Wireless Communications and Mobile Computing

Special Issue on

Antenna Design Techniques for 5G Mobile Communications

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5G will support significantly faster mobile broadband speeds and extensive data transfer, as well as enabling the full potential of the Internet of Things (IoT). The mobile handset has to cope with various applications such as virtual reality, industrial internet, and smart cities. While the 5G applications will utilize higher frequency bands, including the millimeter-wave region, in order to enable wider bandwidth and higher data rates, they should also consider the conventional bands. The wider bandwidths and the need for beamforming, beam steering, and multiple beams are significant challenges to the 5G systems. This provides the impetus for a new breed of handset design that places new design drivers on the antenna design. Low-profile efficient antennas that ensure reliable and interference-free communications are required, but the demand for increased power, larger bandwidth, higher gain, and insensitivity to the presence of the human user further complicates the antenna and propagation aspects. This requires novel ideas and innovative solutions in antenna design that can operate in single and multiple-input and multiple-output (MIMO) arrangements.

This special issue aims to bring together academic and industrial researchers to identify and discuss technical challenges and recent results related to efficient antenna design, along with novel approaches that can be exploited for 5G mobile handsets. We invite researchers to contribute original research and review articles that seek to address the issues of antenna design for portable 5G applications.

Potential topics include but are not limited to the following:

- Antenna design techniques and measurement for 5G systems
- Multiple antennas for advanced transceivers of 5G systems
- Multiband antenna operation for 5G systems
- 5G dielectric resonator antennas
- Beamforming antenna designs
- Reconfigurable antennas and devices for the next generation
- Mutual coupling and isolation techniques between antenna elements
- Antenna integration in/on vehicles
- 5G ultradense networks
- Device-to-device connectivity with high mobility
- Interaction of in-car antennas with car electronics
- Vehicle-to-vehicle (V2V) communication protocols
- Algorithms for vehicular networks
- Antenna design objectives for dynamic multichannel systems

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/wcmc/adtgc/.

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

Lead Guest Editor
Khalil H. Sayidmarie, Ninevah University, Mosul, Iraq
kh.sayidmarie@uoninevah.edu.iq

Guest Editors
Raed A. Abd-Alhameed, Bradford University, Bradford, UK
r.a.a.abd@bradford.ac.uk

Peter Excell, Wrexham Glyndwr University, Wrexham, UK
p.excell@glyndwr.ac.uk

Chan H. See, Edinburgh Napier University, Edinburgh, UK
chs1@bolton.ac.uk

Issa Elfergani, Campus Universitário de Santiago, Aveiro, Portugal
i.t.e.elfergani@av.it.pt

Jonathan Rodriguez, Instituto de Telecomunicações, Aveiro, Portugal
jonathan@av.it.pt

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