



Special Session 4

AI-Enabled Innovations in Wireless Physical Layer Design

2026 7th Information Communication Technologies Conference (ICTC) will be held in Nanjing, China during May 8-10, 2026. ICTC 2026 is sponsored by Southeast University, technically co-sponsored by IEEE, and supported by Jiangsu Information Technology Application Society, and Alliance of Key Laboratories for Telecommunication Technology(AKL-TT). At the event, participants will have the opportunity to share their research results in the field of ICT, discuss future technology trends, and how to deal with security challenges related to digitalization. In addition, this conference will further explore how to promote continuous progress in the ICT field, thereby laying a solid foundation for digital development. You are welcome to attend ICTC!

Topics in Special Session 4

The special session explores the transformative role of AI/ML in advancing wireless physical layer design, with a focus on emerging systems like massive MIMO and beyond. As wireless communications evolve toward 6G, traditional model-based approaches struggle with complex, high-dimensional, and real-time challenges. This event highlights innovative AI-driven solutions for enhancing physical layer performance to build more efficient, adaptive, and scalable systems. Bringing together academia and industry, it fosters discussions on novel ML techniques for core physical layer problems, promoting interdisciplinary collaboration and practical implementation.

Related topics include, but are not limited to:

- Machine learning-based signal detection, equalization, demodulation, and interference management
- AI-driven CSI compression, feedback, reconstruction, and sparse recovery
- Hybrid analog-digital processing and transceiver design enhanced by machine learning
- Digital twins for simulation, testing, and optimization of wireless physical layers
- Lightweight AI models for efficient deployment on resource-constrained wireless devices
- Joint design and optimization of physical layer with emerging paradigms (e.g., integrated communication and computing)
- Federated and distributed learning approaches for collaborative physical layer optimization
- Adversarial training and robustness enhancements for AI models in physical layer applications

Submission Link: <https://www.zmeeting.org/submission/ictc2026>
(Choose Special Session 4 to Submit)

More details about Special session 4:
https://www.ictc.net/special_4.html

Chair



Assoc. Prof. Ting Liu

Nanjing University of Information Science and Technology, China

Co-chairs



Prof. Weiqiang Tan
Guangzhou University, China



Prof. Chunguo Li
Southeast University, China

Publications



Submitted manuscripts will be peer reviewed by the conference scientific committees.

Accepted papers will be included into **ICTC2026 Conference Proceedings**, published by **IEEE**, and submitted for indexing by **Ei Compendex** and **Scopus**.

Proceedings of ICTC2020 & ICTC2021 & ICTC2022 & ICTC2023 & ICTC2024 & ICTC2025 have all been included in the IEEE Xplore!
Proceedings of ICTC2020 & ICTC2021 & ICTC2022 & ICTC2023 & ICTC2024 have all been indexed by Ei Compendex and Scopus!

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