

Abstract Submitted
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Mid-Field Imaging of a Mid-Infrared Beaming Device DAVID ADAMS, University of Massachusetts Lowell, SUKOSIN THONGRATTANASIRI, Oregon State University, VIKTOR PODOLSKIY, DANIEL WASSERMAN, University of Massachusetts Lowell — We have experimentally measured the evolution of mid-infrared light at the exit side of a beaming device comprised of a subwavelength slit surrounded by a metallic grating. This device operates by coupling much of the light transmitted through the slit into surface waves which scatter off the ridges of the grating. Due to relatively large-scale dimensions afforded in the mid-infrared wavelength range, the subsequent beam evolution occurs over an appreciable distance (hundreds of microns). This has allowed us to image the emerging patterns which ultimately give rise to the far-field beam profile, and also to design geometries for control of the mid- and far-field beam evolution.

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