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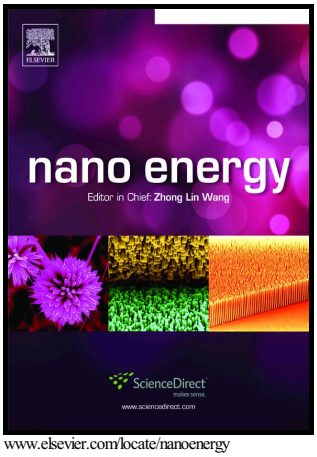

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Flexible in-plane graphene oxide moisture-electric converter for touchless interactive panel

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Abstract

Harvesting energy from nature have attracted much attentions especially the direct energy conversion from other power sources (e.g. light, heat, mechanical movement, moisture) into practical electricity. However, many of existing devices always rely heavily on external metal electrodes, and their rigid structure restrains further applications in portable touchless electronics or perceptual artificial skins. Herein, we demonstrate flexible in-plane moisture-electric converter (IPMEC) based on graphene oxide (GO) film for novel touchless interactive platform. An appreciable electric output voltage (~70 mV) and high electrical current density (12 mA cm^{-2}) can be autonomously generated with ambient moisture variation on this IPMEC. The planar configuration and integrative laser reduced GO electrodes of IPMEC renders it highly flexibility, and greatly promotes the touchless interface formation between this device