

# IEICE Society Conference 2021 Symposium

## A: Engineering Sciences Society [Click here to see ditails.](#)

AS-1. Explainable AI (XAI) and VLSI design technology

## B: Communications Society [Click here to see ditails.](#)

BS-1. Latest Simulation Technology for Antennas and Propagation Society

BS-2. Antennas and Propagation Technologies for Pioneering New Communication Areas

BS-3. Advanced technologies for 5G evolution and 6G

BS-4. Special Poster Session ~ Network Technology ~

BS-5. Power Conversion Technologies and Applications for Sustainable Society

BS-6. Network and Service Design, Control and Management (English Session)

BS-7. Our Future World Created by Underwater Technologies -Current Status and Challenges for future-

## C: Electronics Society [Click here to see ditails.](#)

CS-1. Electromagnetic analysis for plasmonic devices and its application

## A: Engineering Sciences Society

### AS-1. Explainable AI (XAI) and VLSI design technology

This symposium proposal provides a path to introduce and discuss most recent and advanced research on Explainable AI (XAI) and its VLSI design and implementations. Planned talks from experts include both research and also future developments. We expect this symposium provides a new paradigm in computing and VLSI design, and also provides novel ideas to conduct research in the related field.

## B: Communications Society

### BS-1. Latest Simulation Technology for Antennas and Propagation Society

The Research of antennas and propagation technologies continues to evolve every day, including next generation wireless communication systems, such as the 5th generation mobile communication systems, and underwater communication technologies for the creation of new wireless application fields.

For the evolution of the technology, advanced simulation technologies are expected to take advantage of the development of computers such as GPGPU, supercomputers, and quantum computers.

In this symposium, we will discuss the latest research results and future prospects on various topics not only the electromagnetic simulation but also the MIMO capacity simulation, the high frequency circuit/device simulation, and so on.

### BS-2. Antennas and Propagation Technologies for Pioneering New Communication Areas

White papers aimed at upgrading 5G and 6G systems has been released by various organizations, and the expansion of the communication area on the ground to all places such as the sky, sea, and space is being considered. In this session, presentations on antennas and propagation technologies that contribute to these new areas will be widely invited, and the latest technical issues will be discussed.

### BS-3. Advanced technologies for 5G evolution and 6G

The 5th generation (5G) cellular communication systems have been launched since 2019 and research and development activities are investigated to realize various services based on 5G. On the other hand, key enabling technologies of future cellular systems in 2030s have already been discussed. With this background, it is important to discuss evolution and future perspective of wireless access technologies needed for various services in future. This symposium session aims to discuss advanced radio access technologies toward 5G evolution and 6G such as massive MIMO, base-station cooperation and scheduling, application of machine learning, OAM, UAV, IRS, and their proof-of-concepts activities, that are expected to be realized in mmWave and terahertz bands. In addition, invited lectures are presented to clarify the direction of the research and developments for 6G.

### BS-4. Special Poster Session ~ Network Technology ~

This session handles themes on Network Technology. The presentation style is a poster session so that people in the room including speakers could hold an active and fruitful discussion anytime during the session and could have feedback or tips for his or her own study. As the session aims to have a discussion about research topics in progress, 1 written paper would be sufficient.

### BS-5. Power Conversion Technologies and Applications for Sustainable Society

Recently, for the transition to a decarbonized society, the demand of the high-performance and the low-cost power conversion technologies of renewable energies has been increased. In this session, various approaches for the power conversion technologies of renewable energies will be discussed. Now the promotion of de-carbonization and zero-emission by managing the renewable energy, energy saving and energy storage is drawing attention to many people. Also these technologies enhance the utilization of the information and communication technology such as IoT. We would like to give the opportunity to discuss about above useful technologies in various aspects such as devices, circuits and application systems.

### BS-6. Network and Service Design, Control and Management (English Session)

The world has been quickly shifted to online mode due to the epidemic of COVID-19. Telework, online medical service and online education have been an indispensable part for our human beings to coexist with COVID-19. In order to implement a well online mode, the network and service design, control and management are getting more important. In this session, authors are invited to submit their papers regarding the network design, control and management technologies from various aspects such as performance, quality, reliability, security, and usability.

### BS-7. Our Future World Created by Underwater Technologies -Current Status and Challenges for future-

The use of underwater robots has been paid attention towards keeping sustainable growth of the

production in Japan. Underwater wireless technologies (positioning, remote sensing, communications, power transmission, etc.) are essential technologies to realize automation on maintenance and inspection of deployed port infrastructure by underwater robots. However, enormous challenges remain to be resolved to develop underwater technologies applicable into the application fields. The symposium provides an opportunity to share current progress and challenges for future on R&D related to underwater technologies through acoustic, optical, or EM waves.

## C: Electronics Society

### CS-1. Electromagnetic analysis for plasmonic devices and its application

I It is expected that plasmonic devices using surface plasmon polaritons are applied in a wide range of applications such as subwavelength optical devices, high-sensitive sensors, and so on. In this session, the recent topics of electromagnetic analysis for plasmonic devices and its application are discussed.