

Abstract Submitted
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Impact of patterned anti-reflection coating on the performance of Broadband Blackbody Absorber Based on Dielectric-Thin Metal Film Multilayers SHYHAUH GUO¹, Department of Materials Science and Engineering, University of Maryland, College Park, MD, ANDREI SUSHKOV, DENNIS DREW², Department of Physics, University of Maryland, College Park, MD, RAYMOND PHANEUF³, Department of Materials Science and Engineering, University of Maryland, College Park, MD — We present results from measurements on double period structures of alternating dielectric and thin metal layer coated with micro-patterned anti-reflection layer to improve absorption in mid-infrared range. We examine the effect on performance of patterns' period and the correlation with the effective medium theory. We find that the numerical results agree with the measured absorption spectra. We also investigate the limit of pattern feature size to achieve performance suggested by effective medium theory.

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