

CALL FOR PAPERS

IEEE PIMRC 2023 Workshop on
6G- Envisioned Reconfigurable Intelligent and Holographic Surfaces

Important Dates

Paper Submission Deadline: 19 May 2023

Acceptance Notification: 16 June 2023

Camera-Ready Due: 07 July 2023

Workshop Date: 05 September 2023

General Chairs

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Paper Submission

Papers should follow **IEEE PIMRC 2023** paper submission guidelines: <https://pimrc2023.ieee-pimrc.org/>

All papers will be submitted through EDAS, and all accepted papers with presentation will be published in IEEE Xplore.

Reconfigurable intelligent surfaces (RIS) leverage smart radio surfaces with a high number of small antennas or metamaterial elements based on a programmable structure that can be used to control the propagation of electromagnetic waves. Reconfigurable holographic surfaces (RHS) with multiple input multiple output (MIMO) setup are composed of numerous metamaterial radiation elements integrated in a holographic pattern to generate beams with desirable directions. Furthermore, with RHS the transceiver can leverage hologram principle with this entire surface for efficient wireless communications and networking applications.

These intelligent and holographic surfaces will play a pivotal role in advanced sixth generation communication systems and networks. Machine learning and artificial intelligence (AI) tools, and optimization-based algorithmic solutions can be explored with RIS/RHS-aided systems and networks. RIS/RHS can be configured at sub-6 GHz, millimeter wave (mmWave) to terahertz (THz) spectrum and beyond. Integrated sensing, communications and localization based systems can be explored with RIS/RHS configurations. RIS/RHS can be also intertwined with emerging technologies such internet-of-things (IoT), internet-of-everything (IoE), internet-of-intelligent-things (IoIT), internet-of-space- things (IoST) and vehicle to everything (V2X), conformal metasurfaces, unmanned aerial vehicles (UAVs)-assisted systems and networks. RIS/RHS-aided novel multiple access schemes can be explored as well within this scope.

Workshop on 6G-Envisioned Reconfigurable Intelligent and Holographic Surfaces will take place at the **IEEE PIMRC 2023, Canada**. It will provide a forum for sharing multidisciplinary contributions to the emerging RIS/RHS technology. We aim to bring together leading researchers from academia and industry, to share their recent findings and views.

We seek to assemble cross-cutting and high-quality original research papers on topics including, but not limited to:

- AI, machine/deep learning, federated learning with RIS/RHS
- V2X, V2V, UAVs and vehicular networking with RIS/RHS
- Satellite communications and networking with RIS/RHS
- Integrated sensing, communications and localization with RIS/RHS
- IoT, IoE, IoIT (intelligent), IoST (space) with RIS/RHS
- Multiple access schemes such as RSMA, NOMA with RIS/RHS
- Precoding, quantization, RF design with RIS/RHS
- PHY algorithms and protocol designs with RIS/RHS
- Electromagnetic compatibility modeling & signaling with RIS/RHS
- Channel estimation, imperfect CSI modelling with RIS/RHS
- Network security, privacy & interference exploitation with RIS/RHS
- Wireless backhaul, integrated access & backhaul with RIS/RHS
- Cell-free wireless, full-duplex, mmWave and THz with RIS/RHS
- Resource allocation & transmission protocols with RIS/RHS
- Mobile edge computing, distributed computing with RIS/RHS
- Semantic communication, URLLC, mMTC and eMBB with RIS/RHS
- Experimentation & testbed findings with RIS/RHS