

The 268th MANA Special Seminar



XAS studies of fuel cell electrocatalysts

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There is a great need to develop lower Pt content oxygen catalysts for use in PEM and direct methanol fuel cells. One promising approach that has received considerable recent attention is the construction of core-shell structured catalyst nanoparticles, in which the core ideally consists of a lower cost metal, thereby maximizing the utilization of the more costly metal, typically Pt. In situ extended x-ray absorption fine structure (EXAFS) provides a means of characterizing the structure of the core-shell catalysts in the working environment, answering questions regarding the completeness of the shell, the stability of the core-shell structure, and any dependence of this structure on the conditions present in the electrochemical environment. Results will be presented for a series of core-shell catalysts that demonstrate the opportunities provided by in situ EXAFS in describing the core-shell structure and its stability as well as the challenges faced in conducting such studies and, more importantly, in interpreting the data.

Venue: Auditorium, 1F, WPI - MANA Building

Date: June 11th, Monday Time: 16:00-16:45

Contact: International Center for Materials Nanoarchitectonics (MANA), Nakata (ex. 8806)

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