

Directional thermal radiation

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Thermal radiation is a ubiquitous phenomenon, with all objects at finite temperatures emitting radiation due to the thermally induced motion of particles and quasiparticles. This typically results in thermal radiation that lacks directionality in the far field. In this talk, I will discuss our recent work on the directional control of thermal radiation, including broadband directional and unidirectional thermal radiation, angular-asymmetric spectrally-selective thermal radiation, and their implications for improving the efficiency of radiative heat transfer.

Short Bio:



Wei Li is a professor and lab director at GPL Photonics Laboratory, Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), Chinese Academy of Sciences (CAS). Before joining CIOMP, Wei Li did his Ph.D. and postdoc at Vanderbilt University and Stanford University, respectively. His research interests include thermal photonics, nanophotonics, and their applications in next-generation energy and information technologies. His work has been published in peer-reviewed journals including Nature, Science, Nature Photonics, Nature Nanotechnology, and Nature Communications.

He is an Optica Fellow, a Highly Cited Researcher (Clarivate), an outstanding advisor of CAS, and a recipient of the MIT Technology Review Innovator Under 35 (TR35 Asia Pacific). He serves as the Associate Editor for npj Nanophotonics, SPIE Spotlight and guest editor for Nanophotonics. He also serves as reviewers for Science, Nature Photonics, Nature Nanotechnology and many other journals. He is the founding faculty advisor of IEEE Student Chapter and the faculty co-advisor of the Optica Student Chapter at CIOMP, CAS.