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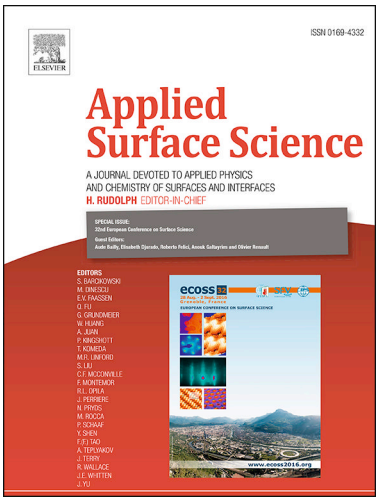

Full Length Article

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Application of Rhenium-doped Pt_3Ni on carbon nanofibers as counter electrode for dye-sensitized solar cells

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Abstract: Rhenium-doped platinum-nickel nanostructures supported on carbon nanofibers (Re-Pt_3Ni/CN) were fabricated, used as counter electrodes (CEs) in dye-sensitized solar cells (DSSCs), by a simple electrospinning technique and a hydrothermal method. DSSCs employing Re-Pt_3Ni/CN electrodes showed a higher power conversion efficiency (PCE) of 9.36% compared to solar cells with Pt, CN and Pt_3Ni/CN CEs measured under the same conditions. The excellent photoelectric performance of the Re-Pt_3Ni/CN CE is attributed to its stable octahedral structure and large specific surface area. Accordingly, the Re-Pt_3Ni/CN CE is a promising cost-effective alternative CE for DSSCs.