

## **IEEE AWPL Special Cluster 2020 on “5G/6G enabling antenna systems and associated testing technologies”**

The fifth-generation (5G) communication is currently under intensive research and development from both industry and academia. The new 5G cellular systems are envisioned to achieve better performance, e.g., higher data rate, better energy efficiency, and higher reliability than current systems. Nowadays, 5G commercialization has started in quite a few countries, and some initial 6G research has already started. Antenna systems are critical components for 5G/6G communication systems. Tremendous efforts have been exerted on researching 5G/6G antenna systems and associated technologies. There are many 5G/6G enabling antenna techniques, such as Massive MIMO array antennas in both conventional popular bands and millimeter-wave (mm-Wave) bands (with hundreds of antenna elements), terahertz (THz) antennas, antennas/arrays for inter-satellite and satellite-to-mobile communications, mm-Wave antennas/arrays for mobile terminals, antenna in package and device body including Front End Module and so on. These new antenna techniques, as well as mm-Wave antenna arrays without standard antenna ports, outdate the conventional antenna testing method. Furthermore, how to test the 5G antenna systems becomes a nontrivial task. Some efforts have also been exerted on efficient testing methodologies for 5G antenna systems. Yet there are still many challenges for cost-effective, repeatable, and accurate 5G antenna testing systems. Testing methodology for 6G antenna systems is still an open problem to date and, therefore, deserves full attention.

The objective of this special cluster is to address the technical challenges in 5G/6G antenna system and the associated testing methodologies. This focused cluster of papers will consider the latest in research in, but not limited to, the following areas:

- **5G/6G antennas for mobile handsets and/or base stations**
- **Mm wave antenna in package and antenna on chip and in device.**
- **Interactions between the human body and 5G/6G antennas**
- **Millimeter-wave antennas and arrays**
- **Decoupling of massive MIMO antenna arrays**
- **Antennas and arrays for small satellites**
- **Terahertz antennas**
- **Testing methodologies for 5G/6G antenna systems**

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.eleceng.adelaide.edu.au/authors.htm>). 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. The publication charges will be at the standard rates for AWPL.

### **Key dates:**

- Submission deadline: March 31, 2020
- First decision: May 15, 2020
- Revised manuscripts deadline: June 15, 2020
- Final decision: July 30, 2020
- Final manuscripts due by: September 1, 2020
- Online publication: shortly after final manuscript submission
- Cluster publication: November 2020 issue of AWPL