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Electron beam lithography based fabrication of omnidirectional photonic crystal structures for visible and near-infrared wavelengths GANAPATHI SUBRAMANIA, Sandia National Laboratories — We describe the fabrication of a three dimensionally periodic photonic crystal structure with omni-directional band gap for the near-IR and visible wavelength region using a technique of direct electron beam write coupled with multi-level alignment. Using this method we have successfully fabricated silicon as well as gold based Iowa State "woodpile" structure with lattice spacings as small as 550 nm. We tested the devices for their optical properties and we find that the data reveals features consistent with the photonic band gap.

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