

Recent progress in the frequency selective metasurfaces in mid infrared wavelength

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Abstract

Mid infrared wavelength is unique to apply the detection of the small amount of molecules with molecular vibration or rotational modes. Especially absorption type of frequency selective meta surface can be used for the mid infrared light source, detectors according to the Kirchhoff's thermal radiation law. Here we summarized the recent progress of plasmonic meta surfaces in mid infrared wavelength region. The experimentally measured optical properties were compared with simulations by Finite difference time-domain calculations. Also, we demonstrate applications of these structures for the plasmonic IR-light sources and detectors and other sensing devices.