

AICHE Process Development Division Fall Newsletter 2021



November 7 – 19, 2021

In-Person: Boston, Nov 7 – 11

Virtual: Nov 15 - 19



For more information, visit <http://www.aiche.org/community/sites/divisions/process-development>

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Please Join: Process Development Division (PDD)

The PD Division promotes networking and communication among engineers and scientists interested in process development through meetings, seminars, courses, and publications. This division also organizes AIChE activities in the field, and materials with other related societies. In addition, the PD division provides a forum for the engineer and educator to exchange information and ideas. Please join or encourage your colleagues to join if they are not members.

Chartered: 2000, Dues: \$10

Message from the Chair

Hello Process Development Division (PDD) members!

Welcome to our Fall 2021 newsletter. It's hard to believe it's been two years since we were able to see each other in person at an annual meeting. But we're going to have both in-person and virtual meetings this November. You'll find information about the upcoming Annual meeting in Boston, the virtual meeting, and the Spring 2020 meeting below. Early planning is also in progress for the next Process Development Symposium in early summer 2022.

My term as Division Chair is ending this year. It certainly was a challenging time, but the division stepped up to provide excellent sessions at two Spring Meetings and one Annual meeting, as well as two Process Development Symposia. This past summer's PDS was unique in that both the US and European session were held co-currently, virtually. I am grateful to all of the PDD membership for their participation and support in all these activities for the past two years.

Thanks to past chair Bob Huss, for helping me get up to speed, and thanks to all the division leadership for their volunteer efforts for this division. Qiang Xu will be taking over as Division Chair for 2022-2023. Thanks, Qiang for your work as Chair Elect, and we look forward to your leadership in the next two years.

We have held the elections for Chair-Elect and Treasurer and the new officers will be announced at the annual meeting. We'll also be transitioning all Area Chairs to Past Chair, and the current Area Chair-Elects to Area Chairs. We'll hold in-person votes for the new Chairs-Elect of each area at the programming meeting in Boston. For those attending the Annual meeting, I encourage you to join us for dinner on Tuesday night, November 8th to catch up with division members you probably haven't seen in a while. Please see the details following.

Finally, thanks to all of you for being members of the Division, and for your support. I have now retired from active employment, and so my ability to meet you in person will be limited after the annual meeting. I will certainly miss the conversations with the great people of the division. Please consider being more active in the division in any one of a number of ways. We have started the process to rejuvenate the leadership of PDD, and I hope that would continue in the years going forward. I am expecting great things from all of you.

All the best and stay safe.

Tony Cartolano
Process Development Division Chair



Message from the Incoming Chair

Dear PDD Members:

My warmest greetings! The coming 2021 AIChE Annual Meeting marks the beginning of my term as the division chair. First and foremost, I am proud, honored, and blessed to represent and help guide the division that has done so much for the promotion of networking and communication among chemical engineers, scholars, and scientists interested in process development. We have experienced the difficult time of the COVID-19 pandemic and are still suffering its aftermath. However, our motivation and determination to contribute to our division's success have never been weakened.

I am also humbled to pick up the duty and success from our outgoing PDD chair, Tony Cartolano, as well as our former PDD chair, Bob Huss. Tony, Bob, and all other PDD leadership members, including board members, programming chairs, membership and award chairs, treasurer, newsletter editor, webmaster, area chairs, co-chairs, and activity chairs have made enormous time and efforts to stand at the helm of our great division. Many thanks to this bunch of heroes.

Having stayed with PDD since 2004, my academic career in process system engineering and process development has proceeded at the same pace with PDD. I am deeply passionate about the future development of our division, which will continuously serve our PDD goals and be beneficial for all our members. While the road ahead is going to be tough, I am committed with all PDD leadership to ensuring a healthy development of our division.

As I close, I would like to thank all of you again for being members of the division and continuing your great support in the years going forward. This November, many of us will attend the AIChE Annual Meeting. Our division will have several important events such as the general meeting, the programming meeting, and the award dinner. I hope you could have a chance to join us in these activities. Should you have any questions, please feel free to contact me.

Best regards,

Qiang Xu

Professor
University Professor & Scholar
Distinguished Faculty Research Fellow
Dan F. Smith Department of Chemical & Biomolecular Engineering
Lamar University, Beaumont, TX 77710
Tel: (409) 880-7818; Email: Qiang.xu@lamar.edu



Process Development Division Chair
Effective November 2021

Process Development Division (PDD) Awards

Interested in nominating yourself or a colleague for the following categories

- Excellence in Process Development Research Award
- Process Development Practice Award
- Process Development Division Student Paper Award

Please fill out the Nomination form at

<http://www.aiche.org/community/sites/divisions/process-development/awards>

Congratulations to the 2021 PDD award winners!

Process Development Practice Award **Award Sponsor: Zeton Inc.**

Dr. Shrikant Dhodapkar

Fellow in Dow Performance Plastics,
Fellow in the AIChE,
Dow Performance Plastics Business



Excellence in Process Development Research Award **Award Sponsor: Pfizer Inc.**

Prof. Vilas Pol

Chemical Engineering Professor and
Faculty Scholar
Department of Chemical Engineering,
Purdue University



Process Development Division Student Paper Award **Award Sponsors: Linde Group**

Yiling Xu

Department of Chemical Engineering,
Lamar University





2021 Annual Meeting

What You Need to Know

COVID-19 Vaccination or Negative Test Required

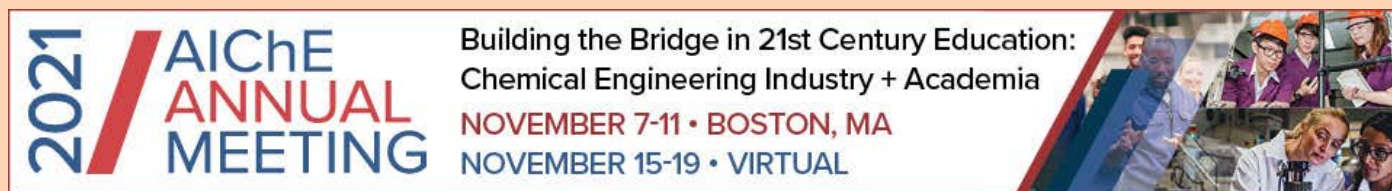
During the in-person registration process, you must attest that you are or will be fully vaccinated by October 24, 2021 OR have had a negative COVID-19 test results within 72 hours of the meeting.

For more information on this and other safety protocols being implemented, consult the Meeting FAQ on the AIChE webpage.

Potential COVID-19 Impacts on Events

Remember that ongoing changes to company travel restrictions may impact speaker availability. Be sure to check your on-line agenda for the most up-to-date schedule available throughout the meeting.

2021 Annual Meeting – What you need to know



Process Development Division (PDD) Meetings at Annual Meeting

The following PDD Meetings will occur at the in-person session of the Annual Meeting this year. Please plan to attend and become involved in the division if you are not already.

The **PDD General meeting** is planned to take place on Monday, November 8, 2021 at 6:00 PM EST in the John B. Hynes Veterans Memorial Convention Center – Room 300.

The **PDD Programming meeting** is planned on Tuesday, November 9, 2021 at 10:45 AM EST in the John B. Hynes Veterans Memorial Convention Center – Room 300.

The **PDD Dinner** is a ticketed event planned for Tuesday, November 9, 2021 at 7:00 PM. Please be sure to join us for an evening of good food and networking. You can purchase a ticket during meeting registration or at check-in.

The division meetings are great places to get involved in PDD activities. Please attend or reach out to the PDD leadership team listed at the end of this newsletter to get more involved in the division.

2021 Annual Meeting – What you need to know

Annual Meeting Featured Events and Speakers

Featured Speakers & Events

Speakers Events & Sessions



Arup K. Chakraborty
Institute Professor, Professor of Chemical Engineering, Physics, and Chemistry, Core Member of Institute for Medical Engineering & Science, Massachusetts Institute of Technology



Yang Luo
Sr R&D Director, Process Technology Department, Honeywell Advanced Materials



Roger Hart
Scientific Director (retired), Amgen



David Schaffer
Hubbard Howe Jr. Distinguished Professor, Chemical and Biomolecular Engineering, Bioengineering, Molecular and Cell Biology, and the Helen Wills Neuroscience Institute, University of California at Berkeley



Eric S. G. Shaqfeh
Lester Levi Carter Professor of Engineering, Stanford University



Phillip R. Westmoreland
Professor of Chemical and Biomolecular Engineering, North Carolina State University



Cato Laurencin
University Professor, Albert and Wilda Van Dusen Distinguished Endowed Professor of Orthopaedic Surgery, Professor of Chemical and Biomolecular Engineering, Professor of Materials Science and Engineering, and Professor of Biomedical Engineering, CEO, Connecticut Convergence Institute for Translation in Regenerative Engineering, The University of Connecticut



Bill Hammack
William H. and Janet G. Lycin Professor in Chemical & Biomolecular Engineering, University of Illinois — Urbana-Champaign

Featured Speakers & Events

Speakers Events & Sessions

NOVEMBER 8, 2021

Academia-Industry Partnership: What New Graduates Should Know

NOVEMBER 9, 2021

Academia-Industry Partnership: Preparing Students to be Leaders in Industry

NOVEMBER 8, 2021

2021 Hoover Medal Award Lecture

NOVEMBER 8, 2021

2020 Hoover Medal Award Lecture

NOVEMBER 9, 2021

2021 Andreas Acrivos Award for Professional Progress in Chemical Engineering Lecture

NOVEMBER 8, 2021

The Langer Prize for Innovation and Entrepreneurial Excellence Award Presentation and Lecture

Refer to the Meeting Guide at:

<https://aiche.confex.com/aiche/2021/meetingapp.cgi/ModuleProgramBook/0>

For all annual meeting events, refer to:

<https://www.aiche.org/conferences/aiche-annual-meeting/2021/events>

Process Development Dinner

Joe's on Newbury

181 Newbury Street
Boston, MA 02116

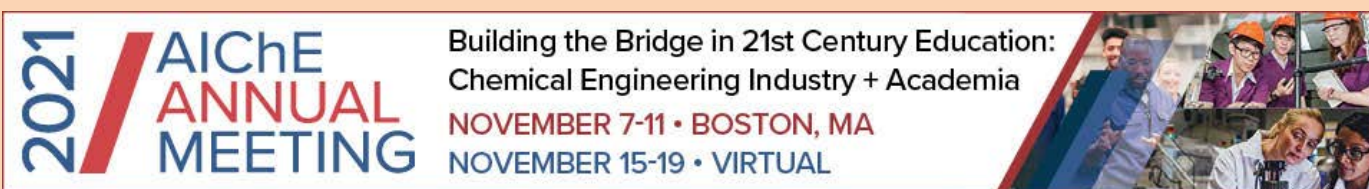
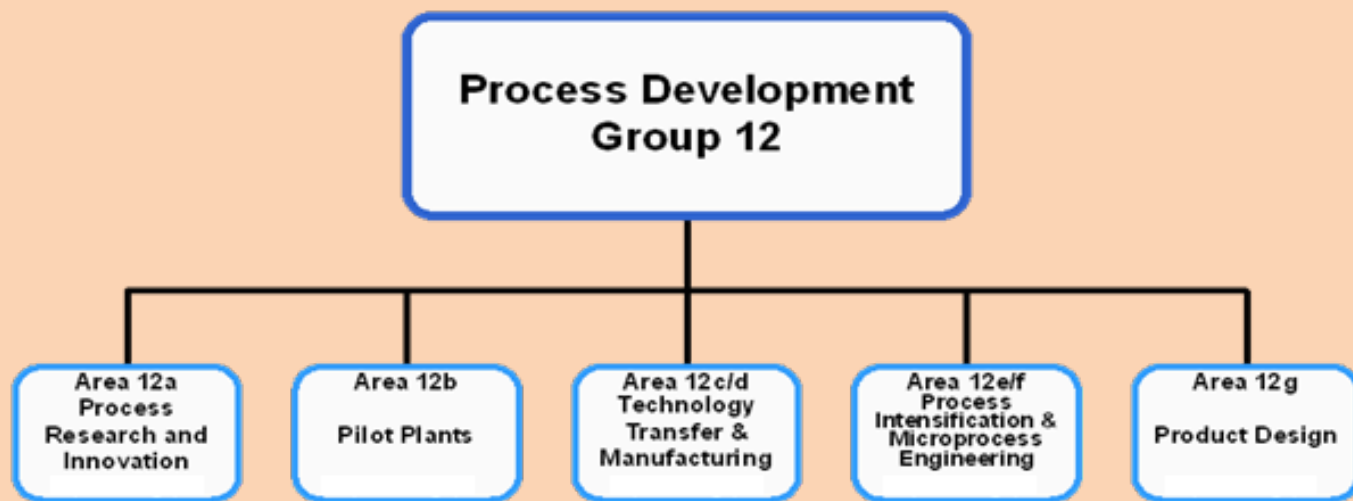
7:00 PM Tuesday, November 9, 2021

Please plan to join us for the PDD Dinner at Joe's on Newbury. The PDD dinner is a place to meet other PDD members, to socialize and network, and to just relax and get to know one another. It's a great event at what should be a great venue.

The dinner is a ticketed event. Tickets may be purchased online prior to your trip or at the registration desk in Boston. Please come and invite those who may be interested in the PDD to join us as well.



PDD Annual Meeting 2021 Technical Programming



Sunday, November 7

Sun, 3:30 – 6:00 PM

Carbon, Coal and Biomass Management

Process Development Division (12E)

Monday, November 8

Mon, 8:00 – 10:30AM

Environmentally Friendly Product and Process Development for Sustainability

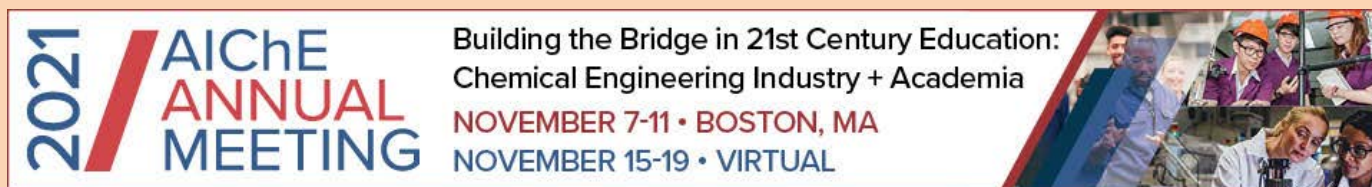
Process Development Division (12A)

Predictive Scale-Up / Scale-Down for Production of Pharmaceuticals and Biopharmaceuticals

Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

PDD Annual Meeting 2021 Technical Programming Continued



3D Printing in Catalysts, Reaction, and Energy Industry

Next-Gen Manufacturing (T6), PDD (12E) Co-Sponsored

Mon, 12:30 – 3:00 PM

Renewable Polymers and Intermediates Technology

Process Development Division (12A)

Applied Artificial Intelligence, Big Data, and Data Analytics Methods for Next-Gen Manufacturing Efficiency I

Next-Gen Manufacturing (T6), PDD Co-Sponsored

Advances in Process Design

Systems and Process Design (10), PDD Co-Sponsored

Mon 3:30 – 6:00 PM

Process Research for Improved Throughput & Efficiency, and Reduced Cost

Process Development Division (12A)

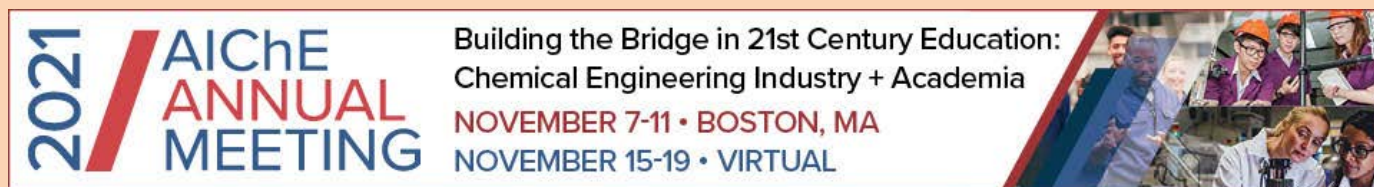
Applied Artificial Intelligence, Big Data, and Data Analytics Methods for Next-Gen Manufacturing Efficiency II

Next-Gen Manufacturing (T6), PDD Co-Sponsored

Developments in Extractive Separations: Processes

Separations Division (02), PDD Co-Sponsored

PDD Annual Meeting 2021 Technical Programming Continued



Green Chemistry and Engineering-I

Sustainable Engineering Forum (23), PDD Co-Sponsored

3:30 – 6:00 PM

Tuesday, November 9

Tue, 8:00 – 10:30 AM

Control Strategies in Pharmaceutical Development and Manufacturing I

Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

Process Design: Innovation for Sustainability

Sustainable Engineering Forum (23), PDD Co-Sponsored

Process Development: Design, Risk Reduction, Implementation and Operations

Process Development Division (12C)

Tue, 12:30 – 3:00 PM

Novel Reactors I (Targeted/Localized Heating Strategies)

Process Development Division (12E)

Control Strategies in Pharmaceutical Development and Manufacturing II

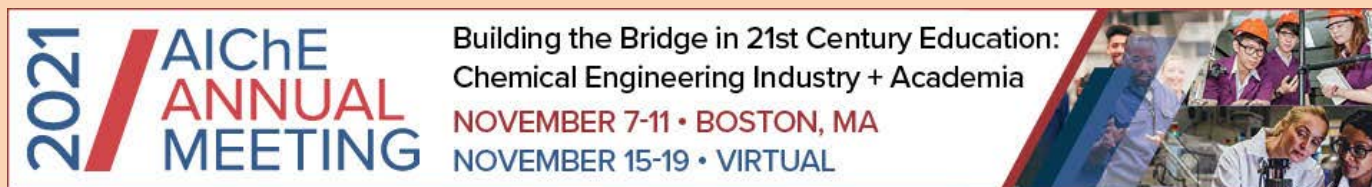
Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

Integrated Product and Process Design

Computing and Systems Technology Division (10)

PDD Annual Meeting 2021 Technical Programming Continued



Tue 3:30 – 6:00 PM

Novel Reactors II (Novel Reactor Configurations)

Process Development Division (12E)

Tools and Techniques for Sustainable/Green Product Design

Process Development Division (12G)

Future of Manufacturing and Emerging Technologies

Next-Gen Manufacturing (T6), PDD Co-Sponsored

Plenary Session: Waste Plastics

Waste Plastics (TJ), PDD Co-Sponsored

Technology Transfer and Industrial-Academic Interfaces

Catalysis and Reaction Engineering Division (20), PDD Co-Sponsored

Future of Manufacturing and Emerging Technologies

Next-Gen Manufacturing (T6), PDD Co-Sponsored

Plenary Session: Waste Plastics

Waste Plastics (TJ), PDD Co-Sponsored

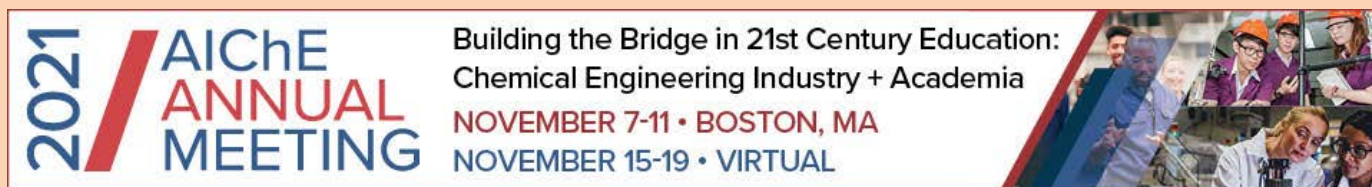
Technology Transfer and Industrial-Academic Interfaces

Catalysis and Reaction Engineering Division (20), PDD Co-Sponsored

Interactive Session: Systems and Process Design

Computing and Systems Technology Division (10), PDD Co-Sponsored

PDD Annual Meeting 2021 Technical Programming Continued



Advances in New Modalities, Product and Process Development

Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

3:30 – 6:00 PM

Wednesday, November 10

Wed, 8:00 – 10:30 AM

Process Intensification in Biorefineries

Process Development Division (12A)

8:00 – 10:30 AM

Industrial Applications in Design and Operations

Computing and Systems Technology Division (10), PDD Co-Sponsored

Structured Adsorbents: Beyond Pellets and Beads

Separations Division (02), PDD (12E) Co-Sponsored

Industrial Internet of Things, Smart and Soft Sensors in Process Mfg and Beyond

Next Gen Manufacturing (T6), PDD Co-Sponsored

Next-Gen Manufacturing for Resilience and Sustainability

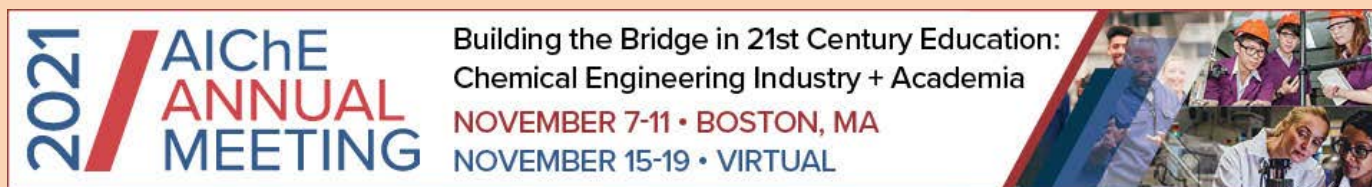
Next Gen Manufacturing (T6), PDD Co-Sponsored

Wed, 12:30 – 3:00 PM

Innovations in Concept-to-Manufacturing and Distribution I

Next-Gen Manufacturing (T6), PDD Co-Sponsored

PDD Annual Meeting 2021 Technical Programming Continued



Sustainable Energy: Generation and Storage

Sustainable Energy Forum (23), PDD (12C) Co-Sponsored

Continuous Crystallization Processes

Separations Division (02), PDD Co-Sponsored

Integrated Design of Drug Product Formulation, Manufacture and Delivery

Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

Next-Gen Manufacturing in Pharma, Food, and Bioprocessing I

Next-Gen Manufacturing (T6), PDD Co-Sponsored

Wed, 3:30 – 6:00 PM

Poster Session: Process Development

Process Development Division (12)

3:30 – 5:00 PM

Process Design in Energy and Sustainability

Computing and Systems Technology Division (10), PDD Co-Sponsored

Integrated Design of Drug Substance and Drug Product Manufacture

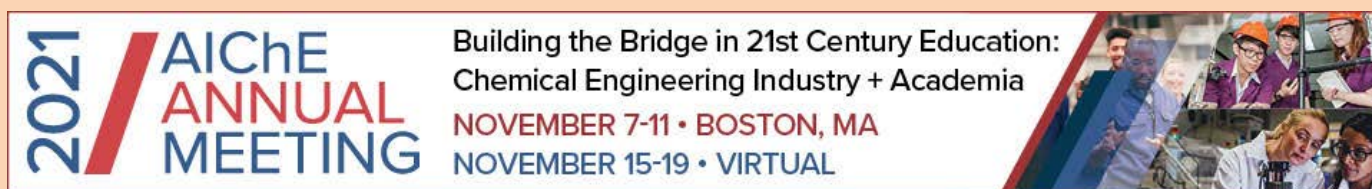
Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

Membranes for Electrochemical Conversions and Applications II

Separations Division (02), PDD Co-Sponsored

PDD Annual Meeting 2021 Programming Continued



Next-Gen Manufacturing in Pharma, Food, and Bioprocessing II

Next-Gen Manufacturing (T6), PDD Co-Sponsored

Thursday, November 11

Tue, 8:00 – 10:30 AM

Crystallization Process Development

Process Development Division (12A)

Process Development: Design, Risk Reduction, Implementation and Operations

Process Development Division (12B, 12C)

Biopolymers

Materials Engineering and Sciences Division (08), PDD Co-Sponsored

Process Intensification through Process Systems Engineering

Computing and Systems Technology Division (10), PDD Co-Sponsored

Tue, 12:30 – 3:00 PM

Sustainability and Consumer Products

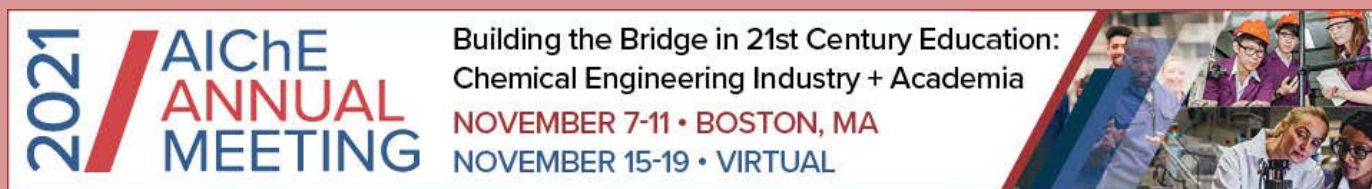
Sustainable Energy Forum (23), PDD (12C) Co-Sponsored

Tue 3:30 – 6:00 PM

Data Science/Analytics for Process Applications

Computing Systems and Technology Division, PDD Co-Sponsored

PDD Annual Meeting 2021 Technical Programming Continued



VIRTUAL SESSIONS

Monday, November 15

General Session: Process Development I

Process Development Division (12)

8:00 – 10:30 AM

General Session: Process Development II

Process Development Division (12)

12:30 – 3:00 PM

Tuesday, November 16

Advances in Computational Tools for the Analyses of Mixing Processes

North American Mixing Forum (06), PDD 12A Co-Sponsored

3:30 – 6:00

Integrated Process Engineering and Economic Analysis

Innovations in Process Engineering, PDD (12A, 12C) Co-Sponsored

3:30 – 6:00

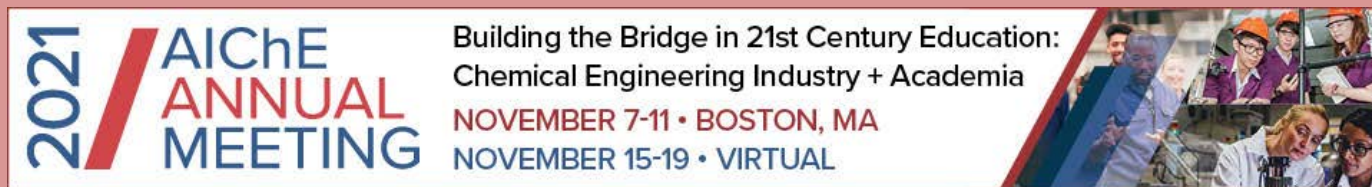
Wednesday, November 17

Mixing Scale-Up and Scale-Down Issues in Pharmaceutical Processes

North American Mixing Forum, PDD (12B) Co-Sponsored

8:00 – 10:30 AM

PDD Annual Meeting 2021 Technical Programming Continued



VIRTUAL SESSIONS CONTINUED

Advancements in Particle Engineering and Material Sciences in Pharmaceutical Process Development I

Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

12:30 – 3:00 PM

Advancements in Particle Engineering and Material Sciences in Pharmaceutical Process Development II

Pharmaceutical Discovery, Development and Manufacturing Forum (26)

PDD Co-Sponsored

3:30 – 6:00 PM

Thursday, November 18

Particulate Systems: Solids and Processing

Particle Technology Forum, PDD (12G) Co-Sponsored

12:30 – 3:00 PM

Friday, November 19

Panel Discussion: Chemical Process and Product Design Careers in Industry & Academia

Process Development Division (12G)

3:30 – 6:00 PM

2022 Spring Meeting



April 10 – 14, 2022

San Antonio, Texas

The call for abstracts for the 2022 Spring Meeting is Open!

The deadline for submitting abstracts is November 1st!



San Antonio photos courtesy of www.goodfreephotos.com



The key to a great meeting is your participation. Be sure to get your presentations submitted and we look forward to seeing you in San Antonio!

As always, there is an array of topical areas seeking papers.

Submit your abstract at:

<https://www.aiche.org/conferences/aiche-spring-meeting-and-global-congress-on-process-safety/2022>

2022 Spring Meeting

Tentative Process Development Division Sessions

Advanced Carbon Reduction Technologies

Advances in Process Design and Development

Advances in Process Intensification

Applications of Big Data Analytics for Manufacturing Process Improvements

Chemical Process Maintenance and Risk Reduction

Cost-Effective Commercialization of New Processes or Products

Modeling Tools and Techniques for Process R&D

Overcoming Manufacturing Challenges in a Circular Economy

Pilot Plant and Laboratory Safety

Pilot Plant Separations

Pilot Plants for Process Scale-up

Process Development and Chemical Engineering Under Global Warming Reality

Process Intensification Opportunities

Poster Session: Process Development Division

**Please consider contributing by submitting your abstract or
encourage your colleagues to submit.**



2022 Process Development Symposium

Tentative Schedule: June 7 – 9, 2022

**Hilton Philadelphia City Avenue
Philadelphia, PA, USA**

The Process Development Symposium (PDS) is a place to exchange wisdom, knowledge, tips, and personal experiences in process development. The PDS provides an opportunity for process development professionals from across the world to discuss their experiences with novel and innovative technologies to trigger radical changes in next-generation processes development and operations. This symposium, planned jointly between AIChE and its Process Development Division, is held annually in June.

For more information, contact Cody Hirashima (codyh@aiche.org)

Bits and Pieces

PDD Elections:

The positions for Division Chair and Treasurer are up for election. Winners will be announced at the Fall Meeting.

Brewing Competition:

PDD's Olivia Pool will be participating in the Beer Brewing Competition at the Annual Meeting. Best of luck to Olivia, and cheers!



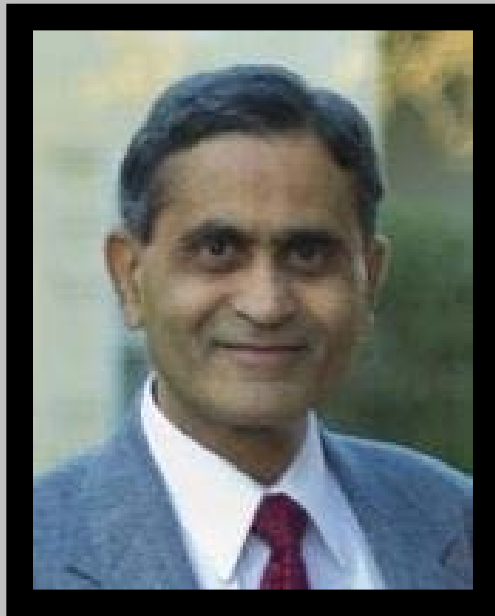
Photos courtesy of www.goodfreephotos.com



Young Professionals Liaison:

The Young Professionals (YP) Community is seeking a person to assume the role of YP Liaison. If interested, please contact Tony Cartolano (arcartolano@gmail.com) or Qiang Xu (Qiang.Xu@lamar.edu).

In Memoriam



Cawas Cooper

It is with a heavy heart that I am letting you know that Cawas Cooper passed away on Oct. 23rd. Besides being a founding member and stalwart supporter of the Process Development Division from its outset, he was also a former neighbor, colleague and a friend. Cawas was also a founder of the popular Process Development Symposia, hosting the first one in 2003 in the Poconos. He also acted as a mentor for many future leaders within the PDD and AIChE as a whole. Those of us who knew Cawas would say that he was a warm, true gentleman, with a kind and considerate heart. We wish his wife Ruby and his family our deepest sympathies at this time and recall fond memories of Cawas over the years.

Tony Cartolano

Division Chair

Process Development Division Area Leadership



Area leadership reflects the scheduled changes that go into effect for the 2021 Annual Meeting.

	Chair	Chair Elect	Past Chair
12A Process Research & Innovation	Ray Jian rjian@sabic.com	Ben Yang xiaochuan.yang@fda.hhs.gov	James Marek James.marek@abbvie.com
12B Pilot Plants	Mike Trainor mtrainor@zeton.com	Madhav Ghanta Madhav.ghanta@sabic-hpp.com	Nitin Tople SABIC 412-576-4840 nitin.tople@sabic.com
12C/D Technology Transfer & Manufacturing	Ha Dinh Ha.Dinh@honeywell.com	Micheal Telgenhoff Micheal.telgenhoff@dow.com	Rob Nunley MATRIC rob.nunley@matricinnovates.com
12E/F Process Intensification & Microprocess Engineering	Robert Broekhuis rbroekhuis@sabic.com	Patrick Heider plheider@dow.com	Matthaeus Siebenhofer m.siebenhofer@tugraz.at
12G Product Design	Mu Wang wang.m.13@pg.com	Shaibal Roy Shaibal.fmc@fmc.com	Kishori Deshpande Dow Chemical Company kdeshpande@dow.com

Process Development Division Leadership (2020-2021)

Chair 	Anthony Cartolano Retired E-mail: arcartolano@gmail.com	Chair Elect 	Qiang Xu Lamar University Phone: (409) 880-7818 Email: Qiang.xu@lamar.edu
Fall Program Chair 	Vinod Kumar Venkatakrishnan Shell Oil Company Phone: 281-544-7567 Email: v.venkatakrishnan2@shell.com	Spring Program Chair 	Juben Chheda Shell Oil Company Phone: 281 544 8232 Email: juben.chheda@shell.com
Membership Chair 	Jonathan Lekse NETL Jonathan Lekse Phone: (412) 386-7312 Email: Jonathan.Lekse@NETL.DOE.gov	Awards Chair 	Jay Miller Arkema Phone: (610) 359-2092 Email: jmiller@gmail.com
Treasurer 	Raymond Rooks MATRIC Email: Raymond.Rooks@matricinnovates.com	Past Chair and Webmaster 	Robert Huss Eastman Chemical Company Phone: 423-229-6425 E-mail: rhuss@eastman.com
Newsletter Editor 	Rob Nunley MATRIC E-mail: Rob.Nunley@matricinnovates.com	YP Liaison 	Ahmed Youssef SABIC E-mail: ahmed.youssef@sabic.com