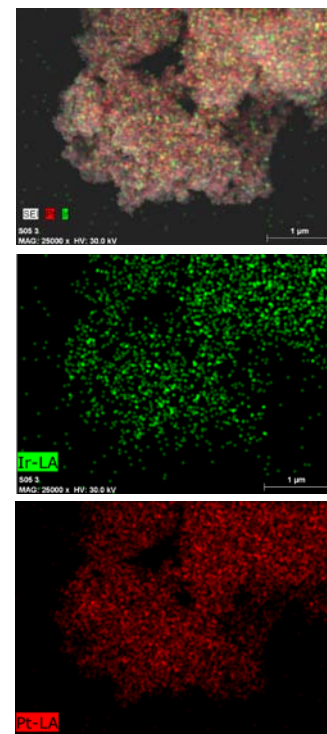


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## Development of Noble Metal Oxide Nanocatalysts for Oxygen Evolution Reaction Using Rotating Disk Slurry Electrode Technique

**IRG II:  
Advanced High Energy  
Materials  
(Water Electrolyzers)**

We present the preliminary results of Pt/Ir oxides nanoelectrocatalysts prepared by using Rotating Disk Slurry Electrode (RoDSE) technique. This method is a fast, clean, and cost efficient one to prepare nanocatalysts in bulk quantities for water electrolysis. Iridium oxide has been widely studied and is among the best working catalysts in the literature for the Oxygen Evolution Reaction (OER) and Pt for the Hydrogen Evolution Reaction (HER). Pt/Ir electrocatalysts have shown bifunctionality in the water electrolysis process. Iridium has been electrochemically deposited on Pt black nanoparticles by chronoamperometry. Linear sweep voltammetry (LSV) was used to characterize its performance for OER by measuring the onset potential and current density by preparing a Nafion® paste electrode materials on Glassy Carbon (GC). One of the samples was treated at 400°C in order to obtain the oxidized material. In comparison to Pt black and unoxidized Pt/Ir, the oxidized Pt/Ir material showed a lower onset potential at 1.35 V vs. Ag|AgCl and higher current densities in 0.5M H<sub>2</sub>SO<sub>4</sub> solution. In this presentation we present the details of the materials preparation method of Ir skin or adsorption on Pt nanoparticles.



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