Special Issue

Metamaterials to Metasurfaces: Shaping Light from Theory to Applications

Message from the Guest Editors

Since the discovery of metamaterials—artificially engineered structures with unique properties—and the advancement to metasurfaces, which are the 2D counterparts made up of sub-wavelength meta-atoms, we have seen a shift from conventional, bulky optical elements to novel, ultra-thin planar components. These innovative elements address the limitations of their predecessors by providing compact focusing platforms, thereby facilitating the miniaturization of optical devices through reductions in size and complexity. This underscores the importance of exploring potential methods for mass production. The concept of plasmonic metasurfaces dates back to ancient times when glassmakers used noble metal particles to color glass and potters created luster decorations on ceramics. Today, metal-based meta-atoms can manipulate light beyond diffraction limits and significantly enhance local electromagnetic field intensity through surface plasmons. This Special Issue provides a place where researchers interested in the field of metamaterials/metasurfaces can find or disseminate the most recent discoveries from the theoretical point of view to applications and final devices.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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