

## CATALYST R&D

WEDNESDAY, NOVEMBER 8 - ROOM 102 B, 3:45 PM - 5:45 PM

- **Gradational Structured Catalyst Layer for Proton Exchange Membrane Fuel Cells** - *Sota Okuno, Tokyo University of Science*
  - This study aimed for optimization by changing platinum concentration to thickness direction using platinum and carbon black.
- **Highly Active and Stable Platinum Electrocatalysts Based on Engineered Carbon Supports (ECs)** - *Alexey Serov, Pajarito Powder, LLC*
  - The catalyst characteristics and performance, as well as economics of this approach will be presented and discussed. In addition, preliminary results in synthesis and performance testing of hybrid catalysts made using platinum group metal -free (PGM-free) oxygen reduction reaction (ORR) catalysts made using the VariPore™ platform with and without Pt nanoparticles added will be presented.
- **ORR Activity of Pt/MWCNTs Catalysts Prepared via Arc Plasma Deposition Method** - *Yumi Tanaka, Tokyo University of Science*
  - With a motivation for promoting a catalytic activity for oxygen reduction reaction (ORR) of carbon-supported Pt catalyst based on an interaction between carbon and metal particles, Pt species were directly deposited on multi-walled carbon nanotubes (MWCNTs) via arc plasma deposition (APD) method.
- **Performance Enhancement of MEA Prepared by Pulsed Electrophoretic Deposition (EPD) Method for PEMFC** - *Yeon-Tae Yu, Chonbuk National University*
  - In this study, we have applied pulsed EPD to prepare the MEA with different kinds of carbon substrate including flexible carbon cloth with hydrophobic microporous layer (MPL), in order to reduce total Pt loading and improve overall MEA performance.
- **Multi-Functional Catalyst Support** - *Minette Ocampo, pH Matter LLC*
  - One way of improving low-PGM catalyst performance and durability is by optimizing the interaction between the catalyst and the support material. In this presentation, we report a multi-functional carbon support, based on doped carbon nano-structures (i.e. CNxPy), that is engineered to perform better than conventional PEMFC pure carbon supports by enhancing the catalyst stability, durability, and electrode current density with lower PGM loadings.