





Special Issue Reprint

Antennas and Propagation Aspects for Emerging Wireless Communication Technologies

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Edited by Dimitra Kaklamani Athanasios Panagopoulos Panagiotis Gkonis

ISBN 978-3-0365-2616-4 (Hardback) ISBN 978-3-0365-2617-1 (PDF)



The increasing demand for high data rate applications and the delivery of zero-latency multimedia content drives technological evolutions towards the design and implementation of next-generation broadband wireless networks. In this context, various novel technologies have been introduced, such as millimeter wave (mmWave) transmission, massive multiple input multiple output (MIMO) systems, and non-orthogonal multiple access (NOMA) schemes in order to support the vision of fifth generation (5G) wireless cellular networks. The introduction of these technologies, however, is inextricably connected with a holistic redesign of the current transceiver structures, as well as the network architecture reconfiguration. To this end, ultra-dense network deployment along with distributed massive MIMO technologies and intermediate relay nodes have been proposed, among others, in order to ensure an improved quality of services to all mobile users. In the same framework, the design and evaluation of novel antenna configurations able to support wideband applications is of utmost importance for 5G context support. Furthermore, in order to design reliable 5G systems, the channel characterization in these frequencies and in the complex propagation environments cannot be ignored because it plays a significant role. In this Special Issue, fourteen papers are published, covering various aspects of novel antenna designs for broadband applications, propagation models at mmWave bands, the deployment of NOMA techniques, radio network planning for 5G networks, and multi-beam ologies for 5G wireless communications.

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