

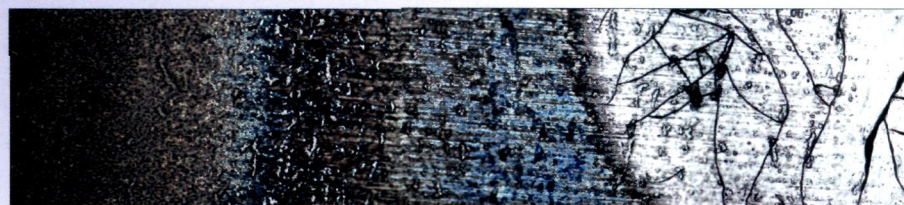
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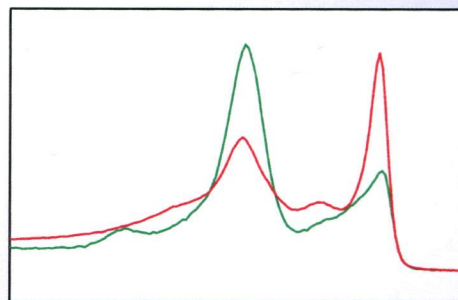
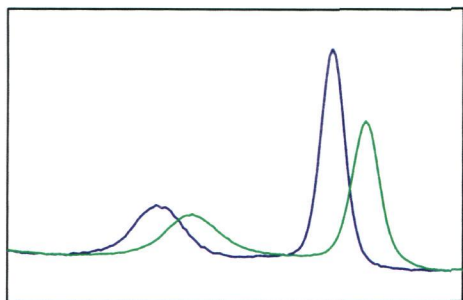
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TiO₂ Doping Enhances
the Catalytic Activity
of RuO₂ through
Charge Transfer
(see page 5A)



High Activity

Low Activity



ENERGY CONVERSION AND STORAGE, OPTICAL AND ELECTRONIC DEVICES,
INTERFACES, NANOMATERIALS, AND HARD MATTER



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ON THE COVER: TiO₂ doping enhances the catalytic activity of RuO₂ through charge transfer. The optical image displays DSA-type electrode where pure RuO₂ (right) and TiO₂-doped RuO₂ (left) coatings are separated by TiO₂. The scanning electrochemical microscopy shows the UME tip response from the OER activity on the substrate electrode, indicating a higher electrochemical activity for the TiO₂-doped RuO₂ even though the Ru content in the mixed (Ru_{1-x}Ti_x)O₂ coating is considerably lower compared with pure RuO₂ coating. X-ray photoelectron spectroscopy suggests that the electrocatalytic enhancement for OER on the mixed (Ru_{1-x}Ti_x)O₂ coating is promoted through a charge transfer from the RuO₂ to the TiO₂, which provides new and more reactive sites designated as activated RuO₂^{δ+}. See page 6126.

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