

Abstract Submitted
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Enhanced and near-unidirectional thermal emission based on cascaded particle phonon-polaritons (PhPs) STAVROULA FOTEINOPOULOU, ECE Dept., University of New Mexico, G. CHINNA R. DEVARAPU¹, Centre for Advanced Photonics and Process Analysis, Munster Technological University, Cork, T12P928, Ireland. — Micron-scale objects made of semiconductors can support highly localized photonic modes in the reststrahlen band regime known as particle or Mie phonon-polaritons (PhPs). We will discuss how these particle PhPs can serve as building blocks to construct platforms with enhanced near-unidirectional thermal emission that is directed to the upper hemisphere only. These systems are highly relevant to current applications such as the development of long-wavelength infrared (LWIR) sources, thermal photovoltaics and passive radiative cooling.

¹Also with: Tyndall National Institute, Cork, T12R5C, Ireland.

Stavroula Foteinopoulou
University of New Mexico

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