第95回フロンティア材料研究所講演会



"Prospects in R2R gravure printed electronic devices for authentication"

Prof. Gyoujin Cho Department of Printed Electronics Engineering Sunchon National University Date: Thursday, 31st January, 2019 Time: 10:15 – 11:15 Room: 1F meeting room, R3 building, Suzukakedai Tokyo Institute of Technology

Abstract: As globalization in trading and online shopping become normal life to everyone via a smartphone, the counterfeit issue has been surged in high as well. Because of counterfeit goods and forged products, the estimated social cost was globally about \$700 billion annually in 2012. That's why anti-counterfeiting and authentication technologies have been developed based on the cost of the protection versus the value of the protected products. Therefore, up to present, there is no general anti-counterfeit technology that can apply from the high value added to the low value added products with a high security.

In this presentation, for the first time, the general anti-counterfeit technology was demonstrated by implementing an advanced additive technology such as a roll-to-roll gravure for manufacturing inexpensive Near Field Communication (NFC) cryptogram-label, generate codes with a designed frequency (0.1 to 30 Hz) via smartphone tagging and consequently connected to a blockchain to bring all information about the target product to the individual's smartphone or do transaction to add data as an authentic ID. Since the printed NFC activated cryptogram-label cannot be easily duplicated, it can be used as the general anti-counterfeit technology with the high security by interconnecting with the blockchain technology.

Contact: Yutaka Majima, e-mail: majima@msl.titech.ac.jp, tel: 045-924-5309