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Authors: Kang Fu, Yang Wang, Linchang Mao, Xiaoxiao Yang, Junhong Jin, Shenglin Yang, Guang Li



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Facile Morphology Controllable Synthesis of PtPd Nanorods on Graphene-Multiwalled Carbon Nanotube Hybrid Support as Efficient Electrocatalysts for Oxygen Reduction Reaction

Kang Fu, Yang Wang, Linchang Mao, Xiaoxiao Yang, Junhong Jin, Shenglin Yang, Guang Li*

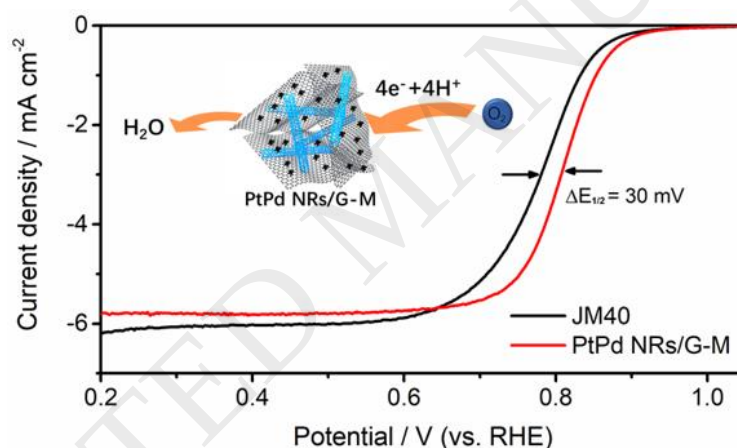
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, PR China

* Corresponding author. Tel.: +86 21 67792830; fax: +86 21 67792855.

E-mail: lig@dhu.edu.cn.

Author. Tel.: +86 21 67792798, E-mail: fuk_1992@126.com.

Graphitic abstract



Highlights

- G-M hybrid was prepared by a novel modified Hummers method followed by thermal annealing.
- G-M was verified to be more efficient as the electrocatalyst support compared with G.
- Ultrathin PtPd alloy nanorods were supported on the G-M hybrid.
- The electrochemical activity of PtPd NRs/G-M outperforms the commercial Pt/C.

Abstract

One-dimensional (1D) anisotropic platinum-based nanorods are particularly attractive electrocatalysts for oxygen reduction reaction (ORR) owing to the inherent structural advantages. In this work, we report the growth of ultrathin PtPd alloy nanorods (3-4 nm) on Graphene-Multiwalled carbon nanotube (G-M) hybrid support via a facile surfactant-free and template-free method as the efficient electrocatalyst for ORR. The

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