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Editorial

Key Enabling Technologies for Beyond 5G Networks

Dania Marabissi * and Lorenzo Mucchi *

Department of Information Engineering, University of Firenze, Via S. Marta 3, 50139 Firenze, Italy
* Correspondence: dania.marabissi@unifi.it (D.M.); lorenzo.mucchi@unifi.it (L.M.)

The world of wireless communication is on the cusp of a revolution. Fifth-generation networks have provided unprecedented speed and capacity, but the demands of the future require further improvement. This Special Issue of *Future Internet*, entitled "Key Enabling Technologies for Beyond 5G Networks", highlights the innovative approaches that will underpin the next generation of connectivity. As with any technological paradigm shift, a robust foundation is of paramount importance. This Special Issue showcases advancements in several crucial areas. Security is vital, and Marabissi et al. [1] explores the potential of combining physical layer security with machine learning to authenticate IoT nodes and prevent spoofing. Similarly, Zhang et al. [2] address authentication challenges in a hybrid edge–fog–cloud computing environment, proposing a novel protocol that leverages the strengths of 5G networks.

Beyond security, efficient data management is essential. Nafeh et al. [3] present innovative solutions for joint scalable video coding and transcoding, paving the way for seamless video delivery in fog computing-assisted DASH applications. This theme continues with Nadal et al.'s exploration [4] of a multiband, sliceable transceiver for future optical networks, offering both flexibility and performance.

The future of connectivity extends beyond traditional communications. Toriyama et al. [5] venture into the world of molecular communications, proposing techniques to estimate ambient environmental parameters, a critical step towards reliable communication at the molecular level.

The articles in this Special Issue represent just a glimpse into the vibrant landscape of technologies that will shape the future of wireless communication. We received many high-quality submissions, and after a rigorous peer-review process, we are proud to present these six excellent papers. We are confident that they will stimulate further research and development, ultimately propelling us towards a future where connectivity is faster, more secure, and more versatile than ever before.

We would like to express our sincere gratitude to all the authors who submitted their work for consideration. Their dedication and innovative spirit are the driving force behind this exciting field. We also extend our deepest appreciation to the reviewers who generously donated their time and expertise to ensuring the quality of this Special Issue. Their insightful feedback has been invaluable in shaping this collection.

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