

Accepted Manuscript

Article

Self-powered electrochromic devices with tunable infrared intensity

Jiangman Sun, Xiong Pu, Chunyan Jiang, Chunhua Du, Mengmeng Liu, Yang Zhang, Zhitian Liu, Junyi Zhai, Weiguo Hu, Zhonglin Wang

PII: S2095-9273(18)30241-X
DOI: <https://doi.org/10.1016/j.scib.2018.05.019>
Reference: SCIB 411

To appear in: *Science Bulletin*

Received Date: 14 March 2018
Revised Date: 4 April 2018
Accepted Date: 2 May 2018



Please cite this article as: J. Sun, X. Pu, C. Jiang, C. Du, M. Liu, Y. Zhang, Z. Liu, J. Zhai, W. Hu, Z. Wang, Self-powered electrochromic devices with tunable infrared intensity, *Science Bulletin* (2018), doi: <https://doi.org/10.1016/j.scib.2018.05.019>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Article

Received 14 March 2018

Received in revised form 4 April 2018

Accepted 2 May 2018

Self-powered electrochromic devices with tunable infrared intensity

Jiangman Sun[†], Xiong Pu^{†‡}, Chunyan Jiang^{†‡}, Chunhua Du[†], Mengmeng Liu[†], Yang Zhang[†], Zhitian Liu,[±] Junyi Zhai^{†‡}, Weiguo Hu^{†‡*}, Zhonglin Wang^{†,‡}*

[†]CAS Center for Excellence in Nanoscience, Beijing Key Laboratory of Micro-nano Energy and Sensor, Beijing Institute of Nanoenergy and Nanosystems Chinese Academy of Science, Beijing 100083, China

[‡] School of Nanoscience and Technology, University of Chinese Academy of Sciences, Beijing 100049, China

[‡] School of Materials Science and Engineering Georgia Institute of Technology Atlanta, GA 30332-0245, USA

[±] Wuhan Institute of Technology Materials Science and Engineering, Wuhan 430205, China

E-mail: jyzhai@binn.cas.cn (J. Zhai)

huweiguo@binn.cas.cn (W. Hu)

Abstract

Triboelectric nanogenerator (TENG) is an efficient way to convert ambient mechanical energy into electricity to power up portable electronics. In this work, a flexible infrared electrochromical device (IR-ECD) with stable performances was assembled with a TENG for building self-powered infrared detector with tunable intensity. As Driven by TENG, the electrochromic device could be operated in the mid-IR region due to the reversible electrochromic reactions. An average infrared reflectance contrast of 46% was achieved in 8-14 μm regions and as well a clear thermal image change can be observed. This work indicates that the TENG-driven

Download English Version:

<https://daneshyari.com/en/article/8917233>

Download Persian Version:

<https://daneshyari.com/article/8917233>

[Daneshyari.com](https://daneshyari.com)