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## 3d Photonic-Lattices: Design, Nano-Fabrication and Applications

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A review will be given on the status of 3D metallic photonic-lattices for energy applications. The successful realization of photonic-lattice emitters at  $\lambda \sim 1.5 \mu m$  wavelengths could lead to highly efficient thermal photovoltaic (TPV) generation. The scaling of device's minimum feature size to 100-200 nm could give rise to a photonic band edge at visible wavelengths. Both the status of TPV electrical power generation and lighting applications will be addressed.