

Abstract Submitted
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High Thermoelectric Performance from Solution-Processed Conducting Polymer/Inorganic Composite Films NELSON COATES, SHANNON YEE, University of California, Berkeley, KEVIN SEE, JEFFREY URBAN, Lawrence Berkeley, National Laboratory, RACHEL SEGALMAN, University of California, Berkeley — Conducting polymer/inorganic composite films have great potential for use as thermoelectrics due to the possibility of combining the high electrical conductivity of inorganic materials with the low thermal conductivities of polymer materials. Additionally, the possibility of engineering nanoscale interfaces in these hybrid systems provides a unique means of optimizing thermoelectric figures of merit. We have fabricated films from this new class of materials, and examined their thermoelectric properties. Our solution-processed films, which consist of an inorganic nanostructure matrix linked with conducting polymer ligands, exhibit an electrical conductivity that is greater than either of its components and a thermopower that varies as a function of inorganic nanocrystal-conducting polymer ratio.

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