

Special Issue

Materials for Sources and Detectors in the GIGA-TERA-MIR and NIR-IR Ranges

Message from the Guest Editor

Recent advances in sources and detectors in the TERA-MIR (0.3 THz to 10 THz) and mid-infrared (10 THz to 100 THz) fields have shown that there are a large number of applications in physics, electrical engineering and technology, applied chemistry, materials sciences, and medicine/biology that would benefit from spectroscopy and imaging with frequencies in both ranges. Even more recently, novel devices in the GIGA range from 0.1 THz to slightly below 0.3 THz, notably in medical diagnostics based on sensitive gas detection and imaging, have made a review of materials, sources, and detectors that can be used for the GIGA-TERA-MIR range as well as the NIR-IR range timely to help to identify common aspects within a synergetic approach. The main emphasis of this Special Issue will be on new fundamental material properties, concepts, and device designs that are likely to open the way for new products or the exploitation of new technologies in the fields of sensing, healthcare, biology, water quality control, and industrial applications. End users are research centers, academic institutions, and well-established and start-up companies and hospitals.

Guest Editor

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano–alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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