The Plasmaris team from the Photonics & Quantum Research group at the University of Bristol are developing a disruptive light-controlled radio frequency integrated circuit (RFIC) technology which can offer extremely low-loss and ultra-linear signal switching, controllable attenuation, and phase shifting to > 100GHz and > 50 Watt RF power, while keeping all the reliability and cost advantages of traditional solid-state technologies.

They are using patent pending photoconductive semiconductor switch (PCSS) technology which has a number of advantages over conventional switching approaches including :

- Extremely low R_{on}/R_{off} ratio
- Excellent intrinsic linearity
- Superior power handling
- Streamlined circuit design : no RF bias circuits

What makes Plasmaris PCSSs unique ?

- Highly integrated with similar footprint to RF transistors
- Integrated laser and heatsinking
- Low insertion loss, fast switching time and low cost
- Full manufacturing work-flow established
- No requirement for costly MMIC foundry runs
- Multi-functional RFICs underdevelopment

They will be attending the International Microwave Symposium exhibition (ims-ieee.org) in San Francisco from Tuesday 17th – Thursday 19th June 2025 and will be doing their first public demonstration of their ground-breaking technology in collaboration with a leading RF test and measurement supplier.

They will be at Booth #4238 on University Row near the Start-up Pavillion, if you would like to arrange a meeting get in touch : m.cryan@bristol.ac.uk

www.plasmaris.com

www.bristol.ac.uk/research/groups/pho

Professor Martin Cryan
School of Electrical, Electronic and Mechanical Engineering
University of Bristol
Woodlands Rd
Bristol, UK
BS8 1UB