IEEE AWPL Special Cluster 2026 on
"Leaky Wave Antennas: Development and Applications in Communication, Radar, Wireless Power Transfer, and Biomedicine"

As a low-cost and high-gain antenna whose beam can be scanned by simply altering the frequency without necessitating mechanical motion or phase shifters, the leaky wave antenna (LWA) has garnered significant interest in recent years, particularly with the development of metamaterials, metasurfaces, and reconfigurable intelligent surfaces. Moreover, researchers have recently paid much attention to system applications of LWAs, especially in wireless communications (e.g., 6G communications in millimeter and THz bands, satellite communications, tunnel communication), radars, wireless power transfer (WPT), and biomedicine.

This special cluster specializes in the topic of LWAs, focusing on reporting cutting-edge developments in LWAs and their applications. Notably, this special cluster aims to provide a high-quality technical platform for worldwide researchers in the field of leaky waves to exchange their up-to-date research findings and discuss how the leaky wave community can better serve the current and future wireless world. To this end, this special cluster seeks contributions in, but is not limited to, the following research topics of LWAs:

- Fixed-frequency electrical beam-scanning LWAs
- Wideband fixed-beam LWAs
- Simultaneous suppression of multiple stopbands and grating lobes in periodic LWAs
- Rapid beam-scanning LWAs
- Multi-beam or multi-band LWAs
- End-fire LWAs
- Holographic LWAs
- LWA designs based on Fabry-Perot resonant cavity antennas
- LWA designs with metamaterials, metasurfaces, and reconfigurable intelligent surfaces
- LWA applications in wireless communications (future 6G, satellite, tunnel, etc.)
- LWA applications in radar detection/sensing/imaging
- LWA applications in joint communication and sensing (JCAS)
- LWA applications in near-field or far-field imaging
- LWA applications in vital sign monitoring
- LWA applications in wireless power transfer and energy harvesting
- LWA applications in biomedicine

The Guest Editors of this Special Cluster are:

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Prospective authors are encouraged to contact the Guest Editors if they have any questions or want to confirm 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-page technical content maximum and one reference page, double-column, IEEE format), available via the Information for Authors website (http://awpl.ee.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, 2026**
- First decision: May 15, 2026
- Revised manuscripts deadline: June 15, 2026
- Final decision: July 30, 2026
- Final manuscripts due by: September 1, 2026
- Online publication: Shortly after final manuscript submission
- Cluster publication: November (or December) 2026 issue of AWPL