

SPECIAL ISSUE OF

ASME Journal of Electrochemical Energy Conversion and Storage

ON

ANION EXCHANGE MEMBRANES AND AEM BASED SYSTEMS

In the last years, research on anion exchange membranes (AEM) and AEM based systems for energy applications increased dramatically. The main drivers for this trend are

- a) the expectation that AEM based fuel cells can operate with non-platinum catalysts, reducing the system price and alleviating potential problems regarding the limited availability of platinum.
- b) the reverse direction of osmotic drag in AEM based fuel cells, which is expected to reduce fuel crossover in direct fuel cells (DMFC, DFAFC).
- c) the improved kinetics of the oxygen reduction and oxygen evolution reaction in AEM based fuel cells and electrolyzers
- d) the repulsion of vanadium cations by the cationic groups in AEM polymers, reducing the crossover of vanadium ions in vanadium redox flow batteries (VRFB).

In 2013, a workshop series dedicated to anion exchange membranes and AEM based systems was jointly initiated by Korea Institute of Science and Technology (KIST), NEXT ENERGY · EWE Research Centre for Energy Technology and Jagiellonian University. In the following 3 years, this workshop grew steadily and saw over 60 participants from 19 countries in 2015. 23% of the participants were from the industrial sector, pointing out the anticipated commercial relevance of AEM based systems.

The next workshop will be held on June 27-29, in Bad Zwischenahn (Germany): www.next-energy.de/EMEA2016.html

The main focus of the workshop will be on anion exchange membranes, their synthesis, characterization, stability, and their performance in electrochemical applications. These can be fuel cells, electrolyzers, redox flow batteries, zinc-air batteries, reverse electrodialysis cells, and others. In addition, contributions in the field of catalysis for AEM based systems are welcome.

The *ASME Journal of Electrochemical Energy Conversion and Storage* plans to publish a Special Issue on “Anion Exchange Membranes and AEM based systems”, to document these advances. The special issue will be co-edited by Dirk Henkensmeier from Korea Institute of Science and Technology (KIST, Korea), John Varcoe of the University of Surrey (UK), Steven Holdcroft of the Simon Fraser University (Canada) and Alexander Dyck from NEXT ENERGY · EWE Research Centre for Energy Technology (Germany). This special issue is expected to contain contributed research articles.

All manuscripts will be peer-reviewed as per ASME requirements, and will abide by the standards of the *Journal of Electrochemical Energy Conversion and Storage*. The tentative timeline is as follows:

- Draft manuscripts submitted between January-August 2016
- First reviews completed within 1 month
- Accepted manuscripts will appear on-line immediately
- Publication Date: February 2017 issue

Draft manuscripts, prepared per the ASME and JEECS guidelines should be submitted electronically to the Editor, Professor Wilson K. S. Chiu of the University of Connecticut, through the journal web tool:

<http://journaltool.asme.org>

Please select the special issue *Anion Exchange Membranes and AEM based systems* when submitting your paper. The review process will be coordinated by Dirk Henkensmeier (henkensmeier@kist.re.kr), John Varcoe (j.varcoe@surrey.ac.uk), Steven Holdcroft (holdcrof@sfu.ca), Alexander Dyck (alexander.dyck@next-energy.de) and Wilson K. S. Chiu (wchiu@engr.uconn.edu).