

AICHE

SUSTAINABLE ENGINEERING FORUM NEWSLETTER

January 2011
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Message from the Chair

First of all, I would like to wish all the SEF members and newsletter readers a very happy and prosperous new year. It has been a very busy quarter for the SEF. The Forum sponsored/co-sponsored a record number of sessions at the AIChE Annual Meeting held in Salt Lake City, Utah, from November 7-12. SEF also co-sponsored the 2nd International Congress on Sustainability Science and Engineering, which concluded last week.

The clear skies in Tucson Arizona provided the perfect backdrop for a broad range of discussions on energy, power, water, transportation, ecosystems, products, processes and architecture at ICOSSE'11. Speakers from industry, academia, government labs and agencies provided their perspectives on the challenges of sustainability, as faced by engineers, scientists and other professionals.

Details of more upcoming events can be found in the Announcements section. A full list of the programming activities for the AIChE 2011 Spring Meeting is given in the Programming Activities column. The sessions for the 2011 AIChE Annual Meeting are also listed under the names of their respective technical areas: General (23A), Sustainable Biorefineries (23B) or Sustainable Energy (23C).

You will find a call for nominations for the 2011 SEF awards in the Announcements section. Detailed information is given in the SEF Awards column. The link to download the form is also provided. The application/nomination deadline is April 29.

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<http://www.aiche.org/sef>

The awards for research excellence, industry practice and student paper will be presented at the Sustainable Engineering Forum Luncheon during the AIChE Annual Meeting, like the previous year.

Please send us your comments and suggestions regarding the forum. We look forward to hearing your views on how to make the Forum even better. As always, your constant support and participation in Forum activities is greatly appreciated.

Helen Lou
Chair, Sustainable
Engineering Forum



Announcements

By David N. Thompson

ICE 2011 – Second International Congress on Energy: Sustaining Supplies

This targeted conference, organized by the AIChE Center for Energy Initiatives, is created by grouping the high quality energy-related sessions submitted to the Annual Meeting under one umbrella. This year's conference brings industry, university and government leaders together to address the challenge of sustaining the energy supply. For more information, go to <http://energycongress.org/>.

Call for Nominations: Sustainable Engineering Forum Awards

- (1) Research Excellence Award annually presented for basic or applied research results relative to the sustainability of products, processes, or the environment. The award is to recognize the one who has made significant technical contributions to the advancement of sustainable engineering in research, teaching, and development activities.
- (2) Industry Practice Award recognizes individuals or teams who have made outstanding contributions over a long-term basis pertinent to sustainable engineering development in the practice of chemical process/product design or manufacturing. This award focuses on applicants from small, medium, or large companies.
- (3) Student Paper Award is presented to full-time undergraduate or graduate students who prepare the best technical papers that describe results related to engineering and sustainability.

Detailed information is given in the SEF Awards section of this newsletter.

To download the application/nomination form, please visit:

http://webpages.eng.wayne.edu/~ay3168/AICHE_SEF/awards/AICHE_Award%20Nomination%20Form_2009.pdf

2011 National Programming Retreat

The 2011 AIChE National Programming Committee's Programming Retreat for the meetings of 2012 will take place at the 2011 Spring Meeting in Chicago, IL on Saturday, March 12, 2011 at the Hyatt Regency Chicago. The meeting will kick off with a noon lunch and the meeting will follow. The Retreat is a day before the opening of the AIChE Spring Meeting. All attendees are invited to attend the Saturday evening joint Leadership/Retreat Reception.



Open Position Announcement

The U.S. Environmental Protection Agency wishes to announce an open position. For details, please contact:

Dr. Heriberto Cabezas
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SEF 2011 Awards

By Thomas Marrero

(1) 2011 Research Excellence in Sustainable Engineering Award:

Winner: One person per year

Sponsor(s): Industry

Description: Award is annually presented for basic or applied research results relative to the sustainability of products, processes, or the environment. The award is to recognize the one who has made significant technical contributions to the advancement of sustainable engineering in research, teaching, and development activities. Emphasis should be placed on accomplishments and advances made within the last five years, although the award can also be made to someone who has had an outstanding career.

Deadline: April 29, 2011.

Nominations should be submitted to:
SEF Awards Committee Chair
T.R. (Tom) Marrero, Professor
Department of Chemical Engineering
W2030 Lafferre Hall
Columbia MO 65211
E-mail: MarreroT@missouri.edu
Phone: 573-882-3802

Awards: The Awardee will receive \$1,000 and a plaque. Decisions are scheduled for June 3, 2011.

(2) 2011 Industrial Practice in Sustainable Engineering Award:

Winner: One person or team per year

Sponsor(s): Albemarle Corporation

Description: This award recognized individuals or teams who have made outstanding contributions over a long-term basis pertinent to sustainable engineering development in the practice of chemical

process/product design or manufacturing. This award focuses on applicants from small, medium, or large companies. The applicants' achievements will be based on both publications (articles, patents, and internal reports) and reputation substantiated by at least three (3) written recommendations. The selection of the Awardee for a given year will be based on their continued contributions to the development, implementation and dissemination of sustainable engineering practice in the chemical process industry and related fields. Contributions may include paradigms for sustainable development and/or general application of new practices. The Awardee need not necessarily be a chemical engineer. The applicant or at least one member of the team must be a member of AIChE Sustainable Engineering Forum at the time of application.

Application/ Nomination Deadline:

April 29, 2011

Application/nomination documents should be submitted to:
SEF Awards Committee Chair
T.R. (Tom) Marrero, Professor
Department of Chemical Engineering
W2030 Lafferre Hall
Columbia MO 65211
E-mail: MarreroT@missouri.edu
Phone: 573-882-3802

Note: The AIChE Award Nomination Form can be downloaded from the AIChE Website: <http://www.aiche.org/About/Awards/Division.aspx>.

Awards: The awardee will receive a plaque and \$2,500. Decisions are scheduled for June 3, 2011.

Presentation: The Award will be presented at the Sustainable Engineering Forum luncheon during the AIChE Annual National Meeting.

(3) 2011 Sustainable Engineering Forum Student Paper Award:

Winner: One winner and two honorable mentions per year.

Sponsor: GlaxoSmithKline

Description: Awards are presented to full-time undergraduate or graduate students who prepare the best technical papers that describe results related to engineering and sustainability.

Selection Criteria:

1. Technical merit: The student(s) needs to provide original experimental data and/or published facts.
2. Quality: The student(s) need to have the paper published (or to be published) in a refereed journal within the last year.
3. Results: The content of the paper needs to describe significant (to society) results.
4. Authorship: The student(s) needs to be the primary author(s)
5. Qualifications: The student(s) must be AIChE member(s), the SEF, and enrolled in an ABET accredited Chemical Engineering program. The student may submit an application to join SEF, if not already a member.

Application/Nomination Deadline: April 29, 2011. Papers may be submitted directly by student(s), or nominated by local section chair, or an AIChE member. The original, signed manuscript and an e-mail copy of the paper with pertinent information are to be sent to:

SEF Awards Committee Chair
T.R. (Tom) Marrero, Professor
Department of Chemical Engineering
W2030 Lafferre Hall
Columbia MO 65211
E-mail: MarreroT@missouri.edu
Phone: 573-882-3802

Awards:

1. Up to three papers (One winner and two honorable mentions) will be selected each year; decisions are scheduled for June 3, 2011.
2. Student Award recipient will receive \$500 for travel expenses associated with attending the AIChE annual meeting, plus, a certificate of recognition.
3. Presentation: The awards are presented at the SEF luncheon during the AIChE Annual National Meeting.
4. Past Winner(s): This paper competition was initiated in 2008.

Programming Activities

By Christina Piluso

AIChE 2011 Spring Meeting

Topical 3: Advances in Sustainability

Monday, March 14, 2011-- 10:30 AM-12:00 PM

(#14) - [18K00 Spring Meeting Keynote Address - Sponsored by the AIChE Fuels & Petrochemicals Division](#)

Sponsored by: Keynotes and Plenaries

Co-Sponsored by: Computing Systems and Technology Division (10), Education (04), Transport and Energy Processes (07), Environmental Division (09), Fuels and Petrochemicals Division (16), The Young Professional Advisory Board (YPAB) (18C), Management Division (05), North American Mixing Forum (06), Process Development Division (12), Separations Division (02), Sustainable Engineering Forum (23), Topical 2: Advanced Fossil Energy Utilization (T2),

Topical 3: Advances in Sustainability (T3), Topical 5: University Research for Industry (T5A), Topical 6: 11th Topical Conference on Gas Utilization (T6A), Topical 7: 14th Topical on Refinery Processing (T7), Topical 8: The Dr. James Fair Heritage Distillation Symposium (T8), Topical 9: Waste & Biomass Valorization (T9), Topical 4: The 23rd Ethylene Producers' Conference (T4)

Wednesday, March 16, 2011-- 8:00 AM-11:40 AM

(#99) - [T3001 Establishing and Ensuring Sustainable Biofuels Development: A Department of Energy/Industry Perspective](#)

Sponsored by: Topical 3: Advances in Sustainability

Co-Sponsored by: Sustainable Refineries (23B)

Wednesday, March 16, 2011-- 2:00 PM-5:00 PM

(#116) - [T3002 Sustainable Energy in Practice](#)

Sponsored by: Topical 3: Advances in Sustainability

Co-Sponsored by: Sustainable Energy (23C)

AIChE 2011 Annual Meeting

1. Sustainability Plenary

General (23A):

1. Design & Operation for Sustainability
2. Complexity, Networks, Dynamics, & Sustainability
3. Sustainability Metrics, Indicators, & Life Cycle Assessment
4. Sustainable Materials
5. Sustainable Water Use & Management
6. Sustainable Chemicals
7. Water-Energy-Climate in a Sustainable Urban Environment

Sustainable Biorefineries (23B):

1. Sustainable Biorefineries Plenary Session (Invited Papers)
2. Microbial Engineering for the Synthesis of Bulk and High-Value Products
3. Advances In Algal Biorefineries
4. Catalytic Conversion of Renewable Resources to Synthesis Gases and Pyrolysis Oils
5. Biological Conversions and Processes for Renewable Feedstocks
6. Chemical and Catalytic Conversions and Processes for Renewable Feedstocks
7. Sustainable Biomass Feedstock Production and Supply for the Emerging Biorefinery Industry
8. Poster Session: Sustainability & Sustainable Biorefineries
9. Reactor Engineering for Biomass Feedstocks
10. Developments In the Pretreatment of Lignocellulosics for Bioconversion

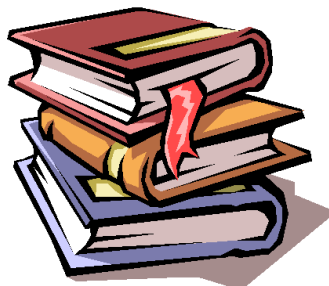
Sustainable Energy (23C):

1. Sustainable Energy Plenary
2. Energy Efficiency, Challenges and Solutions
3. Process Design and Simulation Tools for Sustainable Energy
4. CO₂ Capture, Control and Sequestration
5. Sustainable Electricity: Generation, Transmission, and Storage
6. Carbon Efficient Chemical Engineering Systems
7. Ionic Liquids for Carbon Capture
8. Solvent-Based Carbon Capture Processes
9. Sorbent Processes for Carbon Capture
10. Materials for Solar Energy
11. Sustainable Gasoline From Renewable Resources
12. Membrane Processes for Carbon Capture
13. Sustainable Diesel Fuel From Renewable Resources

Education Column

By Jeffrey Seay

The Sustainability Engineering Forum recently participated as a sponsor of the 2011 International Congress on Sustainability Science and Engineering (ICOSSE'11) in Tucson, Arizona. A session on Teaching and Educational Programs in Sustainability, chaired



by Cliff Davidson from Syracuse University and former SEF Chair, Yinlun Huang from Wayne State University, featured contributions from David Allen,

University of Texas at Austin, Barbara Minsker, University of Illinois, Jiri Klemes, University of Pannonia, Brad Allenby, Arizona State University, Shannon Ciston, University of New Haven and Miriam Heller, MHI Tech Systems.

Student activities were also in the spotlight at ICOSSE'11. To promote the activities of young researchers in the field of sustainable product and process engineering, awards were given out to Outstanding Student Researchers in graduate and undergraduate categories. The awardees were as follows:

Undergraduate Research Award Winner

Wesley Whipple and Jeffrey Seay, (University of Kentucky, USA), "Interfacial Phenomena in the Production of Biodiesel"

Undergraduate Research Award Runner Up

Weini Qiu, Xiany Lie, Jianwel Dai, Baikun Li and Lei Wang, (University of Connecticut, USA), "Design and Modeling of an Underwater Energy Harvesting System"

Graduate Research Award Winners

Olamide Shadiya and Karen High (Oklahoma State University, USA), "Sustainability Evaluator: Impact Assessment Tool for Evaluating the Sustainability of a Process"

Dawn Fox (University of South Florida, USA), Thomas Pichler (University of Bremen, Germany), Daniel Yeh and Norma Alcantar, "Cactus-Based Materials for Arsenic Removal from Drinking Water"

The SEF wishes to congratulate these young researchers, as well as all the other outstanding participants, for their contribution to sustainability focused research activities.

Finally, a sustainability category was included as part of the Student Poster Competition at the 2010 AIChE National Student Conference in Salt Lake City. This new category has provided a showcase for undergraduate researchers working in the field of sustainability. Although participation was light at the 2010 Meeting, this category will continue at the 2011 National Student Conference in Minneapolis, Minnesota, so please encourage any students working in the field of sustainability to consider participating.

Any correspondence with regard to this column should be sent by e-mail to Jeff Seay, Education Committee Chair, at the following address: "jseay@engr.uky.edu". As always, we look forward to hearing from you.

Member Communications

By Heriberto Cabezas

Sustainability Readings

Lists of valuable sustainability related reading materials, as assembled by Earl Beaver, are available on the SEF website.

Please visit the "Readings" section of the SEF website (<http://www.aiche.org/sef>). If you have any new materials to be added in, please contact the webmaster.

Members' Column

By Denise Quarles

Not a member of AIChE or the Sustainable Engineering Forum? In order to guarantee that you are on the current email list and will have access to all existing SEF materials, please follow the link and make sure that you join the SEF!

<https://www2.aiche.org/SolutionSite/default.aspx?tabid=168&action=MBRProductDetails&args=35&aicheskin=aiche>.

We are an active group of over 1000 members ranging from industry to academia. The diverse interests of our members have contributed to the range of activities which we offer through the forum.

How to Join

Please use the link below to access more detailed information on membership requirements and application instructions.

As a member, you will be placed on our e-mailing list and notified of upcoming meetings and events.

www.aiche.org/DivisionsForums/ViewAll/SEF.aspx

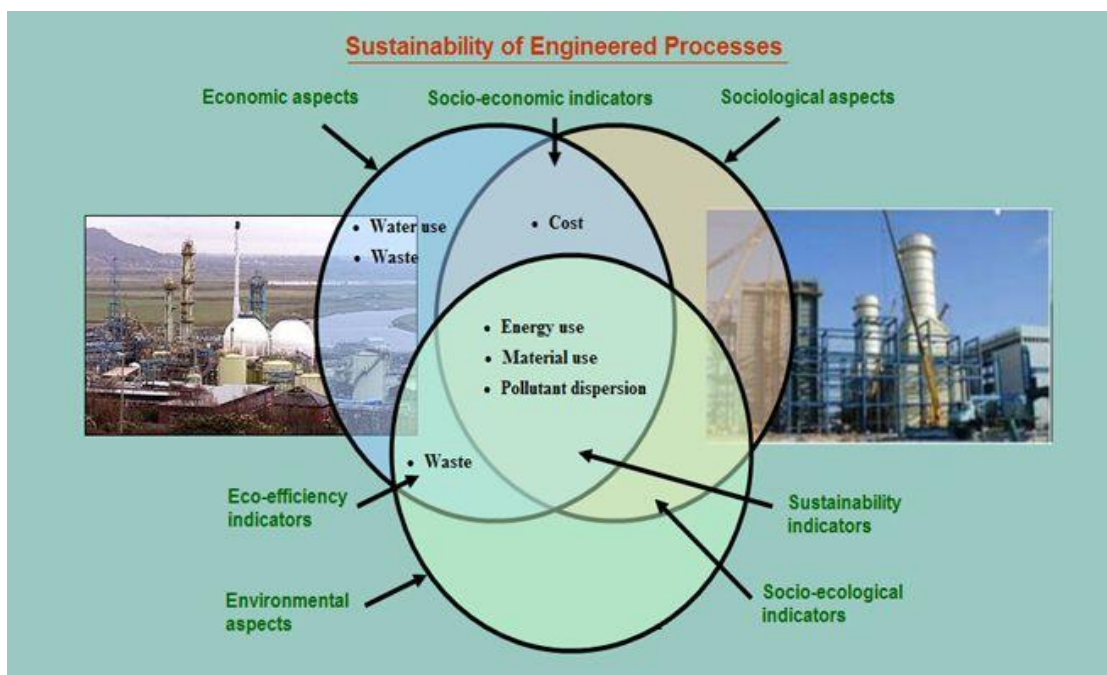
Three Steps to Membership

1. Applicant's Request for Membership
 - Complete the SEF Application available online at www.aiche.org/DivisionsForms/ViewAll/SEF.aspx
 - REGULAR membership annual fee \$20
 - STUDENT membership annual fee \$10

Membership fee waived for full-time undergraduate or graduate students for two years provided that student is a paid AIChE member; otherwise, a \$10 annual fee is required

Mail completed form to AIChE customer Service, 3 Park Avenue, New York, NY 10016

2. Staff Review to ensure completeness of application
3. Membership - Welcome!



SEF Leadership 2010-2011

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SEF Leadership 2010-2011

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Area Chair:

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Past Chairs:

2007-2009	Dr. Yinlun Huang, Professor Department of Chemical Engineering and Materials Science Wayne State University Detroit, MI 48202 Phone: (313) 577-3771 E-mail: yhuang@wayne.edu
2006-2007	Dr. Martin Abraham Dean, College of Science, Technology, Engineering, and Mathematics Youngstown State University Youngstown, OH 44555 Phone: (330) 941-3009 Email: martin.abraham@ysu.edu
2003-2005	Dr. Subhas K. Sikdar Associate Director for Science National Risk Management Research Lab/USEPA 26 W. M.L. King Dr. Cincinnati, OH 45268 Phone: (513) 569-7528 E-mail: sikdar.subhas@epa.gov