Editorial

Preface

As Welcome to the inaugural volume of Comm&Optics Connect, a multidisciplinary journal dedicated to advancing communication and networks across the entire electromagnetic spectrum. This first volume embodies our vision to provide a platform where groundbreaking research in radio, mmWave, THz, and optical technologies converges. The future of communication networks lies in the seamless integration of technologies across the electromagnetic spectrum to support ultra-high speed, ultra-low latency, and massive connectivity. However, realizing this vision requires overcoming significant challenges, such as managing the complexity of heterogeneous networks, ensuring robust security and privacy, and developing energy-efficient solutions. Comm&Optics Connect addresses these challenges by offering a platform for radio, mmWave, THz, and optical fields to share their work and collaboratively tackle these issues.

The response to our call for papers reflects a strong interest in contributing to the aims and scope of the journal. The five articles featured in this volume represent the breadth and depth of research that Comm&Optics Connect aims to showcase. These articles cover critical areas such as:

- Real-Time Cloud-based IoT for Energy Consumption Monitoring: Damien Campbell et al. present a cloud-based IoT platform for monitoring household electricity consumption, providing valuable insights into usage patterns and identifying opportunities for enhancing energy efficiency. This research exemplifies the journal's focus on practical deployments.
- Free Space Optical Inter-Satellite Links: Shivam Bhutiani and Nupur Shah explore the establishment of free space optical inter-satellite links beyond the Karman line. This work highlights the journal's interest in cutting-edge communication technologies for space applications, aligning with the increasing demand for high-speed and reliable connectivity in satellite networks.
- Enhancing Physical Layer Security: Shen Qian and Meng Cheng delve into physical layer security in lossy untrusted relay networks, focusing on the challenges and opportunities presented by finite blocklength transmissions. This research contributes to the journal's commitment to exploring security and resilience in communication systems, an area of paramount importance as networks become more complex and vulnerable.
- Open Fronthaul Technologies for 5G and Beyond: Hamna Shoukat et al. provide a comprehensive overview of technological trends in open fronthauls for beyond 5G and 6G networks. This work highlights the journal's emphasis on next-generation networks and the critical role of open and interoperable architectures in fostering innovation and flexibility.
- Multi-Task Learning for Low-Complexity VLC Systems: Saksham Dewan and Hany Elgala explore the application of multi-task learning to reduce the complexity of visible light communication (VLC) systems. This research exemplifies the journal's dedication to exploring novel data-driven approaches using deep learning (DL) models for enhanced efficiency and performance.

As the Editor-in-Chief of Comm&Optics Connect, I am confident that the journal will become an essential resource for researchers in the field of communications and networks. None of this would be possible without the outstanding and diverse members of the editorial board, the hard-working staff at Scifiniti, and the valuable reviewers. I invite you to join us on this exciting journey as we bridge the gap between cutting-edge research and practical applications, shaping the future of a connected world. We look forward to receiving contributions from all over the world.

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