

Flat Optics Based on Metasurfaces

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Metasurfaces based on sub-wavelength patterning have major potential for arbitrary control of the wavefront of light by achieving local control of the phase, amplitude and polarization and allowing greater functionality and more compact devices.¹⁻⁴ High performance metasurfaces for the visible will be discussed including high NA metalenses for subwavelength imaging, achromatic lenses, axicons, vortex plates, chiral holograms, spin-to-orbital angular momentum converters, ultracompact spectrometers and novel waveplates will be discussed, along with the potential of this technology for a wide range of applications.

1. N. Yu and F. Capasso *Nature Materials* 13, 139 (2014)
2. N. Yu et al. *Science* 334, 333 (2011)
3. F. Aieta et al. *Science* 347, 1342 (2015)
4. M. Khorasaninejad et al. *Science* 352, 1190 (2016)