

# Flashpoint

Volume 22, Issue 2

Summer 2010

#### The Newsletter of AIChE's Fuels and **Petrochemicals** Division

## The Chair's Corner By Syamal Poddar

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**F&PD** is 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

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It is amazing how time flies! We just took office towards the end of March during our Spring National Meeting in San Antonio, and it is already summer. It is a tradition that the Chair of the division writes a message under the heading of "Chair's Corner" in each issue of our newsletter. Being your elected Chair for the division this year, I have the opportunity and privilege to send you this message. I must tell you that I find myself very fortunate to have an outstanding team of volunteers to work with me as this year's Executive Committee. Our past committee, under the leadership of our past Chair, Ralph Pike, has done an outstanding job in advancing our divisional activities and contributions towards serving our members better. Our elected secretary for this year, Rick Mallinson, because of his other professional commitments, resigned and, on an ad hoc basis, we appointed Laura Leonard to serve the committee as the secretary for this year. I would like to not only welcome her as a member of our Executive Committee, but also to thank her for her immediate contribution. Our AIChE staff liaison, Nina Scatton, has taken a position at Columbia University and she has been replaced by June Lee. We would 🔍 🔍 🔍 🔍 🔍 🔍 🔍 🔍 🔍 like to recognize Nina for her responsivee ness to our divisional needs, and we welcome June to be our point of contact for at AIChE. Our key note speaker at the Spring National Meeting, John Hofmeister, gave a very thought provoking and eloquent speech on the status and policy issues of energy on the national and global level. We may or may not agree with all he said, but his speech was very passionate and delivered with a lot of conviction. I am sure most of us will agree that the per capita energy demand 🔍 is going to increase with technological 🔍 advancements influencing our day-to-day lives. This increase in demand will not

> only be affecting advanced countries like the US, but every part of the globe. There

fore the questions that crop up are: How are we going to meet this ever increasing energy demand? How do we create an environmentally friendly and sustainable scenario to meet this demand? Alternative sources are going to play an important role, no doubt, but in the foreseeable future the contribution from alternative sources are not expected to be significant. In this context I would like to inform you that at the Institute's national level an initiative, Center for Energy Initiative (CEI) is about to roll out. I would like to see that some of us take an active role in this important initiative.

I would like to conclude my message by highlighting the specific objectives of our new Executive committee. These are: 1) enhance the quality of technical papers and not necessarily increase the number; 2) welcome participation of young professionals in an active role in technical programming as well as participation in our committee meetings; 3) enhance inter- and intra-divisional communication to minimize duplication of voluntary effort and create synergy; 4) create more alignment of our divisional effort with the objective of our Institute at the national level; and last but not the least 5) continue to attract more members to our Institute and to our division by persistently working on improving our value proposition to our professional colleagues. I would like to encourage all our executive committee members to get involved in charting our path to fulfill our objectives. My open invitation to all our members: please help your division's executive team to better serve you. Do not hesitate to contact me or any of the executive committee members with any thoughts and ideas to improve our activities and performance. I am a strong believer of continuous improvement and always eager to hear from you.

Have an enjoyable summer. I look forward to seeing some of you at this year's annual meeting in Salt Lake City. Until then stay tuned. Once again, thank you for giving me the opportunity to serve you.

## Fuels and Petrochemicals Programming Update By Tim Olsen

The Fuels & Petrochemicals Division (FPD) is looking forward to the upcoming Annual Meeting at the Salt Palace Convention Center in Salt Lake City, UT from November 7<sup>th</sup> through the 12<sup>th</sup>, 2010. In addition, plan for the 2011 Spring Meeting at the Hyatt Regency Chicago in Chicago, IL from March 13<sup>th</sup> through the 17<sup>th</sup>, 2011. Please join us at these events to learn more about current and future challenges along with the ideas and solutions that impact and shape the fuels and petrochemicals industries.

#### Spring 2010 Meeting in San Antonio

The FPD hosted many great technical sessions last March. Several people commented back to me that they learned valuable information that they could take back to their plant for better operation. In addition to the technical sessions, I found the Energy Leadership Keynote Address by John D. Hofmeister (Founder and CEO, Citizens for Affordable Energy) to be very good. The FPD also hosted a special session for Young Professionals as a pilot to get more input and participation from the younger generation chemical engineers. The young professionals will continue their participation at the 2011 spring meeting.

The FPD had 186 technical session presentations within three main tracks – Topical 7 on Refinery Processing, Topical 6 on Gas Utilization, and Group 16 on Aromatics and Petrochemicals. You can find most of the papers posted in the <u>FPD Members</u> only section of our website. Not a member? The membership is only \$10 more when you register as an AIChE member. Recommend FPD membership to your colleagues as well.

The 2010 FPD Best Paper Award went to the paper titled, "Improved Energy Efficiency in CDU through Fouling Control" by Jimmy D. Kumana, Dr. Graham T. Polley, Simon J. Pugh and Dr. Edward M. Ishiyama. Congratulations to the winners!

#### <u>Annual 2010 Meeting, November 7-12 in</u> <u>Salt Lake City, UT</u>

The sessions are driven more from an academic focus, so the presentation material includes nontraditional refining. I would encourage people to have an open mind and learn more about how these technologies are advancing and how they will integrate with traditional fuels refining.

The preliminary FPD programming can be found online at <u>http://aiche.confex.com/</u>

#### Spring 2011 Meeting, March 13-17 in Chicago

The "Call for Papers" is now open (<u>http://aiche.confex.com/aiche/</u><u>s11/cfp.cgi</u>) and will close October 22<sup>nd</sup> (earlier than in past years).

The FPD programming committee encourages you to participate as a presenter for one of our session tracks (web links listed below). We are anticipating a larger Midwest regional audience with the Chicago location, thus more peers to interact with during the event. Even if you do not plan to be a presenter, we hope you attend to learn more about industry trends, challenges, ideas, and solutions. I look forward to seeing you soon.

Please consider submitting an abstract within the FPD programming by October 22<sup>nd</sup>.

Topical 7 on Refinery Processing:

http://aiche.confex.com/aiche/s11/webprogrampreliminary/T7.html

#### **Call for Nominations**

Nominations are open for the four F&PD awards that are given at the Spring National Meeting. Details about these awards can be found at: <u>http://www.aiche.org/DivisionsForums/ViewAll/</u> <u>FandP.aspx</u> Fuels & Petrochemicals Division Awards. This award recognizes individuals who have made substantial technological contributions to the advancement of the fuels and petrochemicals industries. The award recipient is the speaker at the Division's award dinner, held at the AIChE Spring National Meeting. Fuels & Petrochemicals Distinguished Service Award. This award recognizes an individual's outstanding service to the Fuels and Petrochemicals Division. The candidate must have participated extensively in a variety of division activities demonstrating leadership, and have served the division a minimum of five years. Send nominations for both of the above to the F&PDs Past Chair , pastchair@aichefpd.org .

#### Harry West Student Paper Award

This Award is presented to the undergraduate student member of AIChE and F&PD who submits the best paper on any subject relevant to fuels, petrochemicals or safety. Papers are not restricted to research topics and may include design case studies and reviews. All papers must describe the student's own original contribution but may be part of a larger project to which the submitter contributed. Papers should be submitted to the awards committee, c/o Professor Mallinson, <u>mal-linson@ou.edu</u>. Deadline for the above awards is November 1, 2010. **F&PD Scholarship** 

F&PD awards two- \$1,000 one-time Scholarships to exemplary high school seniors. F&PD is committed to introducing high school students to careers in Fuels & Petrochemicals through its programs, helping to fuel the industry's need for top talent. Eligible applicants are graduating high school seniors with exemplary academic records and demonstrated leadership potential. Eligible applicants must plan to attend an accredited four year university in the fall and major in engineering or science. Deadline is January 31, 2011. Send the application, along with all required documentation to <u>communications@aiche-fpd.org</u>.

### 2010 Regional Process Technology Conference in Galveston

Hundreds of chemical engineers and other professionals in the chemical processing and petrochemical industries are expected to convene at the Moody Gardens Hotel in Galveston, TX, Oct. 7–8, when AIChE and its South Texas Local Section present the Institute's 2nd Regional Process Technology Conference. The conference will build on the success of the inaugural regional conference, which attracted more than 400 attendees from the Texas Gulf Coast region and beyond.

The conference location on Galveston Bay is a boon to engineers and technologists in the region. Many companies have cut travel budgets and professional development funding due to the current state of the economy. Against this backdrop, one goal of the conference organizers is to provide an easily accessible, high-quality technical program for chemical engineers in the Greater Houston area and across the Gulf States — home to the largest concentration of petroleum refining, chemical processing, engineering and technology firms in the U.S.

This year's technical program will cover an array of topics relevant to industries in the area, with sessions devoted to:

• Developments in the field of process safety — an issue of utmost importance to the chemical industry. The session will cover practical applications of process safety, as well as the history and status of the U.S. Occupational Safety and Health Administration's (OSHA) compliance programs. Additional talks scheduled for this session include Process Safety for the Smaller Company; A Process Engineering View of Safety Automation; and Safety Culture: A Conduct of Operations and Operational Discipline System.

• Opportunities and challenges in the refining industry — Experts in the field will discuss the current status and future trends in refining technology advancements, including catalysis and processing schemes to handle heavy and sour crudes, novel ways to optimize refinery configurations, and operational strategies to address environmental challenges — including CO2 emissions and improvements in overall energy efficiency. The impact of carbon cap-and-trade legislation on energy conservation economics will also be considered.

• Catalysis and reaction engineering — In this session, industry experts will discuss recent advances in catalyst development and reactor design. The speakers will also cover such topics as catalytic treatment of refinery off-gas and new developments in tail-end selective hydrogenation.

Other key subjects that will be covered in the conference include: advances in petrochemical technologies; distillation and separation; thermodynamics; process simulation; energy efficiency; and environmental issues impacting the industry. Attendees can receive PDH credits for their participation in the technical sessions.

Conference attendees can also benefit from an exhibition featuring service and equipment vendors. The expo will offer excellent opportunities for providers and users of equipment and services to meet and develop mutually beneficial relationships. Companies can further raise their professional profiles by becoming a Process Technology Conference sponsor — with a variety of benefits available for different levels of sponsorship.

Registration fees for the conference have been kept low: AIChE members who register before Sept. 3 pay \$125 for one-day attendance, or \$175 for the full two–day conference. Registration and complete program information for the Regional Process Technology Conference, as well opportunities for exhibitors and sponsors, are available at www.aiche. org/Conferences/2010Regional/ Galveston.aspx.

#### "Galveston, Oh Galveston"

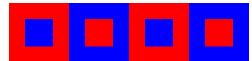
An added bonus of the Regional Process Technology Conference is the city of Galveston itself — a destination with many historic and cultural attributes and outdoor activities. Moody Gardens offers attractions of its own, and is dominated by three steel and glass pyramids: the Aquarium Pyramid, housing one of the world's largest collections of marine life; the Rainforest Pyramid, containing tropical animals and plants; and the Discovery Pyramid, which features science exhibits and activities. Adjacent to Moody Gardens is Palm Beach — a sandscape with a freshwater lagoon, a golf course, high-tech simulation thrill rides, and a waterpark. Nearby, Galveston's Historic District, "The Strand," offers an eclectic variety of shops, restaurants, pubs and art galleries.

#### Flashpoint is now accepting advertising!

. *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



F&PD is now on the professional networking website, LinkedIn. To connect with other professionals and expand your professional network, please connect with us on LinkedIn at

http://www.linkedin.com/in/aichefpd.

#### Arctic Technology Conference

There's still time to submit an abstract for the OTC's new Arctic Technology Conference. The abstracts deadline has been extended through 1 August 2010. This dynamic new event, 7-9 February 2011 at the George R. Brown Convention Center in Houston, Texas, will address the cutting-edge technologies and innovative practices needed for exploration and production in the Arctic. The OTC model, which brings together nearly a dozen professional societies and associations to create a comprehensive technical conference, will serve as the basis for the new event.

The program committee is now accepting abstracts in the following

- themes:
- Resources
- Exploration Drilling
- Production Drilling, Facilities and Export
- Physical Environment
- Logistics
- Regulatory, Environment
- Other Issues, Mining

Visit the abstracts website for guidelines and to submit your paperthrough 1 August 2010. (http://www.arctictechnologyconference.org/index.cfm)

#### About ATC

The Houston-based Offshore Technology Conference is adding a new conference to its portfolio of events. The OTC model, which bringstogether leading professional societies and associations to create a comprehensive technical conference, will serve as the basisfor the new event. OTC's new Arctic Technology Conference is managed by the American Association of Petroleum Geologists.

> Upcoming Meetings 2010 Regional Meeting Moody Gardens Hotel—Galveston, TX October 7-8, 2010

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

2011 Spring Meeting Conference Chicago, IL March 13-17, 2011

#### Notes from the Editor by Lori McDowell

Welcome to the Summer issue of Flashpoint! I hope you are all busy planning some great vacations and summer activities with your families! At this time of year it is often difficult to focus on work, with the kids out of school, concerns about hurricanes and tornados, and the temperatures upwards of 90degress. Even though most of us don't get summers off, the summer still feels like we should be on vacation!

As a child, summer was not only a time for play, but it marked a transition, with the end of one year, and the start of the new school year. In the working world, we don't always get that clear transition, but sometimes we need to stop and make an artificial one.

With this issue of Flashpoint, lets all take a few minutes to stop and think about what we would do if we could start a new school year! Make those career changes you have been thinking about for awhile. Re-evaluate your goals and re-energize yourself. Clean house of all the unwanted bad habits. I recently made a job transition and had a chance to do all of those things, and I have never been happier in my career! And regarding AIChE and F&PD, we ask your help in getting a fresh start as well. What would you like to see from your organization? How could this newsletter or the webpage give you more benefits? What should we do to start a "new year" and re-energize. An organization is only as good as its members, so we need your help to improve! Give us your opinions and advice. Suggestions can be sent to info@aichefpd,org. Have a great summer and stay cool!

#### Call for Papers—New Projects, Expansion, Revamps, Debottlenecking, and Reliability

If you have any ideas or thoughts to share about debottlenecking options, revamp opportunities for refinery optimization or improving plant reliability, our session on

"<u>New Projects, Expansion, Revamps, Debottlenecking, and Reliability"</u> will be a perfect platform. We are now accepting papers for this session for the Spring 2011 Meeting in Chicago. You can visit our website at

http://aiche.confex.com/aiche/s11/webprogrampreliminary/Session1 5182.html for more information. The deadline for submission is October 22, 2010.



#### 2010 F&PD Scholarship Winners

F&PDs 2010 Scholarship Recipients, Ann Hewitt and Zosh Zeidman were quite impressive, as were all the young people that submitted applications. In addition to Ann and Josh, 2010 Finalists were: David Turner, Stacie Philips, Abhinav Mohan, Pratiksha Thaker, and John Patrick. Congratulations to all of them and best of luck in college. We look forward to following their college careers and welcoming them into the engineering community. They will hopefully become valuable F&PD Student Members next year.

#### Meet Ann Hewitt

#### What University will you be attending?

University of Pennsylvania

What are you planning to major in?

Chemical Engineering

What was your favorite subject in high school? Organic Chemistry

Do you have any pets?

Yes, a golden retriever named Raider and a tropical aquarium.

#### **Favorite book?**

Atlas Shrugged – Ayn Rand

#### **Favorite movie?**

Ferris Bueller's Day Off

#### **Favorite hobby?**

Scuba diving

#### Who is your hero or who inspired you the most?

Mr. Turk, my physics teacher and Dr. Bellows, my English teacher

#### Any advice for other high school students?

It's easy to work hard when you have a passion for what you're doing.

## What are you looking forward to the most in college?

Meeting lots of new people and taking interesting classes.

#### Anything else you'd like to tell us about yourself?

I can't wait to get to college!

#### Meet Josh Zeidman

#### What University will you be attending?

I will be attending MIT this fall.

What are you planning to major in?

Currently I intend to major in chemical engineering.

#### What was your favorite subject in high school?

My favorite subject in high school would be math, specifically calculus followed closely by science, specifically chemistry.

#### Do you have any pets?

I don't have any pets.

#### **Favorite book?**

It often varies, but currently I would have to say Dostoevsky's *Crime and Punishment*.

#### Favorite movie?

My favorite movie is *Gladiator*.

#### **Favorite hobby?**

My favorite hobby/activity is running. I compete on my school's cross country and track teams, also serving as a captain, but also just enjoy running almost every day.

#### Who is your hero or who inspired you the most?

Besides my parents, the person who has inspired me the most in high school has been my coach and English teacher Mr. Dan Horyn. He got me interested in running and has encouraged, coached, and guided me throughout my four years of high school. I have tried to model my work ethic and leadership after his and he has provided me with some of the greatest and yet most rewarding physical and intellectual challenges of my high school career.

#### Any advice for other high school students?

I would advise other high school students to take advantage of high school (or even life) by finding things they enjoy doing or have passion for. I have been lucky enough to develop passions for many things including academics, athletics, and music, but that doesn't have to be the case as long as one can find at least one subject he enjoys immersing himself in. It is passion and excitement for something that leads to the greatest and most rewarding success. Therefore I advise students to be sure they strive not just for success, but also to find a class, or activity, or hobby that they truly enjoy.

#### What are you looking forward to the most in college?

In college I am most looking forward to getting to be surrounded by a group of similarly motivated and hard working students and getting to collaborate on engineering based problems with real-world implications.







Interested in improving your facilities operations? Interested in reducing costs or improving efficiency? Are environmental emissions a concern? Would increased productivity or throughput be of value? Can Industrial gas applications work for me? *If you answered yes to any of these questions, then you need to attend this seminar!* 

Praxair's Industrial Gas Application Seminar

When: September 15<sup>th</sup>, 2010 – 8<sup>AM</sup>-noon, Followed by Astros vs. Milwaukee Brewers Game at 1:05

Where: Union Station at Minute Maid Park

Cost: No charge

#### Seminar Topics

- Combustion for process heaters, burners and incinerators
- Oxygen applications for steel, non-ferrous, glass and cement industries
- Water and wastewater treatment
- Refinery applications
- Leak detection and total gas management
- VOC recovery and flue gas controls
- Food freezing...

And Much More

Click on the link below to fill out a survey and apply to attend the seminar. http://www.surveymonkey.com/s/PraxairTechnicalSeminar

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#### AIChE Spring 2011 Meeting: Topical Conference on Refinery Processing

The Fuels & Petrochemicals Division is soliciting presenters to submit an abstract for Topical 7 on Refinery Processing for the 2011 AIChE National Spring Meeting. The call for papers is open now and closes October 22<sup>nd</sup>; you can submit your abstract online at <u>http://aiche.confex.com/aiche/s11/cfp.cgi</u>.

Topical 7 has 20 sessions available to submit an abstract. The full list of sessions and descriptions can be found online at <u>http://aiche.confex.com/aiche/s11/webprogrampreliminary/T7.html</u>. Sessions include the refining core topics such as advances in FCC, hydroprocessing, diesel production, naphtha technologies, bottom of the barrel processing, fouling, and sulfur management. In addition, there will be three tutorials available to submit abstracts on heavy oil processing, fouling and design of crude pre-heat trains, and process control. Other topics of interest include CO<sub>2</sub> reduction, energy conservation, sustainability, environment and water solutions, biofuels, hydrogen management, projects, simulation, and advanced control. Please submit an abstract for consideration by the October 22<sup>nd</sup> deadline.

#### AIChE Spring 2011 Meeting: 11th 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 :

Coal, Biomass and Natural Gas to Liquids – Focus on the 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 – Focus on advances in catalyst development and reaction kinetics, including all aspects of 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 – Review the advances in the upgrading processes and technologies to produce fuels and chemicals from Fischer-Tropsch products.

Gasification Technologies/Gas Clean-up – Focus on advances in gasification technologies and gas clean-up.

Challenges for Future Gas supply &New Gas Projects – Review the challenges for gas supply in the world and new gas projects, and cover the following points: challenges on gas supply worldwide and in oil exporting countries; fluctuation in associated gas production with oil production fluctuation; new gas projects and effects of composition changes from wells; finding enough gasses to meet the electricity and desalination needs; finding enough gasses to meet the expanding petrochemical needs

Syngas to Ammonia – Review the advances in the technologies to produce ammonia from syngas.

CO<sub>2</sub> Conversion – Focus on the conversion of CO<sub>2</sub> to valuable products by catalytic, electrochemical/electrocatalytic, photochemical/photocatalytic, enzymatic/biochemical and plasma processes.

Gas Separation Technologies – Feature 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 – Cover all aspects of "The Hydrogen Chain" including hydrogen production, purification and storage. It will primarily discuss technologies that are new, alternative, or under development.

Greenhouse Gases Sequestration – Review advances in the sequestration technology for greenhouse gases.

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

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

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

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

Topical Conference Proceedings: CDs will be available on the registration form or at the registration site at the Conference

Associated Event: Gas Utilization Luncheon

## **AIChE**<sup>®</sup>

Fuels and Petrochemicals Division 2010-2011 Executive Committee

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