

IEEE AWPL Special Cluster 2024 on “Smart Surfaces, Antennas and Propagation for Integrated Sensing and Communication (ISAC)”

Integrated Sensing and Communication (ISAC) are expected to play a pivotal role in the evolution of wireless networks including 5G and beyond. These systems require adaptive antennas and surfaces to achieve the high data rates and low latency demanded by future applications. Smart Surfaces and Antenna Technologies for ISAC is an emerging and interdisciplinary field that combines ideas from antenna design, computational sensing, wireless communication, and smart materials for innovative solutions in ISAC systems. This field focuses on the development of intelligent surfaces and antennas capable of dynamically adapting their electromagnetic properties to perform beam manipulation, propagation channel control, information modulation, analogue signal processing, and interference suppression in various ways.

The objective of this special cluster is to collect the recent advancements in this field and provide an overview of the potentialities of this technology in antenna systems. Contributions are sought for, but not limited to, the following:

- Integrated sensing and communication based on smart antenna and metasurfaces
- Innovative metasurface and antennas for smart sensing
- Electromagnetic information theory for ISAC
- Metasurface and antennas for analogue signal processing
- Reconfigurable antennas and metasurfaces for adaptive communication systems
- Electromagnetic wave propagation and channel modeling for integrated sensing and communication
- Low-profile and conformal antennas for wearable and IoT devices
- Energy-efficient designs for ISAC systems
- Metasurface-inspired sensing for environmental monitoring, healthcare, and IoT applications

The guest editors of this focused cluster are:

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Prospective authors are encouraged to contact the Guest Editors for any questions or to determine the suitability of their contribution for this special cluster. Papers should be prepared following the same submission instructions as for regular IEEE AWPL manuscripts (four-pages technical content maximum and one reference page, double-column, IEEE format), available via the Information for Authors website (<http://awpl.ie.cuhk.edu.hk/resources.html>). The authors should indicate in the cover letter to the Editor-in-Chief that the manuscript is being submitted in response to the Call for Papers for the focused cluster. Prospective authors should refer to the timeline below for key dates.

Key dates:

- Submission deadline: **March 31, 2024**
- First decision: May 15, 2024
- Revised manuscripts deadline: June 15, 2024
- Final decision: July 30, 2024
- Final manuscripts due by: September 1, 2024
- Online publication: Shortly after final manuscript submission
- Cluster publication: November (or December) 2024 issue of AWPL