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Micro-Optic Waveguide on IRFPA With Reticulated Pixels LIRONG SUN, ANDREW SARANGAN, University of Dayton, JOHN DEVITT, MIKE GARTER, L-3 Communications Cincinnati Electronics, UNIVERSITY OF DAYTON COLLABORATION, L-3 COMMUNICATIONS CINCINNATI ELECTRONICS COLLABORATION — A micro-optic waveguide design with a simple grooved notch structure above the reticulated detector gaps to deflect incoming wave towards the detector material and away from the gaps will be presented. Simulation and analysis of a Gaussian beam through the micro-optic waveguide structure by applying 3-D Finite-Difference Beam Propagation Method and 2-D Finite-Difference Time Domain Method is shown. The model shows the high waveguide efficiency away from the pixel gaps. The fill factor increases with the deep etch height or large etch angle and the narrow etch opening width which becomes smaller than the wavelength. The wavelength dependence of fill factor is also analyzed.

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