

Special Issue on

Advanced Printed Antenna Technology for IOT, 5G and 6G Communication Systems: Methods, Materials, Optimization and Challenges

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This Special Issue deals with the design of innovative printed antenna design technologies such as MIMO designs, antenna arrays designs, beam-steerable antennas, reconfigurable antennas, electrically small antennas, metamaterials-based antennas, mm-wave antennas, wearable antennas etc.

The rapid growth in the area of modern wireless communication systems necessitates the demands for different types of new multi-functional, and high-performance antennas to support various modern cutting-edge technologies including IOT, 5G communication, etc. As the antenna is one of the most crucial parts of any communication system, hence, the exponential growth in antenna technology will help for the advancement of next-generation communication systems. Over the past few decades, researchers have made significant and sincere research efforts for the development of innovative antennas to support various requirements of wireless communication services. Compact size, wide and multiple frequency coverage, superior radiation coverage, multi-mode operation, cost effectiveness and ease of fabrication, ease of integration, and conformity are some examples of the key parameters that ensure the successful design of antenna systems for current and future wireless communication systems as per specific area of applications. Furthermore, MIMO and array arrangements of antenna systems can significantly enhance the capacity of the system to meet the requirements of future wireless networks such as 5G NR and IOT applications. The implementation of MIMO antenna system enables the higher data rates, extended coverage, improved signal quality, and other range of benefits which are essential for success of the wireless communication system in the various domains including the IoT, mobile communications and beyond. Phased array antennas or beam-steerable antennas are also important, which dynamically control the direction of received or transmitted power radio frequency signals. The beam-steerable antennas offer the flexibility to optimize and adapt wireless communication systems in terms of signal quality, range, interference migration, and coverage, which are essential components in the field of wireless technologies and their applications. The metamaterials are important in designing electrically small antennas by reducing its size and offer several improvements in antenna characteristic parameters such as higher bandwidth, increased gain, etc.

The objective of this Special Issue is to cover all aspects of antennas used in existing or futuristic wireless communication systems. The proposed issue specially focuses on antenna developments for 5G, IOT, 6G, and Terahertz communication applications. The objective is to showcase recent advances, modern trends, and possible future developments of printed antennas. We invite researchers to submit their original research or review articles that are concerned with novel design techniques, analysis, optimization, prototyping, material characterization, and experimentation in this area.

Potential topics include but are not limited to the following:

- ▶ Antenna design for the Internet of Things
- ▶ Smart antennas and beamforming for 5G
- ▶ Millimeter-wave and sub-mm-wave antennas
- ▶ Terahertz, infrared, and optical antennas
- ▶ Antenna design for wearable applications
- ▶ Antenna design for body area networks
- ▶ Planar & surface mountable antennas
- ▶ Metamaterials and metasurfaces
- ▶ Multiple-input, multiple-output (MIMO) antennas
- ▶ Compact antenna arrays for massive MIMO systems
- ▶ Satellite communication antennas
- ▶ Multi-beam antennas
- ▶ Substrate-integrated waveguide (SIW) antennas
- ▶ Electromagnetic Bandgap (EBG) structures
- ▶ Antennas for radio frequency identification (RFID)
- ▶ Antennas for UWB systems
- ▶ Dielectric resonator antennas
- ▶ 3D printed antennas and structures
- ▶ Electrically small antennas
- ▶ Metamaterial-based antennas
- ▶ Smart antennas, beamforming, and MIMO

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=576380>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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