



Flashpoint

The Newsletter of
AICHE's Fuels and
Petrochemicals Division

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The Chair's Corner By Ralph Pike

We welcome incoming Vice-Chair Tim Olsen, Treasurer Steve Coleman, and Directors Robert Schmidt, Jayce Mathews, and Ahmed S. Khogeer and look forward to their contributions. We thank outgoing Past-Chair James Turner, Treasurer Dennis O'Brien and Directors Tim Olsen, Bill Turk and James Harris for their yeomen's work for the Division and continued support. James Turner was chair of the Nominating Committee, and he and Nina Scatton, the Division's AICHE Staff liaison, had the election conducted with an electronic and mail ballot with a record number of votes cast.

The AICHE Spring National Meeting is in San Antonio on March 21-25th, and the highlight of the meeting will be the keynote address by John Hofmeister, Former President of Shell Oil Company and Founder and Chief Executive of Citizens for Affordable Energy, Washington, D.C. Syamal Poddar, Vice-Chair of the Division who arranged for Mr. Hofmeister's participation in the meeting, has scheduled a coffee break prior to his presentation for those who would like to meet our keynote speaker.

The F&PD Awards Dinner is being held on Monday evening of the meeting where we will recognize the winners of the Division

Award, the Service Award and the Harry West Student Award. James Turner, Past-Chair of the Division led the Committee's selection of Henry Z. Kister, a Fluor Corporation senior fellow and director of fractionation technology as 2010 recipient of the prestigious Division Award. The Committee selected Lori McDowell, Pipeline Business Manager at Praxair Inc. as the F&PD Service Award recipient for her many innovative ideas and contributions. Rick Mallinson, past-chair of the Division, led the Student Awards Committee and announced that Wen Fei Chu, Alan Chen and Andrew Liang of UC Berkeley would receive the Harry West Student Paper Award as a group. Lori McDowell is chairing the F&PD Scholarship Program and plans to announce the students selected at the dinner.

Student members are being encouraged to join the Division, and a special effort is made to meet with the students at their functions at Annual Meeting. We would welcome your assistance in spreading the word that AICHE student membership is free to undergraduates. F&PD recognizes the need to have young professions benefit from AICHE activities. There will be a social with Young Professional Advisory Board (YPAB) prior to the Awards Dinner to exchange ideas and develop programs. All are welcome. (6:00 – 7:30pm, the Iron Cactus

Flashpoint is now accepting advertising!

F&PD is also looking for sponsors for events at the Spring and Fall meeting. Events can include coffee breaks, lunches, student receptions, awards and YPAB Events. Contact Lori McDowell at Email: communications@aiche-fpd.org

Flashpoint, The Newsletter of the Fuels and Petrochemicals Division, is published three (3) times per year. It is distributed electronically to our membership and other interested parties (nearly 1,500 people, mostly chemical engineering professionals) in March (prior to the Spring AICHE Meeting), July and October (prior to the Fall AICHE Meeting) and it is also posted on F&PD's website. Contact Lori McDowell if interested.

Our current standard advertising rates are:

Ad Size/# of Issues	Quarter Page	Half Page	Full Page
1	\$75	\$125	\$200
3 (full year)	\$200	\$300	\$500

Fuels and Petrochemicals Programming Update

By Tim Olsen

The Fuels & Petrochemicals Division would like to welcome you to participate at the AIChE 2010 Spring National Meeting in San Antonio this March 21-25 at the Grand Hyatt. We have a great programming schedule with over 230 presentations including two keynote presentations on Monday: John Hofmeister (Founder and Chief Executive Citizens for Affordable Energy and Former President of Shell Oil Company) and Dr. Al Armendariz, Regional Administrator, EPA, Region 6

Session topics include, but are not limited to: energy optimization, advances in fired heater operation and safety, CO₂ and GHG issues including emission reporting, maximizing diesel production, advances in biofuels, advances in separations, process control optimization and MPC, LNG equipment and safety, advances in hydrogen technology, fuels from Fischer-Tropsch hydrocarbons, and advances in aromatics and petrochemicals processing. A complete list of all session topics, presentations, and times can be found online at: <http://aiche.confex.com/aiche/s10/webprogram/>.

Below are the links specifically for FPD tracks:

Topical 7: 13th Topical on Refinery Processing, <http://aiche.confex.com/aiche/s10/webprogram/T7.html>

Topical 6: 10th Topical on Gas Utilization, <http://aiche.confex.com/aiche/s10/webprogram/T6.html>

[ml](#)

Group 16: Advances in Aromatics and Petrochemicals Processing, <http://aiche.confex.com/aiche/s10/webprogram/16.html>

Topical 4: The 22nd Ethylene Producers' Conference, <http://aiche.confex.com/aiche/s10/webprogram/T4.html>

In addition, we welcome those attendees wanting to get involved with the Fuels & Petrochemicals Division to join us on Tuesday, March 23rd, for the 2011 spring planning meeting. The open forum will be ~5pm, immediately following the Energy Optimization session in Bonham D (Grand Hyatt San Antonio). We welcome newcomers and those just wanting to provide input about topics of interest for next year.

Finally, the 2010 Annual Meeting in Salt Lake City will take place November 7-12, 2010. The call for papers is now open; the deadline for submissions is Monday, May 3rd, 11:59pm. The 2010 Annual Meeting features over 700 sessions. Please consider submitting an abstract at <http://aiche.confex.com/aiche/2010/cfp.cgi>.

Spring Meeting Highlights—March 21-25, 2010, Grand Hyatt San Antonio

Energy Leadership Keynote Address (Monday, March 22, 11AM) - [John D. Hofmeister](#), Founder and CEO, Citizens for Affordable Energy

Spring Meeting Keynote Address (Monday, March 22, 1:15pm) - [Dr. Alfredo "Al" Armendariz](#), Regional Administrator, U.S. Environmental Protection Agency, Region 6

Energy and Resource Efficiency Plenary (Tuesday, March 23) - [Amory B. Lovins](#), Cofounder, Chairman, and Chief Scientist, Rocky Mountain Institute, will be announcing the joint AIChE

22nd Ethylene Producers' Conference

13th Topical Conference on Refinery Processing

10th Natural Gas Utilization Conference

Plus, topical conferences on Advanced Fossil Energy Utilization, Clean Energy, Distillation, Greenhouse Gas Management, Sustainability and more.

Special Events

Welcome Reception—Sunday, 6pm

F&PD Coffee Break—Monday, 10:45AM

YPAB Social—Monday, 6PM, Iron Cactus

F&PD Awards Dinner—Monday 7:30PM, Ritas on the River

Ethylene Producers Conference Luncheon—Tuesday, 11:15. Little Rhein Steakhouse

Natural Gas Utilization Luncheon—Wednesday, 12pm, Rio Rio Cantina

Go to the link below to register:

<http://www.aiche.org/Conferences/SpringMeeting/index.aspx>

2010 Harry West Student Paper Award

The winner of the 2010 Harry West Student Paper Award has been named by the Fuels & Petrochemicals Division of the American Institute of Chemical Engineers, the award's sponsors.

The Winners are **Wen Fei Chu, Alan Chen and Andrew Liang**, Department of Chemical Engineering, University of California, Berkeley for the paper: **Lignocellulosic Fuels Conversion of Switchgrass to Ethanol**

The decision was made by a committee of AIChE Fuels & Petrochemicals Division Members and Fellows from industry. The award is named in memory of Dr. Harry West, a former chair of the Division and leader in natural gas technology and safe engineering practice. The award will be presented at the AIChE spring meeting at the Division Awards dinner and consists of \$1000, a plaque and travel expenses to the meeting.

The Call for papers for the 2011 Award will be issued in September 2010, with papers due in February 2011.

Changing Times Present Different Opportunities

Contributed by Bob Dye

Like it or not, 2009 will go down as a year when massive structural change began in the chemicals business. There is a sense of revolution in the air that will cause lasting change for chemical engineers everywhere. Historically, the financial crisis and the global recession that followed it will be seen as accelerators of changes that were already in the wings. The World realized that India and China became the drivers for future economic growth and South America began to rise in industrial prominence.

In short, the last 12 months have been full of challenges. So what is the outlook and where are the opportunities? The manufacture of basic chemicals and plastics will shift eastward. China is going to be the new consumer market-if its economy does not overheat in the short term-replacing the US as the place to sell almost everything and anything. However, the Chinese consumer is unlikely to over-extend through easy borrowing-it is not part of Chinese culture. An opportunity for US businesses: learn about China and its consumer needs.

A shift to making chemical specialties in NA and Europe will happen sooner than previously expected. An export-led petrochemicals recovery on the US Gulf Coast seems unlikely in the face of new Middle Eastern and Latin American capacities. Specialty markets, especially anything relating to food and water supply, and health-and-personal care, will be safe for many US chemical companies. Innovation is another safe haven. In short, North America and Europe will rely on chemical engineers to determine how they can build the new economies of the third millennium. Less dependence of fossil fuels, more alternate technologies, environmental issues, biotechnology breakthroughs and sustainable processes. For chemical engineers, 2009 brought change, with both great opportunities and uncertainty. Change can be unsettling, but the World's problems can only be solved by communities like the one reading this article.

Excerpted from **Chemical Engineering**, December 2009.

Our Chair Ralph Pike has a new book!

Computational Transport Phenomena for Engineering Analyses (Hardcover)

[Richard C. Farmer](#) (Author), [Ralph W. Pike](#) (Author), [Gary C. Cheng](#) (Author), [Yen-Sen Chen](#) (Author)

Product Description With the dramatic advancement of computer technology, engineering students can obtain a firm understanding of complex transport phenomena analysis, which they will certainly encounter as professionals. Bringing

together a wealth of professional and instructional experience, this graduate-level curriculum focuses on the current concepts of fluid mechanics, turbulent flow, multicomponent and multi-phase flow, rather than empiricism and idealized flows. It stresses a problem-solving approach that incorporates a reliance on the Computational Transport Phenomena code (CTP). The text presents one code in-depth so that students are able to better understand the strengths and limitations of the technique, which they will frequently use in their profession.

Meet Soham Trivedi—2009 Scholarship Winner

Soham Trivedi was one of F&PD's 2009 Student Scholarship winners. We thought you'd all like an opportunity to learn a bit more about this impressive young man. Good luck at UVA Soham!

What University will you be attending?

I am currently attending the University of Virginia.

What are you planning to major in?

I am planning to major in some sort of engineering potentially mechanical.

What was your favorite subject in high school?

My favorite subjects in high school were actually both math and history.

Do you have any pets?

No

Favorite book?

Blindness by Jose Saramago

Favorite movie?

The Godfather

Favorite hobby?

Reading/Playing and listening to music.

Who is your hero or who inspired you the most?

My parents

Any advice for other high school students?

There really is no substitute for hard work.

What are you looking forward to the most in college?

Interesting and challenging classes.

Look for more information about the 2010 Scholarship Winners in our Summer Issue!

Notes from the Editor by Lori McDowell

This issue starts my second year as newsletter editor and I hope you are all still enjoying the new electronic format. I do welcome any comments or criticism to make this newsletter more useful, so please don't be shy!

It seems like a lot has happened since the fall issue. The Spring 2010 Meeting is only a few weeks away, and I am very excited about this one. Located in San Antonio for the first time ever, we have some great Keynote Speakers, Topical Conferences and Panel Discussions. Green House Gases will be a key topic at the Spring Meeting, although with the cold winter we have been having in Houston, and all the snow in the Northeast and Mid-Atlantic, I think "Climate Change" is a much better term than "Global Warming". We are also trying to get our younger members more involved in the Spring Meeting (although I find it hard to believe I no longer qualify for that group), so please join us for some YPAB Programming on Monday and at the Social Hour at the Iron cactus on Monday evening, prior to the awards dinner.

The F&PD Scholarship evaluation process is in full swing, and these high school seniors are very impressive. If they are any indication, we will have a great crop of new engineers in 4-5 years. The deadline for the 2011 Scholarship is 1/31/2011, so if you know a worthy junior, let them know.

Another area that both AIChE and F&PD are working on is in meeting our members needs beyond programming. We are considering a mentor program, social and networking events, webinars, and many other ideas. If you have any suggestions, let me know. F&PD member James Turner is chairing this task force.

That's it for now, see you all in San Antonio!

Upcoming Meetings

2010 Spring National Meeting
Grand Hyatt—San Antonio, TX
March 21-25, 2010

2010 Annual Meeting
Salt Lake City, UT
November 7-12, 2010

Hydrocarbon Processings's International Refining
Conference
Sheraton Rome Hotel
June 21-23, 2010

AIChE News

Maria K. Burka is the newly elected President-Elect of AIChE for 2010. Maria will be only the second women to hold the presidency since AIChE's founding in 1908! Way to go Maria-lets hope many women follow in your footsteps!

Maria will succeed 2010 President Hank Kohlbrand, who recently succeeded Scott Fogler.



HF Accidents Lead to Refinery Review Contributed by Bob Dye

A string of refinery accidents involving hydrogen fluoride has led the Chemical Safety & Hazard Investigation Board to begin an examination of that chemical's use at some US Refineries. Half of the 16 accidents CSB is investigation occurred at refineries, CSB Chairman, John S. Breland said. "That is way too many," he said, noting that several accidents involved HF. Speaking at a press conference in Corpus Christi, TX, Breland explained that one of those accidents has resulted in a board order that the company immediately review the safety of its HF units.

About one third of US Refineries use HF as an alkylation catalyst to make high-octane fuels. HF becomes hydrofluoric acid when exposed to moisture and is a contact poison that burns skin, tissue, and eyes, and can cause death.

At one incident, a blocked control valve led to an explosion and fire that injured two workers and burned for two days, exhausting the refinery safety system. At least 4000 lb of HF migrated off-site. Fortunately, it drifted over an unpopulated channel.

Taken from C&E News, December 14, 2009

AIChE Spring 2010 Meeting: 10th Topical Conference on Gas Utilization

Utilization of gas continues to gain more attention because of higher oil price. The use of LNG is gaining popularity for power generation, industrial basic materials and household usage. Governments and companies are looking for more opportunities to convert the alternative carbonaceous feed-stocks into valuable products such as fuels and chemicals. This year's program will cover the following areas:

Coal, Biomass and Natural Gas to Liquids – fundamentals and processes for the conversion of coal, natural gas, biomass and other carbon-bearing materials to fuels and chemicals

Kinetics, Design and Modeling of Fischer-Tropsch Catalysts and Reactions – advances in catalyst development and reaction kinetics, including the design, characterization, and modeling of Fischer Tropsch synthesis catalysts and reactions for gas-to-liquids (GTL), coal-to-liquids (CTL), and biomass-to-liquids (BTL) applications

Production of Fuels and Chemicals from Fischer-Tropsch Hydrocarbons – advances in the upgrading processes and technologies to produce fuels and chemicals from Fischer-Tropsch products

CO₂ Conversion – conversion of CO₂ to valuable products by catalytic, electrochemical/electrocatalytic, photochemical/photocatalytic, enzymatic/biochemical and plasma processes

Gas Separation Technologies – research presentations on novel processing techniques, process chemistry, reactor development, catalyst development, and catalyst deactivation for gas conversion and gas separations

Advancements in Hydrogen Technologies – "The Hydrogen Chain" including hydrogen production, purification and storage. It will primarily discuss technologies that are new, alternative, or under development

Greenhouse Gases Sequestration – advances in the sequestration technology for greenhouse gases such as CO₂ and CH₄

LNG Equipment – LNG equipment developments in pumps, drivers and compressors, heat exchangers, liquid expanders

LNG Regasification – LNG receiving terminals technology, process, regasification, and liquid extraction advancements

LNG Safety – LNG safety developments in baseload plants, receiving terminals, ships and offshore facilities

LNG Technology – baseload LNG plants technology development in liquefaction, process, and commercial activities

LNG Simulation: simulation of LNG plants to assist design and operation of LNG plants

LNG Storage: large LNG storage tanks and other technologies for storing LNG

Associated Event: Gas Utilization Luncheon, Wednesday March 24, 2010, 12-1:30 pm \$40 Rio Rio Cantina (El Presidente Room); 421 E. Commerce Street, Phone: 210-226-8462

Keynote: Perspectives on Early Developments of Ocean Transport of LNG by Professor Rick Mallinson

Dr. Richard Mallinson, C.M. Sliepceвич Professor of Chemical Engineering at the University of Oklahoma. Dr. Mallinson joined the faculty in 1983 after earning his Master's and Doctorate degrees in chemical engineering at Purdue University. He has undergraduate degrees in both chemical and biomedical engineering from Tulane University. He was Director of the Institute for Gas Utilization Technologies of the Sarkeys Energy Center from the mid 1990s until 2003. He was integral in the development of a curriculum for a new interdisciplinary Masters degree program in Natural Gas Engineering. Dr. Mallinson is a Fellow of AIChE, is a member of the ACS, and Sigma Xi. He has served as Secretary, Vice Chairs, Chair and Past Chair of the Fuels and Petrochemicals Division of AIChE as well as the programming co-chair for gas. He has held a five year Kerr-McGee Distinguished Lectureship in the OU College of Engineering.



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