

ACS: ANYL, CA, CEI, COMSCI, ENVR, MPPG and PRES

Separation Science and Technology (SST) as a Convergence Platform for *SusChEM*, Sustainable Chemistry, Engineering and Materials

WHEN:

Tuesday-Wednesday, Aug. 12- 13, 2014

WHERE:

@ 248th ACS National Meeting, SF
 Moscone Center, North Building 124

WHO should attend:

Those who are interested in *not only* hearing about *but also* shaping the future of separation science and technology (SST); *Colleagues from industry, academia, national labs and government agencies* looking to understand the strategic importance of ensuring the sustainability of critical materials and resources; *Educators engaged in training the next generation* in the scientific and technological challenges associated with critical elements, limited resources and valuable waste streams from green mining to extractive metallurgy, from resource recovery to water reclamation and beyond; *Separation scientists, chemical/environmental engineers, analytical chemists and all others* addressing Chemistry and Global Stewardship of energy, water, materials and human health.

Organizers:

- Gretchen Baier, *Dow Chemical*
- Mamadou Diallo, *KAIST and Caltech*
- Catherine "Katie" Hunt, *Dow (retired)*

Organizing Committee:

- Evan Flach, *AIChE*
- Bruce Moyer, *ORNL*
- Seyi Oduyungbo, *Chevron*
- Eric Peterson, *INL*
- Darlene Schuster, *AIChE*
- Derrick Wu, *AIChE*

PROGRAM	
Day 1: Tuesday, August 12, 2014	
7:30 am	Meet and Greet - Morning Coffee
ANYL26A	Recognizing Criticality and a Call for Action: Waste as Untapped Source of Valuable Materials (Session Co-chairs: M. S. Diallo, G. Baier)
8:00 am	Introductory Remarks
8:10 am	Enabling the Sustainability of Critical Materials and Resources: The Role of Separation Science and Technology, <i>R. D. Wesson</i>
8:30 am	Wastes as Raw Materials: The Role of Separations Science and Technology, <i>D. T. Allen</i>
9:00 am	Critical Materials at the Department of Energy, <i>D. J. Bauer</i>
9:30 am	Panel Discussion (Moderator: G. Baier)
9:50 am	Break
ANYL26B	Reengineering Mining and Extractive Metallurgy: Green Mining (Session Co-chairs: E. S. Peterson, D. Schuster)
10:10 am	Introduction
10:20 am	Industrial Perspectives on Separation Science and Technology for Critical Materials Recovery, <i>J. Burba</i>
10:50 am	Strategies for Diversifying the Supply of Critical Materials for Clean Energy, <i>B. A. Moyer</i>
11:20 am	Separation Science and Technology Education: Extractive Metallurgy Perspective, <i>C. Anderson</i>
11:50 am	Panel Discussion (Moderator: D. Schuster)
12:10 pm	Lunch Break
ANYL26C	Purifying Impaired Water: Resource Recovery and Water Reclamation (Session Co-Chairs: M. S. Diallo, C. T. Hunt)
1:30 pm	Introduction
1:40 pm	Recovery of Clean Water and Critical Materials from Mining Wastewater and Solutions Using Nanofiltration; <i>T. Young*</i> , <i>P. Aerts</i>
2:10 pm	Water: A Critical Material Enabling Space Exploration, <i>K. Pickering</i>
2:40 pm	Sustainable Water Technology as Key element for Global Nutrient Recovery: The Wetsus Research Program, <i>B. Hamelers</i>
3:10 pm	Break
3:30 pm	Next Generation of Multifunctional Membranes for Resource Recover, <i>M. S. Diallo*</i> , <i>M. Kotte</i>
4:00 pm	Separation Science and Technology Education: A Perspective from the Interface of Chemistry and Chemical Engineering, <i>S. L. Scott</i>
4:30 pm	Panel Discussion (Moderator: C. T. Hunt)
5:10 pm	Closing Remarks (Day 1)
Day 2: Wednesday, August 13, 2014	
7:30 am	Meet and Greet – Morning Coffee
ANYL26D	Reclaiming Precious and Rare Earth Metals: From Urban Mining to Recycling (Session Co-Chairs: B.A. Moyer, D. Schuster)
8:00 am	Introduction
8:10 am	Recycling of Precious Metals, <i>M. Caffarey</i>
8:40 am	Enhancing the Recovery and Recycling Efficiency of Critical Materials for Clean Energy, <i>E. S. Peterson</i>
9:10 am	Microbial Mediated Recovery of Recycled (REE); <i>D. W. Reed*</i> , <i>D. F. Bruhn</i> , <i>D. L. Daubaras</i> , <i>V. S. Thompson</i> , <i>Y. Jiao</i> , <i>M. C. Yung</i>
9:40 am	Panel Discussion (Moderator: B. A. Moyer)
10:00 am	Break
ANYL26E	Converging Separation Science and Technologies for Materials Sustainability: Research and Education Needs (Session Co-Chairs: G. Baier, M. S. Diallo)
10:20 am	Introduction by <i>Special Guest</i> , <i>A. H. King</i> , Director, Critical Materials Institute (CMI)
10:30 am	Building a Global Science and Technology University Focused on Sustainability: The KAUST Research and Education Programs on Separation Science and Technology, <i>Y. Gnanou</i>
11:00 am	High Efficiency Coupling of Chemical Sensing to Chemical Treatment in Low-Dimensional Nanofluidic Structures; <i>P. Bohn*</i> , <i>N. Contento</i> , <i>D. Grismer</i> , <i>L. Zaino</i> , <i>W. Xu</i>
11:30 am	Separation Science and Technology Education: Chemical Engineering Perspective, <i>Y. Kawajiri</i>
12:00 pm	Panel Discussion (Moderator: M. S. Diallo)
12:20 pm	Concluding Remarks: <i>R. D. Wesson</i> , <i>C. T. Hunt</i>

For info visit: AIChE.org/SusChEM