

Special Issue

Recent Advances in the Convergence of Wireless and Optical Technologies

Message from the Guest Editors

The emerging ecosystem of solutions, suggestions, technologies, and inter-disciplinary areas of interest comprising the “Beyond-5G” (B5G) scope demonstrates the shift towards even higher frequencies of interest than the allocated 5G spectrum. Mm-wave frequencies used for massive MIMO systems in the 60-83 GHz spectrum; the exploitation of findings in the 150 GHz region; the push towards THz directional communications; and the additional push for wireless optical applications and solutions in the infrared spectrum (namely for Industrial 5.0 solutions), the ultra-violet spectrum (for sensing and security applications), and visible light communications (VLCs) (with all the open issues and challenges that they present) confirm that the future lies in the area of ultra-dense ultra-high-capacity systems where sensing and AI-assisted beam steering will improve novel antenna engineering, whereas network optimization will be conducted on the basis of channel estimation techniques. Use cases cover a wide variety of areas, such as Industry 5.0, infrared FSO, smart city verticals, connected vehicles, and lidar techniques.

Guest Editors

Dr. Theofilos Chrysikos

1. Department of Computer Engineering and Informatics, University of Patras, 26504 Rio Patras, Greece
2. Department of Digital Systems, University of Peloponnese, Valiotti's building, Kladas, 23100 Sparta, Greece
3. Department of Informatics and Telecommunications, University of Thessaly, Amfipiani area, 35100 Lamia, Greece

Dr. Panagiotis Kokkinos

Department of Digital Systems, University of Peloponnese, Valiotti's Building, Kladas, 23100 Sparta, Greece

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Prof. Dr. Flavio Canavero

Department of Electronics and Telecommunications, Politecnico di
Torino, 10129 Torino, Italy

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