

Title Recent Advances on Fluoromembranes for Fuel Cell

Speaker Dr. Bruno Ameduri
Research Director
National Center of Scientific Research (CNRS)
France



Date & Time Friday, April 13, 2012 4:00p.m.

Place INAMORI Hall, Ito campus, Kyushu University

Abstract

Fuel cell can be regarded as potential future alternative source of green Energy. Polymer electrolyte membrane fuel cell (PEMFC) is composed of an electrolyte (usually a membrane which must be an ionic conductor) located between with anode and the cathode. The membrane is a functional polymer which bears protonic, cationic or anionic groups depending on the choice of use and must fulfill drastic requirements. Fluorinated polymers [1] that possess protogen groups are suitable candidates from various strategies:

-either by « direct » radical copolymerization of fluoroolefins bearing protogen groups; that strategy has already led to various commercially available products such as Nafion[®], Flemion[®], 3M[®] Membrane, Hyflon[®] Ion, Aciplex[®] and others.

-or by chemical modifications fluoropolymers.

To overcome issues of thermal stability (> 90 °C) and low relative humidity (HR < 30 %) various challenges for the development of protonic PEMFCs will be proposed.

About the Speaker

Bruno Ameduri leads the “Fluoropolymers and Energy” team at the “Engineering and Macromolecular Architectures” Team of Institute Charles Gerhardt in Montpellier, France. His main interests focus on the synthesis and the characterization of fluorinated monomers (including cure site monomers and telechelics), telomers and copolymers for various applications such as surfactants, elastomers, coatings, and polymers related to energy (fuel cell membranes, polymer gel electrolytes for Li-ions batteries and PV). Coauthor of one book, 22 reviews or chapters of books, more than 210 peer review publications and coinventor of more than 55 patents, he is also a member of the American and French Chemical Societies and is a member of the Editorial Boards of the *Journal of Fluorine Chemistry*, *European Polymer Journal*, *Polymer Bulletin*, and Associated editor of *Polymer Journal* (Japan).

Host: Professor Atsushi TAKAHARA

For registration, please visit our website:<http://i2cner.kyushu-u.ac.jp/>

CONTACT: Research Support and International Affairs division
International Institute for Carbon-Neutral Energy Research
TEL:092-802-6934