



Recent Industrial Approaches of Optical Metasurfaces: Applications and Trends

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Message from the Guest Editors

Dear Colleagues,

As the future of the semiconductor world changes from using electrons to photons, optical metamaterials stand at the forefront of the revolution of broad applications from lidar, high-speed interconnects, and photonic integrated circuits (PICs) in autonomous vehicles to on-chip networks and massive AI data IO throughput. Optical metamaterials and metasurfaces are made using periodic nanostructures at scales smaller than optical wavelengths, with extraordinary on-demand phase, amplitude, and polarization control capabilities. In this decade, optical metasurfaces have started to revolutionize real-world devices. The industrial landscape and major trends include the development of metalenses and metacomponents for smartphones, 3D sensing, holography, and the next big thing—AR/VR devices. Customized commercial software and unique processing techniques have been developed to address the “well-known issues”, for more efficient designs in large aperture and high yield for massive production. This Special Issue will present a comprehensive report on optical metamaterials and metasurfaces.

