Special Issue

Terahertz Communication Networks for 6G and Beyond

Message from the Guest Editor

The advent of sixth-generation (6G) wireless systems is driving the exploration of new spectrum bands and device technologies capable of meeting the unprecedented requirements of ultra-high data rates, massive connectivity, and sub-millisecond latency. This Special Issue aims to provide a focused platform for advancing the state of the art in THz communication networks by highlighting recent progress in THz sensors, devices, simulation methodologies, and integrated system design.

Two-dimensional materials like graphene, alongside metamaterials and reconfigurable surfaces, are enabling compact, low-power THz components. These advances support not only high-speed links but also integrated sensing capabilities. However, high atmospheric attenuation and sensitivity to blockage require new modeling approaches such as physics-based propagation models and advanced ray-tracing.

Taken together, progress in THz sensors, devices, materials, and simulation methods is laying the foundation for 6G networks. With this Special Issue, we aim to capture the state of the art and push the discussion forward on how THz technologies will define communication well beyond 5G.

Guest Editor

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

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