel Power Combiner in Rectangular Coaxial Guide for High Power Applications

Manoj Kumar, *Indian Institute of Technology Roorkee*; Gowrish Basavarajappa, *Indian Institute of Technology Roorkee*

Th3C-2: Carbon Coating to Mitigate Multipactor Effect in Microwave Filters

E. Rius, *Lab-STICC (UMR 6285)*; J. Benedicto, *Lab-STICC (UMR 6285)*; J.-F. Favennec, *Lab-STICC (UMR 6285)*; A.B. Bernal, *Ontario Tech University*; C.H. Oh, *NTU*; A. Palaniappan, *NTU*; S.H. Tsang, *NTU*; E.H.T. Teo, *NTU*; M. Belhaj, *ONERA*; S. Dadouch, *ONERA*; N. Fil, *CNES*

Th3C-3: Liquid Metal-Enabled Waveguide Coupler with Continuously-Tunable Power Division Ratio

B.E. Esteves, *Univ. College Cork*; D. Psychogiou, *Univ. College Cork*

Th3C-4: A Hybrid Semi-Lumped/Cavity Multimode Resonator and Application to Sensing Based on Symmetry Truncation

K. Adolphs-Saura, *Univ. Autònoma de Barcelona*; F. Paredes, *Univ. Autònoma de Barcelona*; A. Karami-Horestani, *Univ. Autònoma de Barcelona*; F. Martín, *Univ. Autònoma de Barcelona*

Th3C-5: Design of Reactive Combiners with Enhanced Graceful Degradation

A. Morini, *Università Politecnica delle Marche*; M. Farina, *Università Politecnica delle Marche*; D. Mencarelli, *Università Politecnica delle Marche*; L. Russo, *ST4I*; O. Bouzekri, *ESA-ESTEC*; P. Angeletti, *ESA-ESTEC*; G. Amendola, *Università della Calabria*

157AB

Th3D: Field Analysis and Experimental Characterization for Advanced Applications

Chair: Zhi Jackie Yao, *Lawrence Berkeley National Laboratory*
Co-Chair: George Shaker, *University of Waterloo*

Th3D-1: Mixed-Mode Distributed Equivalent Circuit Model of PCIe 7.0 Connector for Accelerating 128 GT/s PAM4 Signal Integrity Analysis

K. Song, *University of Illinois Urbana-Champaign*; Y. He, *University of Illinois Urbana-Champaign*; J. Wang, *Foxconn Interconnect Technology*; M. Feng, *University of Illinois Urbana-Champaign*

Th3D-2: Near-End Crosstalk Suppression in Coupled Contra-Directional Chern Topological Edge Modes

M.M. Elesawy, *Military Technical College*; A.D. Santiago-Vargas, *Purdue Univ.*; M.F. Hagag, *Military Technical College*; H.M. Mohamed, *Military Technical College*; D. Peroulis, *Purdue Univ.*; A. Abdelraheem, *Military Technical College*

Th3D-3: Experimental Validation of Surface Roughness Effects on Effective Conductivity and Related Applications

F. Sepaintner, *Technische Hochschule Deggendorf*; F.X. Roehrl, *Rohde & Schwarz*; J. Cuper, *QWED*; M. Olszewska-Placha, *QWED*; W. Bogner, *Technische Hochschule Deggendorf*; S. Zorn, *Rohde & Schwarz*

Th3D-4: Modeling and Experimental Verification of Time-Varying Ferrite-Based Microstrip Line

S.H. Hosseini Biuki, *Sharif Univ. of Technology*; M. Rezaei Golghand, *KTH*; M. Memarian, *Sharif Univ. of Technology*; B. Rejaei, *Sharif Univ. of Technology*; J. Oberhammer, *KTH*

Th3D-5: Blind-Scan Angle Estimation for Surface-Mounted Antenna Arrays Using a Quasi-Analytical Approach

O. Wadah, *Analog Devices*; *I.A. Eshrah, Analog Devices*

Startup Panel Session: From Vision to Profitability: The Startup Journey

14:02 – 15:00 | THURSDAY, 11 JUNE 2026

Abstract: The startup world is fast-paced, uncertain, and requires constant adaptability. Do you understand the mindset shift needed to thrive in such an environment? Join us to hear from successful founders, their investors, and experts on how they navigated their journeys from vision to profitability.

LAILA SHALMAN

Moderator: Dr. Laila Salman, *Synopsys Inc.*

Panelists:

Duncan Haldane, *JITX*	**Cameron Hill,** *LintrinsIC Semiconductors*	**Michael Hollenbeck,** *Optisys LLC*	**Scarlett Koller,** *Mithril*	**Isar Mostafanezhad,** *Nalu Scientific, LLC.*

DUNCAN HALDANE

CAMERON HILL

MICHAEL HOLLENBECK

SCARLETT KOLLER

ISAR MOSTAFANEZHAD

107TH ARFTG MICROWAVE MEASUREMENT CONFERENCE

NVNA USERS' FORUM open to all conference attendees

Thursday, 11 June 2026	15:00 – 16:15	WESTIN BOSTON SEAPORT HOTEL, COMMONWEALTH | AB

ON-WAFER USERS' FORUM open to all conference attendees

Thursday, 11 June 2026	16:15 – 17:30	WESTIN BOSTON SEAPORT HOTEL, COMMONWEALTH | AB

WHAT NOT TO MISS WHEN VISITING BOSTON

Boston is one of America's most walkable, history-packed cities, and it rewards visitors who slow down and pay attention. Whether you're a history buff, a foodie, a sports fanatic, or just someone who appreciates a beautiful waterfront, the city delivers on every front. Here's what you absolutely shouldn't skip.

Walk the Freedom Trail. This 2.5-mile red-brick path winds through 16 historic sites and is the single best introduction to the city. Starting at Boston Common — the oldest public park in the country — the trail takes you past the Massachusetts State House with its gleaming gold dome, the Old South Meeting House where colonists gathered before the Boston Tea Party, the Paul Revere House in the North End, and ultimately across the Charlestown Bridge to the USS Constitution, the world's oldest commissioned naval vessel still afloat. You can do it self-guided or join one of the costumed ranger tours for extra color and storytelling.

Explore the North End. Boston's oldest neighborhood and its Little Italy, the North End is a sensory delight. Hanover Street is lined with family-run Italian restaurants, bakeries, and cafés that have been fixtures for generations. Don't leave without stopping into Mike's Pastry or Modern Pastry for a cannoli — locals are fiercely divided on which is better, so you may as well try both. On weekends in summer, the neighborhood hosts lively street festivals honoring various patron saints, complete with music, food stalls, and processions.

Visit Faneuil Hall and Quincy Market. Faneuil Hall has been a marketplace and public meeting place since 1742, and it still buzzes with energy today. The adjacent Quincy Market building is a great spot to graze — there are dozens of food stalls offering everything from New England clam chowder to lobster rolls to local craft beers. It can get touristy, but the architecture and atmosphere are genuinely worth seeing.

Spend time in the Museum of Fine Arts. The MFA is world-class, with one of the finest collections of Japanese art outside Japan, an outstanding Impressionist gallery, and exceptional American and Egyptian collections. Plan for at least half a day — it's far larger than it looks from the outside. The museum also runs evening events and special exhibitions throughout the year.

Get out on the water. Boston Harbor is beautiful, and there are several ways to enjoy it. Take a ferry to the Boston Harbor Islands for hiking and stunning views of the skyline, or hop aboard a whale-watching cruise (May through October) for an unforgettable few hours offshore. Even a simple ride on the MBTA ferry from Long Wharf to the Charlestown Navy Yard gives you gorgeous views for just a few dollars.

Catch a game at Fenway Park. Even if you're not a baseball fan, attending a Red Sox game at Fenway — the oldest Major League Baseball park in the country, opened in 1912 — is a bucket-list experience. The Green Monster left-field wall, the cramped but charming seats, and the electric atmosphere of a sellout crowd make it unlike any other ballpark. Tours are available on non-game days if you can't snag tickets.

Stroll through Back Bay and Beacon Hill. These two neighborhoods offer Boston's most picturesque streetscapes. Back Bay's Commonwealth Avenue Mall is a grand, tree-lined boulevard lined with Victorian brownstones, while Beacon Hill's gas-lit cobblestone streets and window boxes feel like a step back in time. Acorn Street — a narrow, cobbled lane in Beacon Hill — is reportedly the most photographed street in the United States, and it earns the reputation.

Eat as much seafood as possible. Boston's seafood scene is exceptional. A bowl of proper New England clam chowder (creamy, not tomato-based) is non-negotiable, and a fresh lobster roll — whether served warm with butter or cold with mayo — is equally essential. For a classic, no-frills experience, head to Legal Sea Foods or one of the many neighborhood fish shacks in the Seaport District.

Boston is compact enough that you can cover a tremendous amount on foot over a long weekend, but rich enough that you could easily spend a week and still find something new every day. Lean into the history, eat well, and don't be afraid to wander — some of the best discoveries happen just off the main path.

107th ARFTG Microwave Measurement Conference

Measuring the Future: High-Frequency Metrology for Intelligent, Connected, and Quantum Worlds

08:00 – 15:00 | FRIDAY, 12 JUNE 2026 | GRAND BALLROOM

Session A: Metrology and Traceability of Electrical Quantities

A-1 **08:00 – 08:40**	**Keynote: The Evolution of Wafer-Level Metrology** Nathan D. Orloff, *NIST*
A-2 **08:40 – 09:00**	**VNA Tools: Noise Parameter Uncertainty Calculation** Michael Wollensack, *Federal Institute of Metrology METAS**; Daniel Stalder, *Federal Institute of Metrology METAS*; Johannes Hoffmann, *Federal Institute of Metrology METAS*; Markus Zeier, *Federal Institute of Metrology METAS*
A-3 **09:00 – 09:20**	**Design and RF Performance Validation of a New Miniature Rectangular Waveguide Flange for Millimeter-wave Frequencies and Above** James Skinner, *National Physical Laboratory**; Dave Richardson, *Flann Microwave Ltd.*; Paul Hague, *Flann Microwave Ltd.*; Nick Ridler, *National Physical Laboratory*
A-4 **09:20-09:40**	**Interlaboratory Comparison and Reproducibility of On-Wafer S-Parameter Measurements up to 220 GHz** Liam Ausden, *National Physical Laboratory**; Xiaobang Shang, *National Physical Labo-ratory*; Hyunji Koo, *Korea Research Institute of Standards and Science*; Hong Eun Choi, *Korea Research Institute of Standards and Science*; Jerdvisanop Chakarothai, *National Institute of Information and Communications Technology*; Shinsuke Hara, *National Insti-tute of Information and Communications Technology*; Tze-An Liu, *Industrial Technology Research Institute*; Yi Chen, *Industrial Technology Research Institute*; Leo Wang, *MPI Corporation*; Andrej Rumiantsev, *MPI Corporation*

09:40 – 09:50 | Break — Exhibitors Brief Introduction | All Exhibitors

09:50 – 10:40 | Break — Exhibits, Interactive Forum | Joel Dunsmore, *ARFTG Exhibits*

Session B: Intelligent Automation for Microwave Measurements

B-1 **10:40 – 11:00**	**A Fast and Reliable RF Probing Technique For Autonomous On-Wafer S-parameter Measurements** Faisal Mubarak, *VSL**; Devika Poduval, *VSL*; Akhilesh Khot, *VSL*; Federica Gugole, *VSL*; Shima Rajabali, *Delft University of Technology*; Marco Spirito, *Delft University of Technology*
B-2 **11:00 – 11:20**	**Automated Planarization of GSG Probes for On-Wafer RF Measurements Us-ing a Nanorobotic Probe Station** Kamel Haddadi, *University of Lille**; Gia Ngoc Phung, *PTB*; Clement Lenoir, *IEMN*; Mohamed Sebbache, *IEMN*
B-3 Student **11:20 – 11:40**	**Calibration of Scanning Microwave Microscopy via Substrate-referenced Machine Learning** Yawei Zhang, *Cornell University**; Xiaopeng Wang, *Cornell*; Marco Farina, *Universita Politecnica delle Marche*; James Hwang, *Cornell University*; Yunyue Zhu, *Massachusetts Institute of Technology*; Nannan Mao, *Massachusetts Institute of Technology*; Peng Wu, *Massachusetts Institute of Technology*; Jing Kong, *Massachusetts Institute of Technology*

11:40 – 13:00 | ARFTG-107 Awards Luncheon
Patrick Roblin, *ARFTG President*; Dave Blackham, *ARFTG Awards*

Session C: Over-the-Air and Non-Linear Measurements

C-1 Student **13:00 – 13:20**	**2-67 GHz Time-Domain Measurement Setup for Non-Linear Microwave De-vice Characterization Using Wideband Modulations** Nejem Ben-Youssef, *University of Limoges**; Clement Hallepee, *XLIM*; Damien Passerieux, *XLIM*; Guillaume Neveux, *XLIM*; Pierre Medrel, *XLIM*; Denis Barataud, *XLIM*
C-2 **13:20 – 13:40**	**Wideband NPR Characterization of a Ka-Band Power Amplifier Using a Sin-gle "Multi-Notch" Stimulus** Ricardo Escobar, *Thales Alenia Space**; Tibault Reveyrand, *XLIM*; Sébastien Mons, *XLIM*; Denis Barataud, *XLIM*; Jean-François Villemazet, *Thales Alenia Space*
C-3 **13:40 – 14:00**	**The Effect of Switch-Terms Correction on the Calibration Accuracy of Oscilloscope-Based NVNAs** Daniel Alonso-Tejera, *Center for Scientific Research and Higher Education of Ensenada, CICESE**; J. Apolinar Reynoso-Hernández, *CICESE*; Edgar Hernández-Limón, *CICESE*; Diana Soto-Castañeda, *CICESE*; José Raúl Loo-Yau, *Cinvestav-Guadalajara*; M. Carmen Maya-Sánchez, *CICESE*; Salvador Villarreal-Reyes, *CICESE*
C-4 **14:00-14:20**	**Minimizing Uncertainty in Dual-Polarization Synthetic-Aperture-Based Millimeter-Wave OTA Measurements** Paritosh Manurkar, *CU Boulder**; Kate Remley, *NIST*; Dylan Williams, *NIST*; Robert Horansky, *NIST*
C-5 Student **14:20-14:40**	**Reliable RF-probe Connection During a Temperature-Controlled OTA D-band Array Antenna Measurement** Lieke Geubbels, *Eindhoven University of Technology**; Natsumi Minamitani, *Murata Manufacturing Co., Ltd.*; Bart Smolders, *Eindhoven University of Technology*; Elmine Meyer, *Eindhoven University of Technology*; Ad Reniers, *Eindhoven University of Technology*

14:40 – 15:30 | Break — Exhibits, Interactive Forum | Joel Dunsmore, *ARFTG Exhibits*

SESSION D: On-Wafer Measurements and Calibration

D-1 Student 15:30 – 15:50	**Analysis of Multiline Calibration Algorithms for Various Transmission Line Types up to 220 GHz** Gregor Streitenberger, *Physikalisch-Technische Bundesanstalt**; Gia Ngoc Phung, *Physikalisch-Technische Bundesanstalt*; Ahmed Sayegh, *Physikalisch-Technische Bundesanstalt*; Tianze Li, *Cornell University*; James C. M. Hwang, *Cornell University*
D2-Student 15:50 – 16:10	**Inter-Laboratory Benchmarking of Continuous-Band 220 GHz S-Parameter Measurements of Millimeter-Wave GaN HEMTs** Thomas Bonnen, *Michigan State University**; Rob Jones, *National Institute of Standards and Technology*; Jerome Cheron, *National Institute of Standards and Technology*; Benjamin Jamroz, *National Institute of Standards and Technology*; Nicholas Miller, *Michigan State University*
D-3 16:10 – 16:30	**A Model-Centric Approach for Diagnosing Calibration Errors in RF and mm-wave Device Characterization** Jeffrey Garrett, *Intel*; Mengqi Cui, *MPI Corporation*; Paulius Sakalas, *MPI Corporation*; Andrej Rumiantsev, *MPI Corporation**
D-4 16:30 – 16:50	**Extracting Graphene Sheet Resistance in the WR-5 Band Using Graphene Embedded CPW Shunt Structures on High-Resistivity Silicon** Zhuoya Zhou, *The University of Manchester*; Zirui Zhang, *The University of Manchester**; Liam Ausden, *The National Physical Laboratory*; Xiaobang Shang, *The National Physical Laboratory*; Yu-Wei Kang, *The University of Manchester*; Guangda Dai, *The University of Manchester*; Zhirun Hu, *The University of Manchester*

16:50 – 17:00 | ARFTG-107 Conference Closing Notes | Andrej Rumiantsev, *General Chair*

17:00 | End of the ARFTG-107 Conference

Interactive Forum

P1 — EM Assisted Open-Short De-embedding Technique for 16nm FinFET Technology
Ciro Esposito, *University of Milano-Bicocca**; Federico D'Aniello, *University of Milano-Bicocca*; Gianni Bosi, *University of Milano-Bicocca*; Lorenzo Stevenazzi, *University of Milano-Bicocca*; Andrea Baschirotto, *University of Milano-Bicocca*; Valeria Vadalà, *University of Milano-Bicocca*

P2-S— Measurement Uncertainties of Highly Reflective Low-Noise-Amplifiers for Magnetic Resonance Imaging
Fabian Schneider, *Otto-von-Guericke-Universität Magdeburg**

P3-S — Preliminary Results on Cryogenic On-wafer Noise Parameter Measure-ments
James Kelly, *University of Glasgow**; Afesomeh Ofiare, *University of Glasgow*; Diogo Ribeiro, *Maury Microwave*; Steve Dudkiewicz, *Maury Microwave*; Nick Ridler, *National Physical Laboratory*; Chong Li, *University of Glasgow*

P4 — Dielectric Waveguide-Based Test Probes for Millimeter-Wave Range Test and Measurement Instrumentation
Guillermo CARPINTERO-DEL-BARRIO, *Universidad Carlos III de Madrid**; ASHISH KUMAR, *Universidad Carlos III de Madrid*; SERGIO RIVERA, *Universidad Carlos III de Madrid*; JIALE TIAN, *Universidad Carlos III de Madrid*; LUIS GONZALEZ GUERRERO, *Universidad Carlos III de Madrid*; MUHSIN ALI, *Leapwave technologies*; Daniel Gallego Cabo, *Leapwave technologies*; Alejandro Rivera Lavado, *Leapwave technologies*

P5 — Detection and Resolution of Low-Contrast Local Defects Using an Electro-magnetic Jet Lens Applied to RF Shielding Materials
Mathis Granger, *Université Jean Monnet**; Bruno Sauviac, *Université Jean Monnet*; Bernard Bayard, *Université Jean Monnet*

P6-S — Characterization of Magnetic Nanowire Array Materials Using Effective Thin Film Medium
MdToaha Anas, *University of Minnesota-Twin Cities**; Bethanie J.H. Stadler, *University of Minnesota-Twin Cities*; Rhonda R. Franklin, *University of Minnesota-Twin Cities*

IMS2026 EXHIBITORS

First-time exhibitors are highlighted in gold.

IMS2026 EXHIBITOR LIST AS OF 4 MAY 2026 | *For the most up-to-date information, please visit: ims-ieee.org*

2pi-Labs GmbH	15095
3D Glass Solutions Inc.	18018
3G Shielding Specialties	21104
3H Communication Systems	24085
3Rwave	14076
A.L.M.T. Corp./Sumitomo Electric USA	24030
Aaronia AG	23045
ACE-Accurate Circuit Engineering	13023
ACST GmbH	24020
Admotech Co. Ltd.	17017
Adsantec Inc.	24081
AdTech Ceramics	24078
Advanced Circuitry International	20019
Advanced Test Equipment Rentals	11020
Aec Connectors Co., Ltd	13097
AEM: Renaissance	12056
Aerowave Components LLC	12045
AFT microwave GmbH	24077
AGC Multi Material America Inc.	23057
Agile Microwave	12015
AI Technology Inc.	19104
A-INFO Inc.	11043
AJ Tuck Co.	14060
Altera	20108
Altum RF	22020
AMCOM Communications Inc.	11054
AMD	11045
American Fairfield Inc.	20107
American Standard Circuits	23056
Amphenol Printed Circuits	16054
Ampleon Netherlands BV	17048
Amplical	24095
AmpliTech Inc.	16084
Amtery Corporation	24018
Analog Devices Inc.	23035
Anatech Electronics Inc.	12091
Annapolis Micro Systems	19108
Anritsu	17054
Antennex BV	18031
AnTrust	20103
Apollo Microwaves	11031
Artech House	23036
ASI & Anoison Electronics LLC	21057
ASI & Liberty Test Equipment	20060
Association of Old Crows	17027
Astra Wave Technologies Inc.	11040
ATEK MIDAS	11044
ATxTel	12037
B&Z Technologies LLC	19023
BAE Systems	16103
Bascom Hunter Technologies, Inc.	14032
Beijing Aumiwalker Technology CO., LTD	12092
Beijing Yuanlu Hongyuan Electronic Technology	24098
Berkeley Nucleonics Corporation (BNC)	23038
Bird	17103
Blueshift	11077
Bolt Graphics	15082
BOSUNG CONDUCTOR	17108
C/A Design	14095
Cadence	21070
Cadence	23096
CDM Inc.	22104
Century Seals Inc.	24102
Cernex / Cernexwave	24069
Chengdu Leader Microwave Technology Co. Ltd.	16099
Chengdu Zysen Technology Co., Ltd.	23107
Ciao Wireless Inc.	22027
Cinch Connectivity Solutions	15030
CML Micro	21082
Coilcraft	20070
Colorado Microcircuits Inc.	21105
Component Distributors Inc.	20098
COMSOL Inc.	22098
ConductRF / EAM	16095
Copper Mountain Technologies	21028
Cornes RF Engineering	11057
Corning Gilbert	24097
Corry Micronics	20046
COTS RF	20030
CPC Amps	24023
CPI Electron Device Business, Inc.	22030
CPS Technologies Corp.	17098
Crane Aerospace & Electronics	23053
Crystek Crystals Corp.	22076
Custom Cable Assemblies Inc.	15059
Custom Microwave Components Inc.	11016
CX Thin Films	23030
Dalian Dalicap Technology Co., Ltd	23097
Danyang Teruilai Electronics Co., Ltd.	17095
Dassault Systemes SIMULIA	14046
dB Control	21015
db design	13098
Delphi Engineering Group, Inc.	24026
Delta Circuits	12054
Delta Electronics Mfg. Corp.	15058
Denka Corporation	14078
Design Forge	19083
DeWeyl Tool Company	16016, 17015
Diamond Antenna & Microwave	15016
DIAMOND ENGINEERING INC	16104
Dino-Lite Scopes	13019
Diramics	19105
DiTom Microwave Inc.	14024
dSPACE Inc.	14099
EchoICS Inc.	13082H
Eclipse MDI	11018
ED2 Corporation	18112
EDS - Electronic Device Solution	23099
Egide USA	23098
Electro Rent Corp.	19029
Electro Technik Industries Inc	16045
Electronic Products (EPI)	11071
Electronics and Telecommunications Research Institute (ETRI)	23007
Element Six	19106
Elite RF	16025
Embry-Riddle Aeronautical University	21008
Eravant	18076
ERZIA	13047
ES Components	24039
ETS-Lindgren Inc.	12032
Eulex	20046
European Microwave Association	22056
European Microwave Week	22054
Evatec AG	15107
Everbeing International Corp.	15027
everything RF	24048
Exodus Advanced Communications	14016
EXXELIA	13083
F&K Delvotec Inc.	23032
Falcomm, Inc.	22082
Faraday Defense Corp.	23028
Farran Technology Ltd.	11050
FERMIONIC DESIGN INC	23105
Ferro Ceramic Grinding	24092
FILPAL (M) SDN. BHD.	11017
Filtronetics Inc.	24032
Filtronic	13018
Fine-Line Circuits Limited	12050
Finwave Semiconductor Inc.	12076
Flann	20023
Flexco Microwave Inc.	15015
Flexcompute	12080
Flexiramics B.V.	13082I
FMAX Technologies, Inc.	11047
Focus Microwaves Inc.	18048
FormFactor Inc.	19048
Fourier LLC	13082G
Fraunhofer IIS	15097
Frequencies-idea Technology Co., Ltd.	20105
Frontlynk Technologies Inc.	16047
Gannon & Scott	12077
Genmixtech	15104
GeoSync Microwave Inc.	19095
GGB Industries Inc.	15023
Glenair Inc.	15096
Global Communication Semiconductors	12060
GlobalFoundries	21018
GoEngineer	24104
Golden Devices GmbH	22103
Golden Loch Ind. Co. Ltd.	23019
Google	13029
Granite Technologies 13082L	
Greenray Industries Inc.	24076
GreenSource Fabrication LLC	12043
Guangdong DAPU Telecom Technology Co., Ltd.	20096
Guangdong Kingrun Technology Co.,Ltd.	14100
G-Way Solutions LLC	24037
Hangzhou Freqcontrol Electronic Technology Ltd.	14030
Harbour Industries	13053
HAROGIC	12084
HASCO Components - SSI Cable	16076
Herotek Inc.	24059
Hesse Mechatronics Inc.	22058
Hirose Electric Americas	23016
HJEMC	14096
HRL Laboratories	23090
Hughes Circuits Inc.	12053
Hybond Inc.	20032
HYPERLABS, Inc.	16019
HyperLight Corporation	19097
iCana Ltd.	12046
IHP GmbH	18029

IMS2026 EXHIBITORS

First-time exhibitors are highlighted in gold.

IMS2026 EXHIBITOR LIST AS OF 4 MAY 2026 | *For the most up-to-date information, please visit: ims-ieee.org*

Impulse Technologies Inc.	23082
IMST GmbH	17023
InCirT GmbH	13082D
Incize	24053
In Compliance Magazine	11026
Indium Corporation	21054
Inkbit	24106
Innertron Inc.	18019
Innovative Fabrication Corporation	11084
Innovative Power Products	24036
Innovative Thermal Solutions	13016
In-Phase Technologies Inc.	19017
iNRCORE Group	14070
Inspower Co. Ltd.	23023
Institute for NanoSystems Innovation at Northeastern University	21010
Insulated Wire Inc.	23077
Integra Technologies Inc.	21029
Intelligent RF Solutions	24107
International Manufacturing Services Inc.	12059
InTest Thermal Solutions	24017
IROM Tech Inc.	22106
Ironwave Technologies	23015
Ironwood Electronics	18016
ISI + BittWare	24019
Isola	19090
ITF Co. Ltd.	20024
JFW Industries Inc.	19016
Jiangsu CaiQin Technology Co. Ltd.	16026
JITX	13082C
Johanson Technology	22057
JQL Technologies Corp.	21075
JunCoax RF Technologies Co., Ltd.	15100
Junkosha Inc.	21025
Kayaku Advanced Materials	13099
Keenlion Microwave	15090
Keycom Corp.	24015
Keysight	19035
Knowles	15070
K-PA	24016
Kratos Microwave Electronics Division	17076
KRYTAR	13057
KVG Quartz Crystal Technology GmbH	24043
KYOCERA AVX	16075
Kyocera International Inc.	15076
LadyBug Technologies LLC	16023
Lake Shore Cryotronics Inc.	18032
Lanjian Electronics	14042
Laser Processing Technology Inc.	24075
Laser Thermal Analysis	12083
Leader Tech Inc.	11024
Lemco Precision Inc	21099
LEONARDO SPA	24087
LISAT	21098
Little Falls Alloys	24086
Logus Microwave	21023
Longtrox RF Scien-Tech Co., Ltd.	24046
Lorentz Solution Inc.	23054
Lotus Communication Systems Inc	22105
Low Noise Factory AB	18097
LPKF Laser & Electronics	18024
M2 Global Technology Ltd.	23075
MACOM	17035
Magvention	15028
Marki Microwave, LLC	20082
Massachusetts Bay Technologies	11072
MathWorks	18090
Maury Microwave	16027, 16028
MaXentric Technologies LLC	15077
MCV Microwave East Inc.	16100
MECA Electronics Inc.	19027
Mega Circuit Inc.	15041
MegaPhase	22023
Menlo Microsystems Inc.	13044
Mercury Systems	15054
Metamagnetics Inc	24088
MIcable Inc.	12023
Mician GmbH	20042
Micro Harmonics Corporation	23024
Micro Lambda Wireless Inc.	20054
Micro Mode Products	11075
Microchip Technology Inc.	19070
Micro-Coax	16054
MIcro-Precision Technologies	15106
Microsanj LLC	12027
Microsembly	11015
Micross	23042
Microwave Applications Group	24070
Microwave Communications Labs Inc.	22053
Microwave Development Labs	21058
Microwave Engineering Corp.	19103
Microwave Journal/Signal Integrity Journal	20029
Microwave Product Digest	17100
Microwave Techniques LLC	24024
Microwave Technology Corporation	24105
Microwavefilters & TVC S.r.l.	12024
MICZEN TECHNOLOGIES CO.,LTD.	12090
Miller MMIC, Inc	13076
MilliBox	13075
Millimeter Wave Products	13054
Mini-Circuits	19054
Mini-Systems Inc.	15026
Minteq	22107
Mitsui Chemicals,Inc.	24100
MMIILABORATORY Co., Ltd	18107
mmTron Inc.	22096
Modelithics Inc.	18028
Modular Components National, Inc	15050
Molex	22095
MONTANA INSTRUMENTS	24108
Mosaic Microsystems	24083
MOSIS 2.0 Prototyping Service	24084
Mouser Electronics	18017
MPG - Microwave Products Group	16057
MPI Corporation	18044
MRSI Mycronic	14025
Mtron	18025
MV Electronics	13015
Nanjing Jiexi Technologies Co., Ltd.	12089
Nanjing Yuehang Communication Technology Co. Ltd.	20106
Naprotek/Semigen	17024
Narda-MITEQ	18084
National Institute of Standards and Technology (NIST)	23008
National Radio Astronomy Observatory CDL	23010
National Taiwan University	23009
NEL Frequency Controls, Abracon	12016
Networks International Corp.	21041
NexWave Inc.	11037
NI (Now part of Emerson)	13070
Nine Fives	13082F
Nippon Electric Glass Co., Ltd.	14108
Nisshinbo Micro Devices Inc.	11060
Niterra North America,Inc.	21056
Noble Metal Services	17099
Noisewave Corporation	24095
Northeast Microelectronics Coalition (NEMC)	19111
Northern Waves AB	12049
Northrop Grumman	19030
NPI Services Inc	24091
NTT Innovative Devices Corporation	15105
Nullspace, Inc.	11048
Nuvotronics	16090
NWS	17107
Nxbeam Inc.	22019
Ohmega Ticer	20046
Ophir RF Inc.	16053
Optenni Ltd.	12079
Optiprint AG	24096
Orbis Systems Oy	11049
Orient Microwave Corp.	23020
Oso Semiconductor	13082E
Otava RF	15029
Pacific Microchip Corp.	11030
Palomar Technologies	20027
Paricon Technologies Corporation	11053
Pasquali Microwave Systems	11070
Passive Plus	14070
Pasternack, an Infinite Electronics company	17082
PCB Technologies	19096
Phase Sensitive Innovations	11027
Philowave	13082A
Pickering Interfaces	14104
Pico Technology	22024
Piconics Inc.	15024
Pivotone Communication Technologies, Inc.	24082
Planar Monolithics (PMI)	20046
PlaneWave Inc	11055
Plexsa Manufacturing Hungary Kft	13096
PM Industries	15098
Polyfet RF Devices, Inc.	14023
Ponn Machine Cutting Company	12085
PPG Cuming Microwave	21019
Precision Circuit Technologies	19107
PrecisionRF	13089
Presidio Components	19026
ProTEQ Solutions	13024
pSemi Corporation	17090
PseudolithIC Inc.	13082J
Q Microwave Inc.	16054
Q2 Diamonds LLC	24041
QML, Inc.	21106
Qorvo US Inc.	20036
QP Technologies	24072

IMS2026 EXHIBITORS

First-time exhibitors are highlighted in gold.

IMS2026 EXHIBITOR LIST AS OF 4 MAY 2026 | *For the most up-to-date information, please visit: ims-ieee.org*

QRT Inc.	12017
Q-Tech Corporation & Axtal	19028
Quanscient	13091
Quantic Electronics	20046
Quantum Microwave Components	18098
QuinStar Technology Inc.	23029
QWED Sp. z.o.o.	18095
R&K Company Limited	15020
Radiall	23103
RapidRF AI Inc.	15046
RCL Microwave Inc.	14031
Reactel Inc.	15018
RelComm Technologies Inc.	14026
Remcom Inc.	14049
Remtec, Inc.	22078
Resin Systems Corp.	12078
Response Microwave Inc.	13028
RF Materials Co. Ltd.	24052
RF Morecom	18023
RF SPIN s.r.o.	12047
RFHIC Corp.	24054
RF-Lambda USA LLC	16046
RFMW	18054
Richardson Electronics Ltd.	22015
Richardson RFPD	12070
Rigol Technologies USA	24042
RILLWISTOM TECH PTE. LTD.	15103
RIV Inc.	24090
RLC Electronics	21016
RN2 TECHNOLOGIES	21107
Rogers Corporation	14054
Rohde & Schwarz USA Inc.	14035
Rosenberger North America	22070
RUPPtronik GmbH	11053
RX Space	11079
Samtec	14036
Sandvik CE Alloys	14098
Sangshin Elecom Co. Ltd.	11032
San-tron Inc.	20016
SAWNICS Inc.	19020
SCHOTT AG	21100
Scientific Microwave Corp.	13050
Sector Microwave Industries	11053
Shaanxi Shinhom Enterprise Co. Ltd.	16108
Shanghai XinXun Microwave Technology Co. Ltd.	14028
Shoufei Electronics	13045
Sibanye-Stillwater Reldan	13095
Sierra Circuits	18108
Siglent Technologies NA	17025
Signal Hound	22016
Signal Integrity Inc.	11078
Signal Microwave	16020
Signal Solutions	16089
SignalCore Inc.	24035
SLK Technologies Inc.	14015
Smiths Interconnect	17070
Soctera	12030
Solid Sealing Technology	22108
Somefly Technologies Co. Ltd.	12018
Sonnet Software, Inc.	11023
Southwest Microwave Inc.	21076
Space Machine and Engineering	18104
SpaceX Starlink	13043
Spectrum Control Inc.	20015
Spinner GmbH	13030
Spira	15108
Spirit Electronics	19096
State of the Art, Inc.	19024
Statek Corp.	24076
Stellant Systems	21053
Stellar Industries Corp.	16018
STi-CO	24023
StratEdge Corporation	23060
Sumitomo Electric Device Innovations	20104
SUNG WON FORMING	20020
Superapex LLC	21097
Susumu International (USA) Inc.	22025
Suzhou Eoulu System Integration Co. Ltd.	19099
Suzhou Lair Microwave Inc.	16107
SV Microwave	16054
Swabian Instruments USA	12044
SWIFT BRIDGE TECHNOLOGIES	21103
Switzer	24080
SynMatrix Technologies Inc.	13031
Synopsys	19042
T Plus Co. Ltd.	15019
Tabor Electronics	12026
Tactron Elektronik GmbH & Co. KG	16023
TagoreTech	11036
TAI-SAW TECHNOLOGY CO., LTD.	21024
Taitien USA	11028
Talent Microwave Inc.	21108
TDK Corporation of America	17016
Tecdia Inc.	23070
Tecnisco Ltd.	23018
Tektronix Component Solutions	23027
Teledyne	19076
Telewave.io	12027
Telonic Berkeley Inc.	16096
TESTFORCE	14016
Test System Solutions	18030
Texas Instruments	22090
The Boeing Company	18015
Thinfilms Inc	17106
Times Microwave Systems	16054
TMS Test Services	13082B
TMY Technology Inc. (TMYTEK)	13079
TnM Components	24028
Toptek PCB	11076
TOTOKU INC.	11035
Tower Semiconductor	17030
TRAK TECOM	16070
Transcom Inc.	24055
TransEON Inc.	13082K
Transline Technology Inc.	16024
TransSiP, Inc.	21095, 21096
Trans-Tech	23095
Trexon	12069
Tronser, Inc.	17096
TRS-RenTelco	13027
UEC United Electronics Company	18103
UIY Inc	15099
Ulbrich Specialty Wire Products	23100
United Monolithic Semiconductors	17075
Uni-Trend US	11056
University of Glasgow	22009
University of Massachusetts Amherst	24007
University of Pennsylvania	24009
University of Texas at Dallas	22008
Vanteon Corporation	22028
Varioprint AG	14027
Vaunix Technology Corp.	16017
Verifide Technologies Inc.	12020
VIAS3D	19084
Vibrantz Technologies	23106
VIETES CO., LTD	16015
ViewTech Borescopes	12035
Villanova University	22010
Viper RF	20028
Virginia Diodes, Inc.	17044
Vishay Intertechnology Inc.	18070
VTT	16089
W5 Engineering	15092
Waka Manufacturing Co. Ltd.	14019
WATECH ELECTRONICS PTE.LTD.	11069
WAVEPIA Co., Ltd.	24027
WavePro/Garlock	23078
Wavetek Microelectronics Corporation	23025
WCI CO., LTD.	20026
Weinschel Associates	15017
Wenzel Associates Inc.	20046
Werbel Microwave	16076
Werlatone Inc.	17020
Wevercomm Co. Ltd.	20078
WIN Semiconductors Corp.	23048
WIN SOURCE ELECTRONICS	13017
Winchester Interconnect	19015
WIPL-D	13055
Withwave Co. Ltd.	23108
XMA Corporation	16054
X-Microwave	20046
Xtaltq Technologies Co., Limited.	17097
XYZTEC, Inc.	16016, 17015
Y.TECH	11039
Yuetsu Seiki Co. Ltd.	18096
zapRF	23104
Zhejiang Jiakang Electronics Co. Ltd.	14029
Zhejiang Saisi Electronic Technology Co.,Ltd	24103
Zhongkehewei Electromagnetic	11080

Exhibition Hours and Happenings

EXHIBITION HOURS:

Tuesday, 9 June 2026	09:30 – 17:00
Wednesday, 10 June 2026	09:30 – 18:00
Thursday, 11 June 2026	09:30 – 15:00

TUESDAY:

Professional Headshots in the Societies Pavilion	09:30 – 12:30 & 13:30 – 17:00
Startup Pavilion	09:30 – 17:00
RF Systems Pavilion	09:30 – 17:00
YP Game Zone	09:30 – 17:00
IMS Student Design Competitions	10:00– 17:00
MicroApps Seminars	09:30 – 17:00
IEEE MOVE Truck	09:30 – 17:00
AM Coffee Break	09:40 – 10:10
Startup Panel Session: Startups and Digital Twins: Accelerating Design, Development, and Deployment	11:10 – 11:55
PM Coffee Break	15:10 – 15:40

WEDNESDAY:

Professional Headshots in the Societies Pavilion	09:30 – 13:00 & 14:00 – 18:00
Startup Pavilion	09:30 – 17:00
RF Systems Pavilion	09:30 – 17:00
YP Game Zone	09:30 – 17:00
MicroApps Seminars	09:30 – 17:00
IEEE MOVE TRUCK	09:30 – 17:00
AM Coffee Break	09:40 – 10:10
Startup Panel Session: RF Entrepreneurship in the Age of AI, New Space, and New Defense	11:10 – 11:55
PM Coffee Break	15:10 – 15:40
RFSA/RFTT Interactive Forum	15:10 – 17:00
Startup Fireside Chat: IP 101: Protecting Your Innovation — A Fireside Chat for RF & Microwave Startups	15:15-16:00
IMS Executive Forum: Microelectronics Product Development for Aerospace & Defense on Commercial Timelines	16:00 – 17:00
Industry Hosted Reception	17:00 – 18:00

THURSDAY:

Professional Headshots in the Societies Pavilion	09:30 – 12:30 & 13:00 – 14:30
Startup Pavilion	09:30 – 15:00
RF Systems Pavilion	09:30 – 15:00
YP Game Zone	09:30 – 15:00
MicroApps Seminars	09:30 – 15:00
IEEE MOVE Truck	09:30 – 15:00
AM Coffee Break	09:40 – 10:10
Startup Panel Session: From Vision to Profitability: The Startup Journey	14:02 – 15:00

Visit the Societies Pavilion (Booth 16002) to learn more about the IEEE Microwave Theory & Technology Society (MTT-S) as well as other IEEE societies, organizations and partners!

Stop by the Startup Pavilion to engage with up and coming companies in the RF & Microwave space!

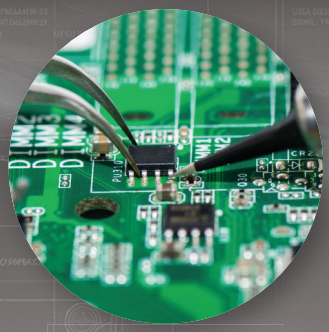
New for IMS2026!
The RF Systems Pavilion featuring live systems demonstrations for radar and communications. Join us in booth 20088!

Demonstration #1: Radar
Beyond the Datasheet: System-Level RF Insight with Digital Twins

Demonstration #2: Communications: A Lunar Surface Communications Testbed: Validate Lunar RF Systems— Before You Launch

TURNING COMPLEX RF CHALLENGES INTO RELIABLE SOLUTIONS

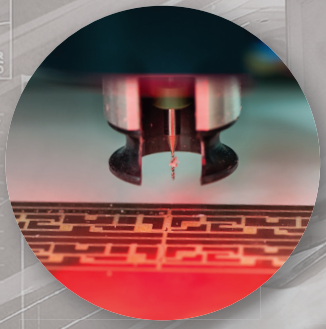
Four Decades of Innovative Solutions: DC-40GHz



INDUSTRY EXPERTISE

MISSION PROVEN PERFORMANCE

NIC



VERTICAL INTEGRATION

RESPONSIVE PARTNERSHIP

ADVANCED ENGINEERING LEADERSHIP

Visit NIC's Booth #21041 @IMS '26!

Radar | EW | Guidance & Navigation | Communications | GPS & Satellite

ISO 9001:2015
AS9100
CERTIFIED

NIC NETWORKS INTERNATIONAL CORPORATION
www.nickc.com

sales@nickc.com
913.685.3400
15237 Broadmoor
Overland Park, KS