

Abstract Submitted  
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**Thermoelectric Transport Through Arrays Of Carbon Nanotube Junctions** IRMA KULJANISHVILI, JIM CHOE, VENKAT CHANDRASEKHAR, SERHII SHAFRANIUK, Northwestern University — The work addresses the voltage-controlled thermal flow and electric current through the carbon nanotube (CNT) junction arrays. The CNT thermoelectric generation (TEG) promises a high efficiency for thermal and electric energy conversion in a variety of applications. [1] The energy generation had been studied using advanced methods of the condensed matter physics and nanotechnology. We will outline our experimental findings based on CNTs - TEG devices. We will report on our results that involve TEG-CNTs devices in array and /or single CNTs junctions geometries. We will describe fabrications protocols for preferential CVD growth of CNTs and nanoscale precision patterning of the catalyst on predefined device architectures. Electronic transport and optical properties of the CNTs-TEG nanostructures will also be discussed. I.K. and S.S. acknowledge support from the U.S. Army CECOM Acquisition Center #W909MY-10-C-0032. I.K. acknowledge collaboration with NanoInk Inc.

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