

Call for Papers



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IC and mmWave Platforms and Advanced Circuit Technologies for 6G Communications (IMPACT-6G)

June 14, 2025, Tohoku University, Sendai, Japan
(EICE Future Hall, Aobayama Campus, Tohoku University)

As pre-commemoration of the 100th Anniversary of the Invention of the Field Effect Transistor, the IEEE Electron Devices Society, Solid-State Circuits Society, and Microwave Theory and Technology Society will hold a workshop focused on Si and non-Si IC and mmWave circuit technologies tailored to 5G/6G mmWave communications. The workshop will be a hybrid event, and will take place in Japan, Tohoku University Campus.

The workshop will host a broad range of topics to represent the multi-disciplinary nature of the emerging GHz devices and circuits and millimeter-wave (mmWave) applications. In particular, we see how integrated circuit technology is continuing to have an unprecedented impact on every aspect of modern society, ranging from communications and security to healthcare and industrial automation. Over the last five decades, the relentless pursuit of IC device miniaturization for manufacturing high-performance and high-density very large scale integrated (VLSI) circuits and systems has led to the creation of a digital society. Operating speeds continue to be pushed to increasingly higher and higher frequencies enabling baseband operation in mobile devices in the 30 GHz vicinity, which is expected to provide more bandwidth and lower latency. Millimeter-wave communications will soon become part of the 5G/6G standards, alongside developments to push communications to the THz bands. The availability of bandwidth at these frequencies will offer a multitude of opportunities to increase throughput of a new generation of wireless networks. Although this area of research is relatively new, we witness a tremendous growth in the literature related to the electromagnetic properties of mmWave communications, and in particular, free space propagation loss and its susceptibility to hindrances.

This IEEE Workshop will present a forum for engineers and scientists to discuss these issues and hear recent developments from experts in areas ranging from transistors and integrated circuits, of Si and non-Si families, to antennas & propagation and communication networks, and to discuss the challenges faced in design of 6G transceiver systems and networks.

Important information

Abstract Submission: This workshop accepts abstracts only (≤ 1 pg) by May 1, 2025 -- no paper submission. Interested speakers and attendees should contact Keisuke Konno (keisuke.konno.b5@tohoku.ac.jp).

Registration: Deadline April 1, 2025.

Registration Fee: 10,000 JPY (includes lunch/dinner/refreshments). On-site cash payment only.