

Metasurfaces for Infrared Imaging Applications

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Abstract – The rapid development of nonlinear nanophotonics based on subwavelength dielectric structures has driven advancements in nonlinear imaging applications. Here, I will summarise our recent work in infrared imaging using nonlinear metasurfaces. By engineering subwavelength dielectric structures that leverage multipolar resonance interference effects, we enhanced four-wave mixing processes in resonant metasurfaces, achieving efficient infrared-to-visible light conversion. Our results suggest a promising platform for advancing infrared imaging technology and nonlinear optical computing through subwavelength nanostructures.