CIT: “Our ASE Deposition Technology Helps Making Better Mobile Devices with Reduced Signal Loss and Increased Reception”

SEOUL, SOUTH KOREA, September 19, 2024 /EINPresswire.com/ -- CIT Inc. (CEO Seung Jeong) participated in the ‘Global Media Meetup’ event, which was held from July 24th (Wed) to 26th (Fri) at MIK Basecamp in Seocho-gu, Seoul.

Yoo-Sil Lee, Director of CIT Research Institute (left), conducts a Q&A session with Geekspin during the ‘Global Media Meetup’

Chae-yeon Kim from CIT pitches at the ‘Global Media Meetup’ with Geekspin.

The ‘Global Media Meetup’ event, co-hosted by global media AVING News and US tech media Geekspin, focuses on introducing domestic startups’ products and technologies to the worldwide market. In particular, it aims to expand business opportunities through proactive global media coverage of startups applying for the CES 2025 Innovation Awards and those participating in CES.

Founded in 2023, CIT (Copper Innovation Technology) is a company that develops electronic materials for ultra-high-speed communications. They produce substrate materials that can be used in wired and wireless communications, capable of handling up to 10Gbps wired and 1~100GHz wireless with low transmission loss. The company’s core technology, ‘ASE (Atomic Sputter Epitaxy),’ was published in the scientific journal ‘Nature’ in 2022 and 2023, gaining widespread recognition for its technology. Moreover, they

have developed precise copper deposition technology to align 1 trillion copper atoms within 1cm³.

Six months after its establishment, CIT raised its company valuation to 5.6 billion KRW and attracted 1.1 billion KRW in seed investment. In July, they received an additional investment of 2 billion KRW at a valuation of 14 billion KRW. Although they only have a pilot production line, they are recognized for their technology. They collaborate with global telecommunications companies like Parallel Wireless in the USA and Huawei in China. Furthermore, in February 2024, they signed an MOU for joint research in biometrics and medical materials with Harvard Medical School Massachusetts General Hospital.

CIT also participated in MWC 2024, where they discussed collaborations with various global medical device and healthcare companies. Based on these discussions, they plan to build references, expand into new fields, and drive company growth.

Yoo-Sil Lee, Director of CIT Research Institute, conducted a Q&A session with Geekspin during the Global Media Meetup.

Scene from CIT and Geekspin's 'Global Media Meetup'.

CIT has developed various products based on its proprietary 'ASE (Atomic Sputter Epitaxy) deposition technology.' Their technology for depositing ultra-flat copper (<100nm) to create copper foil offers the advantages of less signal loss and higher reception compared to traditional deposition or laminating methods.

Transparent antennas applicable to various IT devices like cars and wearable devices use 10nm thick copper circuits that are invisible to the naked eye, enabling electrical exchanges in transparent displays. These antennas can communicate over a broader range from 1~20GHz to traditional transparent antennas (<7GHz).

CIT's PTFE-based FCCL (Flexible Copper-Clad Laminate) is advantageous for transmitting signals stably at high frequencies from 20~100GHz. The commonly used FPCB employs polyimide (PI) as

an insulator, which is problematic above 6GHz due to increased transmission losses and has limitations due to increased thickness. CIT's FCCL is expected to be highly utilized in most mobile devices, autonomous vehicles, drones, and cluster-serving robots.

In particular, CIT's products notably reduce their carbon footprint by recycling copper waste. CIT states, "Through this process, we aim to minimize resource wastage and environmental impact towards achieving Net Zero. Our edge technology, which can achieve equivalent performance even at 300nm thickness, a 1/50th of the conventional 15μm copper foil, is also a technology that saves the planet."

This year, CIT plans to participate in various international exhibitions. They will start with the SLING event in Singapore, participate in CES 2025 as a part of the Busan pavilion, and join MWC 2025.

Furthermore, CIT plans to conduct an official Proof of Concept (PoC) with customers this year to drive business growth. This will allow CIT to simultaneously push for technology development and market expansion, further strengthening its competitiveness in the global market.

The Global Media Meetup event proceeded with CIT's pitch and a Q&A session with Geekspin. Here is a Q&A between Yoo-Sil Lee, Director of CIT Research Institute, and Geekspin.

Q. Geekspin: You expressed interest in working with companies in Silicon Valley, but CIT is also collaborating with Huawei, which is subject to US sanctions. How are you preparing for this?

A. Yoo-Sil Lee, Director: We met Huawei at MWC 2024 and are proceeding with a PoC. We plan to contact companies in Silicon Valley next year. We are considering various business directions and will proceed in non-overlapping ways.

Q. Geekspin: You mentioned service robots and drones as application examples. Since you mentioned Harvard Medical School Massachusetts General Hospital, are there other cases, particularly in the medical field?

A. Yoo-Sil Lee, Director: There are no current uses in the medical field yet. We are just starting to proceed with MOUs with medical institutions.

Q. Geekspin: How do you plan to expand the use of CIT technology, and in what environments or cases would you like to apply it?

A. Yoo-Sil Lee, Director: We want to use our flexible material patches as signal transmission centers in the medical field. Think of them as harmless biosensors that are not uncomfortable to attach to people. Additionally, they can be used in transparent antennas that enable communication over a wider band than existing products. They can be applied to various IT devices such as cars and wearable devices and are also stable for low-frequency communication

technologies known for their speed.

Q. Geekspin: Can you explain specifically what diseases the bio patches developed with CIT technology can diagnose or what kind of biometric information they can measure?

A. Yoo-Sil Lee, Director: Biometrics and medical applications are still under discussion. Currently, we are focusing on low-loss, high-frequency materials related to the mobile sector, which is our target market. Our ASE deposition technology involves stacking copper at the atomic level on substrate materials. It has the advantages of low signal loss and high reception.

It can cover all signal transmissions, including 5G frequencies. The technology allows us to implement equivalent performance at 300nm, a 1/50th thickness of the conventional 15μm copper foil, thinning the substrate while lightening the device's weight.

For semiconductors, it can be made into a film that can be directly attached, reducing the thickness to 10 nanometers. It allows for the creation of light, thin, and accurate circuits.

Founded in 2017, Geekspin is based in New York, USA, and focuses on tech and technology sectors. Helena Stone, a graduate of NYU's Digital Imaging and Design Master's program and editor-in-chief of Geekspin, attended the event. Editor-in-chief Helena Stone has been a technology product expert on various broadcasts, including MSNBC, Wired, ABC News, Time Magazine, and Women's Day Magazine. She also reports on products and technologies from companies worldwide at CES annually.

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