

시간	발표주제	발표자
좌장 : 홍원빈 교수(포항공과대학교)		
2/15 (목)	15:00~15:45	Sub-Terahertz Radio-Wave Absorber/Radome/Reflector Design
	15:45~16:30	Terahertz Radio Channel Measurement and Modeling Toward Beyond 5G/6G
좌장 : 송익현 교수(한양대학교)		
2/16 (금)	09:30~10:15	Enhanced telecommunication services using Non-Terrestrial Network (NTN) and associated ITU-R activities

2월 15일(목)

Sub-Terahertz Radio-Wave Absorber/Radome/Reflector Design



15:00~15:45

Dr. Sangyeop Lee, Assistant Professor

Tokyo Institute of Technology

Sub-terahertz frequencies are promising frequency bands for ultra-high-speed data communication in the future. D-band or H-band frequencies are one for beyond 5G/6G communication from 2030. To realize modules operating at those frequencies, a method employing a radio-wave absorber to suppress the cavity resonance at those frequencies and to increase reliability has been required at the module fabrication level. A low-loss, low-reflective radome (antenna cover) is also necessary to protect the antenna and modules. In addition, a reflective transmission using a radio-wave reflector is desired to enhance the coverage with a beam-steering/tracking ability.

Sangyeop Lee received the B.E. degree in Electrical and Electronic Engineering from Tokyo Institute of Technology, Tokyo, Japan, in 2009, and the M.E., and Ph.D. degrees in Electronics and Applied Physics from Tokyo Institute of Technology, Yokohama, Japan in 2010, and 2013, respectively. After working for Agency for Defense Development, South Korea, he joined Hiroshima University, Higashihiroshima, Japan, as a Researcher and an Assistant Professor from 2017 to 2020. In 2020, he joined Tokyo Institute of Technology, Yokohama, Japan, where he is currently an Assistant Professor. His current research interests include designing millimeter-wave/terahertz CMOS systems, circuits, and IoT sensors.

2월 15일(목)

Terahertz Radio Channel Measurement and Modeling Toward Beyond 5G/6G



15:45~16:30

Dr. Minseok Kim, Associate Professor

Niigata University

To meet the requirements of futuristic Internet of Everything (IoE) applications like augmented reality (AR), virtual reality (VR), and mixed reality (MR), sensing, localization, and enhanced computation, to name a few, the research pivot has shifted to the development of the sixth generation (6G) mobile communication system. It is expected that 6G, which is foreseen to operate in the terahertz (THz) band (0.1–10 THz) containing larger transmission bandwidths of several GHz or tens of GHz, can provide an ultra-high data rate of up to 100 Gbps and maintain a low latency of 0.1 ms as required by the envisioned applications. This lecture overviews current R&D activities focusing on recent radio propagation research on terahertz frequency towards B5G and 6G.

He received a B.S. degree in Electrical Engineering from Hanyang University, Seoul, Korea, and M.E. and D.E. degrees in the Division of Electrical and Computer Engineering, Yokohama National University (YNU), Japan, in 1999, 2002, and 2005, respectively. In 2007, he was an assistant professor with the Tokyo Institute of Technology, Tokyo, Japan, and a Visiting Scholar with the Georgia Institute of Technology, Atlanta, GA, USA, in 2010. In 2014, he joined the Graduate School of Science and Technology, Niigata University, Niigata, Japan, as an associate professor. His research interests include radio propagation channel measurement and modeling, radio imaging, radio-based localization, and MIMO/antenna array signal processing. He is a senior member of IEEE and IEICE.

2월 16일(금)

Enhanced telecommunication services using Non-Terrestrial Network (NTN) and associated ITU-R activities



09:30~10:15

Dr. Nobuyuki Kawai, Executive Advisor, Technology Sector

KDDI Corporation

In recent years, telecommunication services using the NTN has been actively developed. This presentation introduces technical trends of such development of NTN infrastructure literally deployed in the sky including HAPS (High Altitude Platform Station) and non-geostationary satellites. It also presents ITU-R activities toward WRC-27 (World Radiocommunication Conference) with the focus on NTN related subjects noting importance to operate the services using the NTN in an internationally harmonized and coordinated manner.

Mr. Kawai has been involved in the development, engineering and operation of satellite communications, for many years in KDDI, including aeronautical satellite communication system, VSAT system and various earth station equipment. He worked at Inmarsat HQ in the mid-90s to develop the system for transportable terminals using mobile satellite communication service. He was engaged in technical and regulatory matters for the service launch of Starlink in Japan.

He has also been actively participating in ITU-R activities as a Japanese delegate over 20 years as well as playing the following chairman's role of satellite communication groups:

- 2012–2019: Vice Chair of ITU-R Study Group 4
- 2019: Chair of Committee 5 of World Radiocommunication Conference (WRC-19)
- 2016–: Chair of ITU-R Working Party 4C,