

**TOWARDS NANO-SCALE THERMOPHOTOVOLTAIC APPLICATIONS:
DISCUSSIONS FOR MATERIAL SELECTION AND MEASURING SYSTEM**

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ABSTRACT. Harvesting radiative energy with nano-scale systems has significant potential due to the orders-of-magnitude increase in spectrally-selective radiative heat flux through nano-scale gaps. Potential applications utilizing this enhancement include thermophotovoltaics and nanomanufacturing. The future use of these concepts for design and development of new devices require the fundamental understanding of near-field radiative transfer principles. In this paper, firstly, near field thermal radiation measurement systems existing in the literature are reviewed. Then, a recently started research project on micro/nanoscale thermophotovoltaic applications is outlined with emphasis on material selection and measuring system.