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Second International Symposium  
**Advances in Anion Exchange Membranes:**  
*Materials, Processes and Devices*

## **AEMFC 2019**

December 7-8, 2019

Raytheon Amphitheater, Egan Research Center  
Northeastern University, Boston, MA USA

### **AGENDA**

#### Saturday, December 7 – Day One

8:15 *Registration, check-in and continental breakfast / social*

#### **Materials Innovation in Membranes and Ionomer**

9:00 *Opening Remarks & Welcome:* **Sanjeev Mukerjee**, Northeastern University, USA

9:05 **Yushan Yan**, University of Delaware, USA  
Design of novel membranes based on polypiperidine architecture

9:45 **John Varcoe**, University of Surrey, UK  
Radiation-grafted membranes for fuel cells and reverse electrodialysis

10:25 **Lin Zhuang**, Wuhan University, China  
Progress and challenges of alkaline membrane technologies

11:05 *Refreshment break*

11:20 **Chulsung Bae**, Rensselaer Polytechnic Institute, USA  
Molecular engineering of quaternary ammonium aromatic polymers for anion exchange membrane fuel cells

12:00 **Tae-Hyun Kim**, Incheon National University, Korea  
Development of highly conductive and alkaline stable anion exchange membranes for alkaline fuel cell applications: polymer backbone and conducting head group approach

**12:40 Lunch (on site)**

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Meeting hosted by:



## Catalysts and Interface

- 1:20 **Yu-Seung Kim**, LANL, USA  
Impact of Anode Ionomer-Catalyst Interaction on AEMFC performance and Durability
- 2:00 **Kenji Miyatake** and **Junji Inukai**, University of Yamanashi, Japan  
Sublayered structures of thin films of hydrated nafion and anion exchange ionomers cast on Pt substrates analyzed by neutron reflectometry under controlled temperature and humidity
- 2:40 **Qingying Jia**, Northeastern University, USA  
Fundamental aspects of HOR/HER in alkaline pH
- 3:20 *Refreshment break*
- 3:35 **Ian Kendrick**, Northeastern University, USA  
Designer PGM-free catalyst for HER/OER
- 4:15 **Yushan Yan**, University of Delaware, USA  
HER mechanistic aspects/techno-economics
- 4:55 **Huong Doan**, University of Grenoble, France  
PGM free HER catalysts
- 5:35 **Jiayu Peng**, MIT, USA  
Bismuth substituted strontium cobalt perovskites for catalyzing oxygen evolution
- 6.15 *Networking reception (on site)***

*Reception is sponsored by:*



7:00 *End of Day One*

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Meeting hosted by:



Sunday, December 8 – Day Two

8:45 *Continental breakfast / social*

9:15 **Dario Dekel**, Technion University, Israel  
Improving performance stability of anion-exchange membrane fuel cells

9:55 **Marian Chatenet**, University of Grenoble, France  
Borohydride oxidation reaction mechanism on nickel electrodes

10:35 *Refreshment break*

10:50 **Carsten Cremers**, ICT Fraunhofer, Germany  
Electrochemistry of hydrogen peroxide in alkaline and acidic media

11:20 **Travis J. Omasta**, University of South Carolina, USA  
Understanding how electrodes influence AEMFC behavior: lower flowrates, 3.5 W/cm<sup>2</sup> peak power, 1000+h stability and CO<sub>2</sub>

**12:00 Lunch (on site)**

1:00 **Joe Dorsheimer**, Thermo Fisher Scientific, USA  
Advanced instrumentation for materials research:  
Applications and Techniques

1:15 **Discussion 1:** Moderator – Yushan Yan  
Innovations in membrane ionomer chemistry  
*What is next on the innovation radar?*

2:45 *Refreshment break*

3:00 **Discussion 2:** Moderator – Carsten Cramers  
Catalyst-ionomer interface and innovations in AEM devices and processes

4:30 Concluding remarks – Sanjeev Mukerjee