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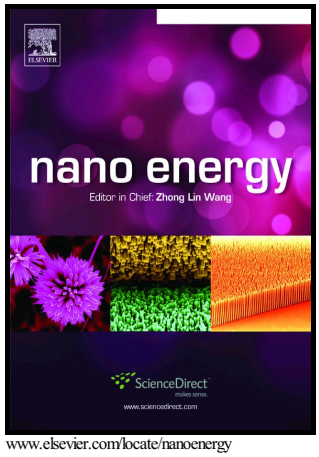

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PII: S2211-2855(18)30194-0
DOI: https://doi.org/10.1016/j.nanoen.2018.03.055
Reference: NANOEN2603

To appear in: *Nano Energy*

Received date: 10 January 2018
Revised date: 9 March 2018
Accepted date: 21 March 2018

Cite this article as: Xiaofei Zhang, Wenqiang Gao, Xiaowen Su, Fulei Wang, Baishan Liu, Jian-Jun Wang, Hong Liu and Yuanhua Sang, Conversion of solar power to chemical energy based on carbon nanoparticle modified photo-thermoelectric generator and electrochemical water splitting system, *Nano Energy,* https://doi.org/10.1016/j.nanoen.2018.03.055

Conversion of solar power to chemical energy based on carbon nanoparticle modified photo-thermoelectric generator and electrochemical water splitting system

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Abstract

Nanogenerator has caused extensive attraction to convert/collect dispersive energy as electric energy. Solar thermoelectric generator (STEG), based on Seebeck effect of semiconductors, is one of the most promising approaches for solar energy conversion because of its simple structure, high stability and long lifetime. The light absorbers are of paramount importance for high-efficient STEG. In this work, high performance carbon nanoparticles for light harvesting have been synthesized via a facile and efficient method. By the in-situ coating of the nanoparticles on a commercial thermoelectric generator, a high-efficient STEG was constructed. The performance of the designed