

DONGWOO FINE-CHEM INTRODUCES FIRST-EVER TRANSPARENT, ON-DISPLAY SCREEN MMWAVE ANTENNA FOR 5G AT IMS 2022

Company to Demo Antenna on Display (AoD) that Realizes Dual Polarization on Three Most Commonly Used mmWave 5G Frequencies Globally

Denver, Co June 21, 2022 — Dongwoo Fine-Chem, the world's largest OLED display touch sensor manufacturing company, introduced its new Antenna on Display (AoD) technology, a transparent antenna designed to deliver the best possible 5G coverage for smartphones and communication infrastructure. The company plans to demo this innovation this summer, during International Microwave Symposium (IMS) 2022.

Current 5G smartphones have mmWave antennas built into the side or the back of the device, which often causes interruptions to radio wave transmission and disruptions to 5G stability when users hold the smartphone with their hands. This makes Dongwoo Fine-Chem's AoD innovation unique, because it can be fitted on all smartphone screens, reducing disruptions.

“Technologies like augmented reality (AR) and virtual reality (VR) require mmWave 5G technology that delivers high speed and low latency, but today's version of this perfect 5G experience often falls short due to the limitations of mmWave 5G,” said Rha In-ho, CEO and president of Dongwoo Fine-Chem. “We are pleased to unveil our AoD technology, and we look forward to collaborating with smartphone and chip manufacturers to achieve 5G innovation together.”

Millimeter wave (mmWave) is a radio wave of 30-300GHz in frequency and 1-10mm in wavelength, perfected to achieve super high-speed 5G, while securing a wide bandwidth at the same time. However, mmWave cannot pass most solid materials effectively. Dongwoo Fine-Chem's AoD technology allows device manufacturers to install a transparent antenna on the display, which typically has the lowest possibility of users covering it with their hands, minimizing transmission interruptions and achieving stable mmWave 5G communication. It can realize dual polarization on the three frequencies (n257=26.5~29.5GHz,

n258=24.25~27.5GHz, n260=37~40GHz) of mmWave 5G that is most commonly used worldwide.

AoD technology can be utilized in various ways with ease, making it highly applicable. By applying the technology to facilities such as glass windows on vehicles and buildings, signages, or streetlamps, and giving them antenna function, it becomes easier to expand 5G infrastructure without any changes to the exterior.

Dongwoo Fine-Chem is building a robust and comprehensive global patent portfolio ranging from core technologies in integrating transparent antennas with displays including OLED to antenna module composition. The company currently has or has filed about 240 patents around the world, including the Patent Cooperation Treaty (PCT) as well as the U.S., China, and Japan.

Dongwoo Fine-Chem will be attending IMS 2022. For further information about AoD technology, please visit booth # 12039 and see the below link.

<https://www.expocadweb.com/22ims/ec/forms/attendee/vbooth5.aspx?exhibitorId=T0000943>)

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About DONGWOO FINE-CHEM

Dongwoo Fine-Chem is the largest company in the world in the field of touch sensors for OLED displays. As a subsidiary of Japan's Sumitomo Chemical, it was established in Korea in 1991. The company has manufactured high-purity chemicals, high-purity alumina, touch sensors, polarizing film, and color filters for semiconductors and LCD, OLED displays. In collaboration with local universities and companies, Dongwoo Fine-Chem has secured original and exclusive antenna design technologies, with the world's only design and manufacturing technology in transparent antenna that can be integrated with displays.

Dongwoo Fine-Chem recorded about KRW 3 trillion in sales in 2020 FY (April 2020 to March 2021).

For more information, please visit our website at www.dwchem.co.kr.

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