IEEE AWPL Special Cluster 2022 on
"Disruptive Beam-Steering Antenna Technologies for Emerging and Future Satellite Services"

The modern-day wireless applications demand a low Size Weight and Power (SWAP)-constrained beam-steerable front-end antennas that can be installed unobtrusively on stationary or mobile platforms, whether on the ground or airborne. These applications include the global data connectivity solutions planned through low-earth-orbit (LEO) constellations to deliver reliable high-speed Internet to billions of users and devices. Developing a ground-based, cost-effective, and energy-efficient high-gain beam-steering antenna terminal is paramount in materializing these connectivity solutions. Such beam-steerable antennas are additionally required to meet strict regulatory standards and pattern masks that need efficient goal-driven optimization procedures capable of handling the electrically large radiating apertures.

Researchers from academia and industry have been working on conventional and unconventional innovative antenna solutions to address these challenges. The proposed special cluster aims to consolidate the state-of-the-art applied and analytical research, including the latest technological advancements and the use of innovative materials and methods to disrupt the space of beam-steering antennas for the next generation of wireless communications.

This special issue will consider the recent innovative advancements in beam-steering antenna technologies, including, but not limited to, the following areas:

- Beam-steering solutions for front-end antennas
- Mechanical beam-steering antenna technologies
- Electronic beam-steering antenna technologies
- Unconventional beam-steering antennas based on liquid crystal, metasurfaces, and flat lenses
- Beam-steering antennas for high power applications, including all-metal structures
- All-dielectric beam-steering solutions
- Conformal beam-steering antennas for wide-angle beam-scanning
- Compact beam-steering solutions
- Multibeam-steering and switched beam antennas
- Antennas for Unmanned Aerial Vehicles or Satellites including CubeSat
- Medium or High gain fixed beam antennas
- 3D printed antennas and deployable antenna solutions
- Optimization of high-gain antennas for improved performance
- Frequency scanning antennas including 1D or 2D leaky-wave antennas

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Prospective authors are encouraged to contact the Guest Editors for any questions or to determine the suitability of their contribution to this special cluster. Papers should be prepared following the submission instructions 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.eleceng.adelaide.edu.au/authors.htm). In the cover letter to the Editor-in-Chief, authors should indicate that the manuscript is submitted in response to the call for papers for the focused cluster. Prospective authors should refer to the timeline below for key dates. The publication charges will be at the standard rates for AWPL.

Key dates:
- Submission deadline: **March 31, 2022**
- First decision: May 15, 2022
- Revised manuscripts deadline: June 15, 2022
- Final decision: July 30, 2022
- Final manuscripts due by: September 1, 2022
- Online publication: shortly after final manuscript submission
- Cluster publication: November 2022 issue of AWPL