



# MeetingPreview

## ANNUAL MEETING HEADS TO MINNEAPOLIS, OCT. 16–21 Energy and ChE Innovation are among the Major Themes

**A** celebration of the International Year of Chemistry, an exploration of chemical science innovation, and the launch of an expanded International Congress on Energy will be among the headline events when AIChE takes its 2011 Annual Meeting to the Minneapolis Convention Center in October. The meeting's 750-plus sessions include a new World

Congress on Sustainable Engineering and a new conference on Water Technology for Developed and Developing Countries, as well as a variety of topical conferences, major lectures, plenary talks, and collaborations with other organizations.

Minneapolis/St. Paul, consistently ranked as one of the most livable metropolitan areas in the U.S. — noted for its literacy, culture, green space, cleanliness, and “cool factor” — will provide an enjoyable setting where attendees can meet and interact with colleagues and many of chemical engineering's leaders and innovators.

The AIChE Annual Meeting has earned an international reputation as the premier forum for chemical engineers working in research and development, with one of its distinguishing features being its focus on both technical innovation and the professional growth of chemical engineers. More than 4,500 engineers and scientists are expected to attend this year's conference to hear some of the profession's top thinkers present their ahead-of-the-curve research and to gain insight into best practices and exciting developments in the field's growth areas. Short courses, poster sessions, plenaries, and presentations



▲ Downtown Minneapolis as viewed from across the Mississippi River.

by distinguished lecturers round out the agenda, and countless networking opportunities — both formal and informal — will permit attendees to make professional connections and catch up with colleagues and friends.

For information about conference registration and the complete schedule of events, visit [www.aiche.org/annual](http://www.aiche.org/annual).

### Headline events

The Annual Meeting's programmers have covered virtually all of the critical areas in the chemical engineering field. In 2011, signature events include:

- *The International Year of Chemistry Plenary*, Monday, Oct. 17, 11:15 am – 12:15 pm. The United Nations General Assembly has declared 2011 as the International Year of Chemistry (IYC) — prompting a series of international events to inspire public appreciation of chemistry in meeting world needs, as well as to generate enthusiasm for the creative future of chemistry and chemical engineering among future generations of scientists and engineers. The IYC festivities continue in Minneapolis at this plenary session that celebrates the achievements of chemistry and its

contributions to the well-being of people everywhere. Thomas Peterson, Assistant Director for Engineering at the National Science Foundation (NSF), will speak about “The Importance of Basic Research Investment to Economic Growth,” examining the societal impact of research investments in chemistry and chemical engineering made by NSF.

- *Annual Meeting*

*Plenary: Chemical Science*

*Innovation — The Future of the U.S. Chemical Enterprise*, Monday, Oct. 17, 12:30 pm – 5:45 pm. Co-sponsored by the Council for Chemical Research, this two-session symposium features thought-leaders from a variety of disciplines who will offer their perspectives and visions for the future of chemical science innovation in the U.S. The speakers include chief technology officers of major corporations in the chemicals and materials industries, university presidents, a national laboratory director, and a private foundation director. They will explore topics such as: how chemical science innovation is fostered; the importance to the U.S. of global initiatives; the challenges to materials, chemicals, and energy sustainability; and developing the workforce of the future.

- *The Second International Congress on Energy* (ICE, [www.energy-congress.org](http://www.energy-congress.org)), presented by AIChE's Center for Energy Initiatives, brings together scientists and engineers working in areas ranging from bioenergy to carbon capture and separation science for a comprehensive review of research and development in sustainable energy supplies. Expanding on the success of the 2010 ICE



# 11 AICHE®

Annual Meeting, Minneapolis, MN

event, the organizers have restructured the congress's 100 technical sessions to provide in-depth coverage of four key program areas: Global Solar and Nuclear Energy in the 21st Century (including a plenary session, "What Makes Energy Clean?"); Lignocellulosics: Biorefineries and Sustainable Energy; Hydrogen Production and Storage; and Innovations of Green Process Engineering for Sustainable Energy and Environment.

- *The First Annual World Congress on Sustainable Engineering* will provide chemical engineers with a voice in shaping sustainable development. AICHE's Sustainable Engineering Forum, together with the Environmental and Forest Bioproducts Divisions, are collaborating on this congress, which focuses on the measurement, design, technological advancement, and educational training related to process sustainability, and includes three plenary sessions and posters session on bioresources engineering and sustainable biorefineries.

## Major topical conferences

- *The Quality by Design (QbD) Topical Conference and Plenary* focuses this year on comprehensive QbD in pharmaceutical development and manufacture. It represents a new collaboration between AICHE's Food, Pharmaceuticals and Bioengineering Div., the U.S. Food and Drug Administration (FDA), and the Manufacturing Science and Engineering Section of the American Association of Pharmaceutical Scientists (AAPS), which are co-sponsoring this event. Beginning with a plenary session on Monday, Oct. 17, experts on QbD will update attendees on critical issues and the future direction of QbD, including applications of QbD, and QbD for process development and product development. The conference will include a roundtable (Tuesday, Oct. 18), chaired by Christine Seymour, Pfizer Global Research and Development, and Huiquan Wu, FDA, Div. of Product Quality Research. Special "Excellence in Integrated QbD Practice" awards will be presented to speakers whose conference presentations further advance the practice of QbD.

- *Water Technology for Developed and Developing Countries*, a topical conference co-sponsored by AICHE's Water Initiative group, concentrates on separations technology, and includes a plenary session on water technology,

sessions on membrane separations, and an industry-university poster session covering water treatment, water reuse, and materials development.

Another key event is the 10th Annual Meeting of the American Electrophoresis Society (AES), which presents both experimental and computational research related to electrophoretic separation of biomaterials such as proteins, DNA, and cells and cellular materials. The conference includes a plenary session and poster reception.

Additional topical conferences cover nanomaterials for energy applications; sensors; systems biology; and the environmental aspects, applications, and implications of nanomaterials and nanotechnology — plus much more.

## World-class presentations

The Annual Meeting's keynote lectures allow attendees to hear some of the world's most prominent scientists discuss new developments in the field. Among the major lectures this year:

- *Professional Progress Award Lecture*, Tuesday, Oct. 18, 11:15 am – 12:15 pm. This will be presented by the Institute's 2010 Professional Progress Award

recipient, Michael Deem, the John W. Cox Professor of Bioengineering and a professor of physics and astronomy at Rice Univ. Deem's



▲ Deem

lecture, "F = ma of Biology?," will explore his efforts to find fundamental mathematical laws of biology and their implications for engineering design — from ecological food networks to the immune system and its response to vaccines.

- *James E. Bailey Award Lecture*, Tuesday, Oct. 18, 6:00 pm – 7:00 pm. The Society for Biological Engineers' (SBE) Bailey Award recognizes

## SHORT COURSE AND WORKSHOPS

Ten short courses will be offered beginning Sunday, Oct. 16, prior to the start of the meeting, including: Benchmarking for Sustainability; Crystallization Process Development; Quality by Design Biologics; Synthetic Biology; Cellulosic Biomass Commercialization; Career Development for Women in Chemical Engineering; and How to Meet New ABET Requirements on Hazard Management. An additional course, Multiphysics Modeling in Chemical Reaction Engineering, will be offered on Wed., Oct. 19. Professional development hour (PDH) credits will be available. The short courses are open to everyone and do not require registration for the Annual Meeting, and they have much lower fees than comparable courses not co-located with the meeting. Seating is limited, so preregistration is advised. For detailed descriptions of the short courses and to register, visit the Annual Meeting web site: [www.iche.org/annual](http://www.iche.org/annual).

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outstanding contributions in the

field of biological engineering. This year's recipient, Chaitan Khosla, chair and professor in the departments of chemistry, chemical engineering, and biochemistry at Stanford Univ., will talk about "Natural Products and the Chemical Engineer."



▲ Khosla

• *The 63rd Institute Lecture*, Wednesday, Oct. 19, 11:15 am – 12:15 pm. William J. Koros, the Roberto C. Goizueta Chair and Georgia Research Alliance Eminent Scholar in Membranes at the Georgia Institute of Technology, will deliver this year's Institute Lecture. His talk is entitled "Beyond Water: Expanding the Spectrum of Efficient Large Scale Separations." (See the related article on p. 62.)



▲ Koros

• *The 4th Corporate Innovation Award Lecture*, Thursday, Oct. 20, 11:15 am – 12:15 pm. This honor recognizes corporations or corporate divisions for innovation that has resulted in the successful commercial development of new products or new processes for making useful products. The 2011 award recipient is Xerox Corp., in recognition of its emulsion aggregation toner technology, which will be discussed in the lecture.

Among other lectures and awards, many of AIChE's technical division and forums will be honoring their annual award winners at special sessions and dinners, and newly elected AIChE Fellows will be recognized at the Fellows Breakfast on Tuesday, Oct. 18.

## Not to be missed

On Sunday, Oct. 16, 5:00 pm – 6:30 pm, prior to the Annual Meeting's Welcome Reception, AIChE will salute some of the chemical engineering profession's eminent individuals at the *Honors Ceremony*. Recently established prizes that recognize accomplishments in industrial practice, including the Industry Leadership Award and the Industrial Research and Development Award, join a long list of many established honors. (The recipients of the 2011 Institute and Board of Directors' Awards will be announced in the October issue of *CEP*.)

*The National Student Conference* (Oct. 14–17) helps undergraduate chemical engineers to connect with both professional engineers and AIChE as a professional home. Some 1,500 students from more than 100 chemical engineering schools are expected to attend the conference for professional development workshops, scholarly competitions, poster presentations, and networking events. The Student Conference overlaps with the professional meeting on Sunday and Monday, allowing for greater interaction between students and professionals.

**Program and registration information for the Annual Meeting is available at [www.aiche.org/annual](http://www.aiche.org/annual)**

A popular highlight of the Student Conference — and a signature event for AIChE — is the national *Chem-E-Car Competition*, where undergraduate teams — the top qualifiers in the Spring 2011 regional competitions — will run their chemical-reaction-powered shoebox-size vehicles for the national prize. Sponsored by Chevron, the competition incorporates a comprehensive safety program — including documentation, vehicle inspections, a poster session, and annual safety training workshops required for participating teams. The Chem-E-Car Competition takes place Sunday, Oct. 16, beginning at 2:00 pm.

## Get involved

Over the course of the Annual Meeting, AIChE members (and other chemical engineers) who are interested in taking a more active role in their professional society will find many opportunities to interact with the Institute's most dynamic members, at a variety of receptions, dinners, award presentations, and other special events sponsored by the Institute's committees, technical divisions, and forums. Among these are gatherings of the Women's Initiatives Committee, the Minority Affairs Committee, the Local Sections Committee, the Student Chapters Committee, and the Young Professionals' Advisory Board, as well as a recognition reception of AIChE's volunteer leaders.

All of these groups need motivated volunteers to help build and sustain quality programs and services for AIChE members. These events at the Annual Meeting provide excellent opportunities for involvement in Institute leadership.

**CEP**

## TOPICAL CONFERENCE PROCEEDINGS AVAILABLE ONLINE

AIChE now provides its Annual Meeting Proceedings both online or on CD-ROM. Conference Proceedings may be ordered in advance using the conference registration form. All submitted papers received prior to the pre-conference deadline will be included, and where papers are not uploaded, paper proposal abstracts will be provided. The email addresses of speakers will also be included to facilitate contact. The pre-meeting price for online proceedings is \$95, and \$130 for an online/CD-ROM bundle. After the meeting, the price of the CD-ROM will increase and availability will be subject to supply.



## Ammonia Symposium will Explore Safety Strategies, Sept. 11–15, in Montreal

An international roster of plant safety experts will present case studies and lessons learned to a broad audience of plant safety personnel, plant managers, and process engineers at AIChE's 56th Annual Safety in Ammonia Plants and Related Facilities Symposium, to be held in September at Le Centre Sheraton Montreal Hotel, in Montreal, QC, Canada.

Organized by AIChE's Ammonia Safety Committee, the annual safety symposium is dedicated to making the plants that manufacture ammonia and related chemicals, such as urea, nitric acid, ammonia nitrate, and methanol, as safe as possible. More than 500 attendees, representing many of the world's largest companies, are expected to attend the conference, where they will learn about technological advances and discuss strategies on how to improve plant safety, maintenance, and management. Noted practitioners and company leaders will describe how their organizations avoid or manage potential plant accidents, present solutions

to a variety of safety engineering problems, and discuss some of the products available to improve safety.

Setting the stage for the more than two dozen presentations will be a Monday, Sept. 12, keynote address entitled "Lessons Learned From Major Chemical Industry Incidents," by Rafael Moure-Eraso, Chair and CEO of the U.S. Chemical Safety and Hazard Investigation Board.

Among the valuable opportunities for networking and information exchange is a roundtable session on Thursday morning, Sept. 15, which will provide a venue for open and informal discussion of common problems and incidents. The roundtable will address ammonia plant operational safety topics, with special attention to ammonia storage and handling facilities, urea reactor incidents, primary reformer exit systems, and procedural controls.

An early registration rate is in effect until Aug. 9. For program and registration information, visit [www.aiche.org/ammonia](http://www.aiche.org/ammonia).

## AIChE, SPE Co-Host Workshop on Challenges in Flow Assurance, Sept. 26–28, Houston

Flow assurance challenges have increased significantly with the growing number of offshore and deepwater projects. Engineers and their colleagues working in flow assurance and upstream engineering will have an opportunity to learn from high-profile experts and share solutions to technical problems when AIChE and the Society of Petroleum Engineers (SPE) co-host their sixth joint workshop. This year's event — Challenges in Flow Assurance — will take place Sept. 26–28 at the Omni Houston Hotel at Westside, in Houston, TX.

According to Phaneendra Kondapi, a workshop session co-chair, "today's subsea engineers face a flow assurance gap that requires industry attention. This workshop fills that gap by providing an opportunity for industry experts to discuss various pragmatic flow assurance problems (*i.e.*, hydrates, waxes, asphaltenes, transient thermo-hydraulic multiphase flow, design of subsea process equipment, etc.) with the entire subsea-engineering community."

Organizers add that the workshop setting provides a focused environment for networking and one-on-one information exchange. With attendance limited to 120 participants, early registration is recommended.

Each of the meeting's sessions will be introduced with a keynote presentation by an expert in the field. As this issue goes to press, the sessions and the confirmed

keynote speakers on Tuesday, Sept. 27, are:

- *Identifying and Eliminating Flow Blockage I: Hydrates* — E. Dendy Sloan, Professor Emeritus, Colorado School of Mines
- *Fluid Phase Behavior* — Jefferson L. Creek, Senior Research Consultant, Chevron
- *Multiphase Flow I* — Moye Wicks, Shell
- *Compact/Modular Processing for Remote Applications* — Gene Kouba, Senior Research Consultant, Chevron.

The program continues on Sept. 28, with the following sessions and keynote speakers:

- *Identifying and Eliminating Flow Blockage II: Waxes, Asphaltenes, etc.* — Oliver C. Mullins, scientific advisor, Schlumberger
- *The Role of Chemical Additives* — Stephan Allenson, Nalco Energy Services
- *Multiphase Flow II* — introduced by a representative from ANSYS/Fluent.

The conference wraps up with a panel discussion led by workshop co-chairs Norman Carnahan (Carnahan Corp.), Scott Hickman (ExxonMobil), and Hariprasada Subramani (Chevron).

Early registration discounts are in effect until Aug. 26. For program and registration information, visit: [www.aiche.org/conferences/specialty/6thSPEWorkshop.aspx](http://www.aiche.org/conferences/specialty/6thSPEWorkshop.aspx).