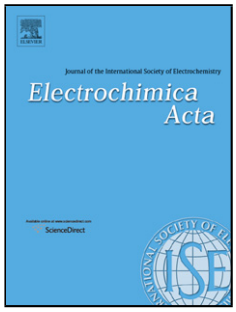

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Author: Ming Hao Yi Chen Weilai Xiong Liu Zhang Liyang Wu Yang Fu Tao Mei Jianying Wang Jinhua Li Xianbao Wang

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Coherent polyaniline/graphene oxides/multi-walled carbon nanotubes ternary composites for asymmetric supercapacitors

Ming Hao, Yi Chen, Weilai Xiong, Liu Zhang, Liyang Wu, Yang Fu, Tao Mei*, Jianying Wang, Jinhua Li, Xianbao Wang*

Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Key Laboratory for the Green Preparation and Application of Functional Materials, Ministry of Education, Hubei Key Laboratory of Polymer Materials, School of Materials Science and Engineering, Hubei University, Wuhan 430062, China.

ABSTRACT

A coherent polyaniline (PANI)/graphene oxides (GOs)/multi-walled carbon nanotubes (MWCNTs) composite was prepared by *in-situ* solution polymerization as a positive electrode of supercapacitors. The orderly growth of PANI nano-dots on GOs led to the formation of the nano-ravines that can enhance ions diffusion efficiency. MWCNTs surrounded by PANI connected all components, and thus the conductivity with the increasing electron transfer rate was improved. The results showed that the electrode exhibited the outstanding electrochemical performances with the specific capacitance up to 696 F g^{-1} at 20 mV s^{-1}. The KOH-activated GOs/MWCNTs were used as a negative electrode to assemble an asymmetric supercapacitor (ASC). The ASC possessed an extended working potential (1.6 V), a

* Corresponding author: Fax: +86 27 8866 1729. E-mail address: meitao@hubu.edu.cn (Tao Mei), wangxb68@yahoo.com.cn (X.B. Wang).