

# AIChE Process Development Division

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Spring 2012



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## Message from the Chair

Welcome to the Spring 2012 edition of the AIChE Process Development Division (PDD) Newsletter. I feel privileged to write to you as this my first issue as the PDD Chair.

First, I want to thank Raymond Rooks of Praxair on behalf of the Division for his services as Division Chair in 2010 and 2011. Ray will continue to provide helpful guidance during the next two years by serving as Past-Chair. Second, I want to congratulate John Peragine of Bristol-Myers Squibb for winning the Division election to serve as Chair-Elect. John had been Division Chair from 2006-2007, and will take over as Division Chair for 2014-2015. I also wish to congratulate David Edwards of Zeton for winning the Division election to serve as Treasurer. David has been our Treasurer for the past four years, and we are delighted that he will continue looking after our finances.

Finally, I wish to congratulate Qiang Xu, Kiran Gupte, Jonathan Worstell, and Ken Cox, who were elected at the Minneapolis meeting to be new Area Chairs-Elect. This allowed the prior Chairs-Elect to take over as new Area Chairs. Following the Area elections, Tom Enright, Oliver Orrell, David Reeder, Derek Griffin, and Mosha Zhao were chosen as Area Coordinators, so each Area now has a new Chair, Chair-Elect, and Area Coordinator. More recently, Yogendra Shastri has needed to step down as the 12G Area Chair, so Ken Cox will assume that position while we seek an interim 12G Area Chair-Elect. Details of the Area Leadership can be found on page 11 of this newsletter.

At the Minneapolis meeting, the leadership team also agreed to combine 12E (Micro process Engineering) and 12F (Process Intensification) into one area (12E/F) to strengthen the area leadership. This is a natural fit as micro process engineering can be considered a subset of process intensification. So by all means remember micro process engineering and microreactors when you see sessions for process intensification! Zhijun Jia of Chart Industries (who had been Chair-Elect for 12F) and Lawrence Weatherley of the University of Kansas (who had been Area Chair for 12E) will be the Area Chair and Chair-Elect for the combined Area, respectively.

(Continued on p.2)

## DID YOU KNOW?

1. Houston, Texas, at approximately 596 square miles, is the fourth largest city in America.
2. "Houston" was the first word Astronaut Neil Armstrong spoke when he landed on the moon.
3. Houston is U.S. energy headquarters with more than 5,000 energy-related businesses.
4. The Port of Houston, a \$15-billion petrochemical complex, ranks number one in the nation in foreign tonnage and second in total tonnage.
5. Houston is home to the Texas Medical Center, the largest medical center in the world, with a local economic impact of \$10 billion. More than 52,000 people work within its facilities, which encompass 21 million square feet. Altogether 4.8 million patients visit them each year.
6. Houstonians eat out more than residents of any other city. While here you can choose to indulge in one of the more than 11,000 restaurants ranging from award-winning and upscale to memorable deli shops.
7. Houston boasts more than 40 colleges, university and institutions - offering higher education options to suit all interests.

## Message from the Chair (Cont.)

I am also pleased to announce that two key Division leadership positions have recently been filled. Ahmed Youssef of Sabic is now our Newsletter Editor, and Santiago Fauscher of Xerox is our new Assistant Programming Chair, replacing Joe Powell. For those not aware, Joe not only did a fantastic job in keeping our programming organized as we greatly increased our footprint at both Fall and Spring conferences, but Joe also trained our current Programming Chair, Bob Huss. We will no doubt be making additional use of Joe in the future.

Our next Division event will be the AIChE Spring meeting from April 1-5, 2012 at the Hilton Americas-Houston and the George Brown Convention Center in Houston, TX. The Division has arranged for sessions that will be of immense value to our members. A complete listing can be found on pp. 6-8 of this newsletter.

We hope that you can join us at the Division's Programming Meeting (formerly referred to as the Areas meeting) on Monday, April 2nd. As the Division has grown we have been forced to become more efficient at arranging for future sessions. Our current procedure is to seek ideas for future sessions from our members by email, well in advance of the meeting, and use the Programming Meeting to finalize ideas and chose session chairs and co-chairs. We have also accepted fresh ideas for sessions at the Programming Meeting, provided the person who suggested the idea was willing to serve as session chair! This has worked so well that we will continue with this approach for the foreseeable future.

The Division dinner Process Development Division Dinner will be on Tuesday, April 3<sup>rd</sup> at Guadalajara Del Centro, just a short walk away from the Convention Center. Tickets can be obtained by advance registration through AIChE. Dinner starts at 7:00 pm, but why not arrive at 6:00 pm to meet your colleagues for a self-pay Happy Hour?

A key event for this summer is the next Process Development Symposium (PDS), to be held in King of Prussia, PA (Greater Philadelphia area), from June 6<sup>th</sup> to 8<sup>th</sup>. The overall theme will be "From Concept to Commercialization, Plan for Success from the Beginning." Details on the session themes can be found on page 4 of this newsletter.

This year's Fall Annual Meeting will be held in Pittsburgh, PA the week of October 28<sup>th</sup>. The call for papers is still open. Please submit papers, share your knowledge, and connect with your peers.

Thanks to all for your interest and support of the Division. While I cannot personally be in Houston, I wish you all well and hope to see you later in the year. I would also be pleased to receive an e-mail with your thoughts or suggestions.

Best regards,

**Michael Hill (mhill@columbia.edu)**

**Process Development Division Chair**

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



### AWARDS RECIPIENTS AT FALL 2011 ANNUAL MEETING



**Raymond Rooks**



**Miguel Bagajewicz**

Excellence in Process Development Research (Pfizer) Award



**Chuanyu Zhao**

Student Paper Award (Lilly)



Interested in expanding your network in the field of Process Development? Join our LinkedIn group! Find us here:

<http://linkedin.com/groups?gid=4018623>

## 2012 AIChE Annual Meeting – Pittsburgh

### Call for Papers

The call for papers is open from now through May 2 for 2012 Annual Meeting in Pittsburgh. The Process Development Division is proposing to tentatively sponsor or co-sponsor 35 sessions.

Links to other PDD programming is found via:

- <http://aiche.confex.com/aiche/2012/webprogrampreliminary/12.html>

General meeting information is available from:

- <http://www.aiche.org/Conferences/AnnualMeeting/index.aspx>
- Note that The Executive Board of the Program Committee has set a rule limiting any individual to presenting no more than three oral presentations (excluding invited talks and non-presenting co-authorship, and excluding poster presentations). Further details can be found at:
  - <http://www.aiche.org/Conferences/Contributors/index.aspx>

Highlights of the meeting will include:

- **2012 Annual Meeting Plenary Featuring:**
  - [Charles McConnell](#), Assistant Secretary for Fossil Energy (Acting), U.S. Department of Energy (DOE)
  - [David Porges](#), Chief Executive Officer, EQT Corporation
  - [Greg Babe](#), Chief Executive Officer, Bayer Corporation
    - [Chemistry and Energy: Fortifying Our Historic Links](#)
  - [Jim Ferland](#), President and Chief Executive Officer, Westinghouse

Contact [2012annual@aiche.org](mailto:2012annual@aiche.org) for more details.

## Announcements (Continued)

### Process Development – Planned Sessions for Fall 2012 - Pittsburgh

#### 12A

Best Practice in Senior Design Courses by Adjuncts  
Bioprocessing of Lignocellulosic Biomass to Biofuels and Value-Added Bioproducts  
Crystallization Process Development  
Process and Properties in Polymers  
Product and Process Development for Sustainability  
Solar Energy & Chemicals R&D  
Applications of Process Synthesis  
Managing Creativity for Internal and Open Innovation

#### 12B

Best Practices In Pilot Plants  
Pharmaceutical Process Development & Pilot Plants  
Pilot Plants: Global Team Interactions  
Piloting Innovations in Sustainability  
Process Scale-up Techniques

#### 12C/D

Challenges and Best Practices in Technology Commercialization  
Process Robustness in Pharmaceutical Manufacturing  
Technology Transfer - Successful University/Industry Ecosystems

#### 12E/F

Energy Efficiency by Process Intensification  
Microreactors and Chemical Engineering Education  
Process Intensification by Process Integration  
Process Intensification Plenary Session  
Process Design for Process Intensification  
Advances in Process Intensification

#### 12G

Improved Fracturing Fluids  
Process Development Considerations During Product Design  
Tools for Chemical Product Design  
Energy Efficiency by Process Intensification

## Announcements (Continued)

### PROCESS DEVELOPMENT SYMPOSIUM

#### *From Concept to Commercialization: Plan for Success from the Beginning*

**WHEN:** June 5-7, 2012

**WHERE:** HYATT house, King of Prussia, PA

**WEBSITE:** <http://processdevelopmentsymposium.aiche.org/> -- There is still need for additional speakers in the sessions on Multi-Functional Teams and Planning Project 'Handoffs'. Please contact Joe Cramer (josec@aiche.org) or John Peragine (john.peragine@bms.com), respectively, for additional information on these two sessions.

**WHO should attend:** Those who work in areas of product and process development are expected to learn new and useful approaches for meeting the challenges of project success. Technical issues such as scale-up problems and non-technical issues such as effective communication with managers and other functions will be addressed.

**Keynote Speaker:** Mauricio Futran, Professor and Chair of Chemical and Biochemical Engineering at Rutgers University

#### **TOPICS covered include:**

##### **Innovation: Feeding the Funnel**

Idea sources, spinoff technology and entrepreneurial development, project prioritization and derisking with economics

##### **Robust Process and Product Design: Accommodating Uncertainty**

Designing for multiple process options, designing workarounds for process problems, considering the effects of abnormal operation, considering the responses to a failed operation after startup, etc.

##### **Scale-up Issues: Examples and Effective Solutions**

Unit operations that are known to be difficult to scale, how small equipment can 'fool you', how raw materials and utility are "different" at large scale, etc.

##### **Inherently Safer Processes**

Potential raw material substitutions, the impact of process location, the impact of operating conditions, the impact of scale-up, etc.

##### **Multi-Functional Teams: Collecting Experiences to Maximize Insights**

Combining chemists and chemical engineers, good and bad practices as seen by capital project managers, communication with commercial partners on cost and timing, etc.

##### **Planning Project 'Handoffs'**

Managing an off-site transfer (e.g. 3rd party manufacturing), understanding the perspective of capital project teams and production plants, etc.

## Announcements (continued)

### PDD12 Dinner Tuesday 3 April 2012 Houston

The Process Development dinner (Ticketed event TE08) will be held at Guadalajara Del Centro, 1201 San Jacinto, Houston, TX (713.650.0101), less than 5 blocks from the Hilton and G.R. Brown convention center. Dinner starts at 7 pm with self-pay happy hour 6 pm. Dinner menu will be open, and includes a drink and dessert. Come and enjoy dinner and networking at one of Houston's finer Mexican restaurants. Contact [Joe.Powell@Shell.com](mailto:Joe.Powell@Shell.com) for details.



<http://www.guad.com/downtown>

### Houston Topicals at a Glance

- Advanced Fossil Energy Utilization
- Advances in Sustainable Energy
- The 24th Ethylene Producers' Conference
- Emerging Technologies in Clean Energy for the Twenty-First Century
- 12th Topical Conference on Gas Utilization
- 15th Topical Conference on Refinery Processing
- Distillation Topical Conference

**NEW FOR 2012:** Engineering and Flow Assurance

### PDD Meetings

**Sun Apr 1 – Process Development Leadership Meeting – 5-6 pm, Room 329, Hilton of the Americas**

**Mon Apr 2 – Process Development Programming Meeting – 5:30-7pm, Room 335A/B, Hilton of the Americas**

### Houston Highlights

The AIChE Spring Meeting is the year's key technical conference for practicing chemical engineers.

- **Spring Meeting Keynote Address** (Monday, April 2, 8:30am-9:15am) - [Michael J. Dolan](#), Senior Vice President, Exxon Mobil Corporation, explores the intersection of Process Safety and Corporate Responsibility; *Breakfast will be available at no charge from 7:30-8:30am*
- **Panel Discussion on the Ethylene Plant Transformation of the Petrochemical Industry** (Monday, April 2, 9:45am-12:35pm) - Executives from Chevron-Phillips, Dow, Sibur and Braskem explore the impact of shale gas on the market place.
- **Fuels and Petrochemicals Division Welcome Session** (Monday, April 2, 9:45am-11:30am) - Joseph Powell, Chief Scientist at Shell will speak about Future Fuels and Chemicals: Grand Challenges and Opportunities.
- **Industrial Leadership Keynote Luncheon** (Tuesday, April 3, 12:00pm-1:30pm) - Frank van Lier, Operations Manager at Lubrizol will give his Musings on Management.
- **Gas Utilization Topical Conference Luncheon Keynote** (Wednesday, April 4, 12:00pm-1:30pm) - Yoshitsugu Kikkawa, LNG Project Technical Advisor, Chiyoda Corporation, discusses the contributions of LNG as an environmentally friendly energy in Japan.



## 2012 AIChE SPRING MEETING Bring a Young Colleague for Half Price

### HERE'S HOW IT WORKS...

Simply invite a co-worker, friend or industry newcomer to join you at the Meeting. Your colleague can attend for 50% off the regular registration fee. **That's a savings of \$300 or more.**

You are welcome to bring any colleague who passes this simple "test":

- Your colleague is 35 or under
- Has never before attended the Spring Meeting
- And would benefit from attending the year's premier event for chemical engineers and the learning, networking and skill-building that comes with attending

### Process Development Group 12



## Process Development Division Program

Monday April 2, 2012

9:45 am – 11:30 am

(#4) - 24000 Patenting Basics: Patents 101

Sponsored by: Chemical Engineering & the Law Forum

Co-Sponsored by: Education (04), Graduate Education (04B), Emerging Energy Processes (07C), Environmental Division (09), Management Division (05), Process Research and Innovation (12A)

1:30 pm – 4:15 pm

(#20) - 12F00 Process Intensification Plenary

Sponsored by: Process Intensification

1:30 pm – 4:30 pm

(#26) - 12C00 Technology Transfer: From R&D to Deployment

Sponsored by: Technology Transfer

Co-Sponsored by: Management Division (05), Manufacturing Tools and Techniques for Optimal Results (TA1)

While in Houston ...

Here's a few places you could try while in Houston

Discovery Green downtown park  
[www.DiscoveryGreen.com](http://www.DiscoveryGreen.com)

The Shops at Houston Center  
[www.ShopsAtHC.com](http://www.ShopsAtHC.com)

Houston Pavilions  
[www.HoustonPavilions.com](http://www.HoustonPavilions.com)

Minute Maid Park – Houston Astros baseball & more [www.Astros.com](http://www.Astros.com)

Toyota Center – Houston Rockets basketball, Aeros hockey & concerts  
[www.HoustonToyotaCenter.com](http://www.HoustonToyotaCenter.com)

Main Street – Downtown dining & entertainment district  
Houston Theater District – Symphony, theater, ballet, opera & more  
[www.HoustonTheaterDistrict.org](http://www.HoustonTheaterDistrict.org)

Bayou Place – Texas' largest entertainment complex  
[www.BayouPlace.com](http://www.BayouPlace.com)

Downtown Aquarium – Dining, midway, white tigers & 500,000 gallons of marine life  
[www.DowntownAquarium.com](http://www.DowntownAquarium.com)

### Spring 2012 Programming Retreat

Joe Powell (Shell) will represent Process Development Division 12 at the annual AIChE Programming Retreat on Saturday, March 31<sup>th</sup>, in Houston, TX, ahead of the Spring meeting. Discussion topics will include ways to improve coordination of sessions and co-sponsorships among divisions via an expanded keyword list, and other approaches to be identified at the meeting. Ways to insure quality of papers and sessions will be addressed, given the recent expansion in participation and attendance.

# Process Development Division Program Continued (1)

**Tuesday April 3, 2012**

**8:00 am – 11:45 am**

(#62) - T3001 Sustainable Energy In Practice I

Sponsored by: Advances in Sustainable Energy

Co-Sponsored by: Process Development (09D), Technology Transfer (12C), Sustainable Energy (23C), Environmental Programs (14)

**8:30 am – 11:15 am**

(#53) - 12B00 Separation Methods and Solutions to Common Problems

Sponsored by: Pilot Plants

Co-Sponsored by: Separations Division (02)

**8:30 am – 11:20 am**

(#69) - 12000 Young Professionals in Process Development

Sponsored by: Process Development Division

Co-Sponsored by: The Young Professional Advisory Board (YPAB) (18C), Management Division (05), Manufacturing Tools and Techniques for Optimal Results (TA1)

**12:00 pm – 1:30 pm**

05000 Industrial Leadership Keynote Luncheon

Sponsored by: e Management Division

Co-Sponsored by: Chemical Engineering & the Law Forum (24), Education (04), Environmental Division (09), Fuels and Petrochemicals Division (16), Process Development Division (12), Separations Division (02), Topical 2: Advanced Fossil Energy Utilization (T2), Topical 6: 12th Topical Conference on Gas Utilization (T6A), Topical 7: 15th Topical on Refinery Processing (T7), Topical 8: Distillation Topical Conference (T8), Manufacturing Management Strategies (TA4)

**1:30 pm – 4:30 pm**

(#82) - 12B01 Challenges In Process Scaleup

Sponsored by: Pilot Plants

Co-Sponsored by: Engineering Sciences and Fundamentals (01), Manufacturing Tools and Techniques for Optimal Results (TA1)

**1:30 pm – 4:30 pm**

(#83) - 12F01 Productivity Enhancement by Process Intensification I

Sponsored by: Process Intensification

Co-Sponsored by: Process Intensification (07G)

# Process Development Division Program Continued (2)

## Tuesday April 3, 2012

### **1:30 pm – 5:00 pm**

(#91) - T3000 Sustainable Energy in Practice II

Sponsored by: Advances in Sustainable Energy

Co-sponsored by: Process Development Division (12), Environmental Programs (14)

### **5:00 pm – 6:30 pm**

(#106) - 18003 Spring Meeting Poster Session and Networking Reception

Sponsored by: Liaison Functions

Co-sponsored by: Education (04), Transport and Energy Processes (07), Environmental Division (09), Fuels and Petrochemicals Division (16), Process Development Division (12), Separations Division (02), Topical 2: Advanced Fossil Energy Utilization (T2), Topical 6: 12th Topical Conference on Gas Utilization (T6A), Topical 7: 15th Topical on Refinery Processing (T7), Topical 8: Distillation Topical Conference (T8), Manufacturing - General (TA)

## Wednesday April 4, 2012

### **8:00 am – 10:30 am**

(#115) - 12B02 Best Practices In Pilot Plant Development and Operation

Sponsored by: Pilot Plants

Co-Sponsored by: Management Division (05), Manufacturing Tools and Techniques for Optimal Results (TA1)

### **8:00 am – 10:30 am**

(#117) - 12F02 Productivity Enhancement by Process Intensification II

Sponsored by: Process Intensification

### **1:30 pm – 4:30 pm**

(#143) - T3002 Establishing and Ensuring Sustainable Bio and Renewable Energy Development II

Sponsored by: Advances in Sustainable Energy

Co-Sponsored by: Process Development Division (12), Environmental Programs (14)

### **1:30 pm – 4:30 pm**

(#145) - 12B03 Modeling, Measurement, and Optimization

Sponsored by: Pilot Plants

Co-Sponsored by: Systems and Process Design (10A), Product Design (12G), Manufacturing Tools and Techniques for Optimal Results (TA1)

### **1:30 pm – 5:00 pm**

(#149) - 12A00 Unsolved Process Development Problems

Sponsored by: Process Research and Innovation

Co-Sponsored by: Process Development Division (12)

## Process Development Division Leadership (2012-2014)

Chair	Michael Hill Columbia University 212-854-1095 Email: mhill@columbia.edu	Chair Elect	John F. Peragine Bristol-Myers Squibb Phone: (732) 227-5688 E-Mail: John.Peragine@bms.com
Program Chair	Robert S. Huss, Ph.D. Eastman Chemical Company Phone: 423-229-6425 Email: rhuss@eastman.com	Membership Chair	Kevin Joback Molecular Knowledge Systems, Inc. Phone: 603-472-5315 kevin@molknow.com
Assistant Program Chair	Santiago Faucher Xerox Research 905-823-7091 x261 Santiago.faucher@xerox.com	CTOC Liaison	Cawas A. Cooper AIChE Fellow Phone/Fax: (610) 509-7660 E-Mail: cawas.cooper@gmail.com
Treasurer	David Edwards Zeton Inc. Phone: (905) 632-3123 Email: dedwards@zeton.com	Awards Chair	Jay Miller LyondellBasell Industries Phone: (610) 359-2092 Email: j.miller@lyondellbasell.com
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Webmaster	Joseph W. Schroer ClearWaterBay Technology Inc., Phone: (909) 595-8928 E-mail: jschroer@cwbtech.com		

# Area Leadership

	Chair	Chair Elect	Area Coordinator
<b>12a</b> Process Research & Innovation <a href="http://pd-aiche.com/area12a">pd-aiche.com/area12a</a>	Santiago Faucher Xerox Research 905-823-7091 x261 <a href="mailto:Santiago.faucher@xerox.com">Santiago.faucher@xerox.com</a>	Qiang Xu ChE Dept Lamar University 409-880-7818 <a href="mailto:qiang.xu@lamar.edu">qiang.xu@lamar.edu</a>	Tom Enright Xerox Research 905-823-7091 x345 <a href="mailto:tom.enright@xerox.com">tom.enright@xerox.com</a>
<b>12b</b> Pilot Plants <a href="http://pd-aiche.com/area12b">pd-aiche.com/area12b</a>	David Attride Eastman Chemicals 423-967-8840 <a href="mailto:dattride@eastman.com">dattride@eastman.com</a>	Kiran Gupte BP 630- 420-4390 <a href="mailto:kiran.gupte@bp.com">kiran.gupte@bp.com</a>	Oliver Orrell Zeton Inc. 905-632-3123 <a href="mailto:oorell@zeton.com">oorell@zeton.com</a>
<b>12c/d</b> Technology Transfer & Manufacturing <a href="http://pd-aiche.com/area12c">pd-aiche.com/area12c</a>	Willian Hollar SABIC Technical Center – Engineering Thermoplastics 812-831-4751 <a href="mailto:William.hollar@sabic-ip.com">William.hollar@sabic-ip.com</a>	Jon Worstell <a href="mailto:jonathanworstell@aol.com">jonathanworstell@aol.com</a>	David Reeder Cargill Process Solutions Technology Development Center 952-984-5862 <a href="mailto:david_reeder@cargill.com">david_reeder@cargill.com</a>
<b>12e/f</b> Micro Process Engineering <a href="http://pd-aiche.com/area12e">pd-aiche.com/area12e</a>	Zhijun Jia Chart Energy & Chemicals, Inc. 608- 787-6714 <a href="mailto:zhijun.jia@chart-ind.com">zhijun.jia@chart-ind.com</a>	Laurence Weatherley University of Kansas 785-864-3553 <a href="mailto:lweather@ku.edu">lweather@ku.edu</a>	Derek Griffin Lanza Tech 630-439-3054 <a href="mailto:Derek@lanzatech.com">Derek@lanzatech.com</a>
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