



Polarization-Handling Metasurfaces

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Message from the Guest Editor

The ability to generate, manipulate, and detect polarized radiation is a task of such importance that Nature itself learned how to do it—as the polarization vision capability of insects such as bees testifies. Mankind is however not lagging behind, learning to engineer structured materials that display unprecedented polarization handling capability. Through judicious structuration, metasurfaces can accomplish tasks that ordinary materials cannot. This is particularly true for what concerns the polarization degree of freedom of light, since substances like solid-state crystals or liquid crystals show only limited values of linear and/or circular birefringence and diattenuation. Metasurfaces can also exploit resonance effects to operate in multiband fashion and can be arranged to display spatial phase-gradient phenomena or to implement computer-generated holograms.

The aim of the present Issue is to collect novel results concerning this exciting field that lies at the crossing point among classical electromagnetism, physics of structured materials, radiofrequency technology, nanoscience, and photonics.





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Message from the Editor-in-Chief

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