

FALL 2020

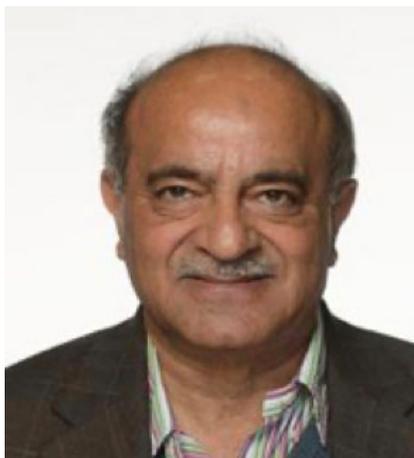


X-LINKS

CROSSLINKS: THE NEWSLETTER OF THE CHEMICAL AND BIOLOGICAL ENGINEERING DEPARTMENT

ILLINOIS TECH

Armour College of Engineering



Sohail Murad
Professor and Chair
Department of Chemical
and Biological Engineering

Dear Alumni and Friends of the Department:

I am thrilled to share with you our fall 2020/spring 2021 issue of *X-Links*, the newsletter from the Department of Chemical and Biological Engineering.

As you can imagine, the last two semesters have been rather challenging for us, as they have been for most universities and the country. In the middle of the spring semester, we had to suddenly switch to online teaching, which many of us (including I) had never done before. However, luckily, as engineers, we were able to do that almost seamlessly—although my first two lectures on Zoom did have some hiccups, and I had to make a couple of emergency calls to a friend who was more experienced with it. This semester things have gone much better. About half of our classes are in-person/hybrid while approximately half are online. Our experience has been that, in hybrid classes, after a few classes most students have preferred the online sections of the classes. The biggest challenge has been conducting exams online, although the university has now provided us with some tools that make remote monitoring possible.

We would love to hear from you to share your news in our future newsletters. Please send your updates to Beatrice Person at person@iit.edu. I hope you and your families are staying well during these challenging times. We greatly appreciate your support of the department over the years, and I wish you all the best in the year ahead.

Best regards,

Sohail

DEPARTMENT NEWS

Department Hosts Annual AIChE Midwest Regional Conference in 2020

Illinois Institute of Technology hosted the Annual American Institute of Chemical Engineers Midwest Regional Conference in March 2020. Professors Donald Chmielewski and Satish Parulekar coordinated Illinois Tech's effort to host the meeting. A key component of the meeting was a high school student-outreach event, organized by our department, which placed special emphasis on attracting students from groups that are underrepresented in chemical engineering in general and at Illinois Tech specifically.

Department Launches Successful M.A.S. in Pharmaceutical Engineering Program

Illinois Tech's Master of Pharmaceutical Engineering degree program—the first such program of its kind offered in the Chicago area—provides students with a strong foundation in pharmaceutical engineering, drug delivery, bioprocess engineering, and entrepreneurship/intellectual property management. Students will have the opportunity to select from elective courses covering topics including crystal growth, cardiovascular fluid mechanics, and nanoscale imaging.

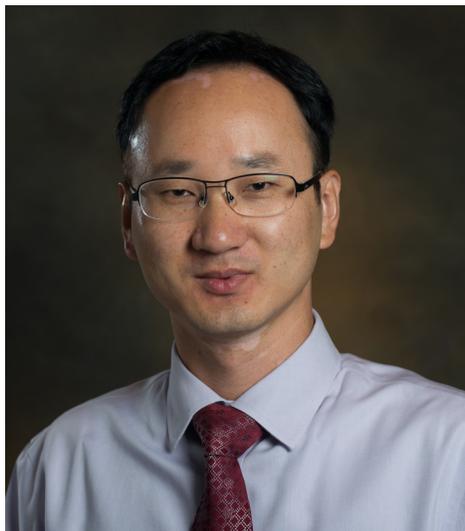


AIChE Student Chapter Receives Outstanding Student Chapter Award

The Illinois Tech student chapter of the American Institute of Chemical Engineers received the 2019 Outstanding Chapter Award from AIChE. The chapter previously received this award in 2016. Volunteers from the chapter hosted the Annual AIChE Midwest Regional Conference in Chicago in March 2020.

Ali Cinar Receives 2019 Artificial Pancreas Research Award

Professor Ali Cinar recently received the 2019 Artificial Pancreas Research Award from the Diabetes Technology Society, recognizing his team's continued efforts to further refine the algorithms that control the artificial pancreas system, factoring in additional physiological signals from wearable devices that indicate the occurrence of factors such as physical activity that influence future variations in blood-glucose concentration. To learn more about Cinar's research, visit the Illinois Tech [news site](#).



scientific knowledge in the general field of chemical engineering.

Hong's research focuses on protein engineering and synthetic biology for controlling antimicrobial-resistant bacteria and their resilient biofilm formation. His research has great potential to be applied for preventing infectious diseases, improving food safety, and enhancing water treatment processes.

John Anderson Elected National Academy of Engineering President

John L. Anderson, president emeritus and distinguished professor emeritus of chemical engineering at Illinois Tech, has been elected to a six-year term as the president of the

National Academy of Engineering, beginning July 1, 2019. Anderson succeeds C. D. "Dan" Mote Jr. In addition to Anderson, two other faculty members in the Department of Chemical and Biological Engineering are members of the National Academy of Engineering: Distinguished Motorola Professor Darsh Wasan and Adjunct Professor Bipin Vora.

Bipin Vora Elected Fellow of Indian National Academy of Engineering

Bipin Vora, adjunct professor of chemical engineering and a current United States National Academy of Engineering member, has been elected as a foreign fellow of the Indian National Academy of Engineering. Vora has been one of the key individuals responsible for leading the development and commercialization of several UOP processes. His fields of specialization include catalytic dehydrogenation; detergent alkylation; methanol to olefins; motor fuel hydrofluoric acid alkylation; and a broad knowledge of refining and petrochemical processes reaction mechanisms, process and catalysis research, process development, process design and scale-up, and new technology commercialization.



Seok Hoon Hong Named Recipient of President Young Investigator Award

Assistant Professor Seok Hoon Hong was selected by the United States chapter of the Korean Institute of Chemical Engineers (KICChE) as the recipient of its 2020 President Young Investigator Award.

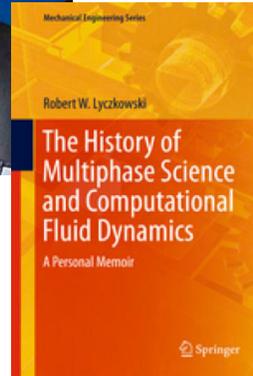
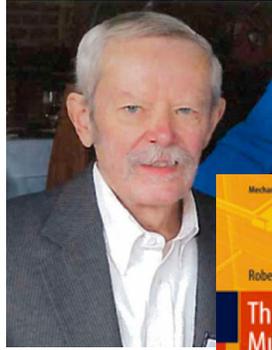
According to the KICChE website, this award recognizes Korean and Korean-American scientists and engineers who, while early in their research careers, show exceptional potential for leadership at the frontiers of



Robert W. Lyczkowski Reading Room Inaugurated

A generous donation from distinguished alumnus Robert W. Lyczkowski (M.S. Gas Engineering '66, Ph.D. Gas Technology '79), who received the Department of Chemical and Biological Engineering's 2019 Charles M. Percy Award for Distinguished Alumni, has enabled the department to inaugurate a reading room dedicated to his contributions to the department. The formal dedication was planned for March 12, 2020, but had to be postponed because of the COVID-19 pandemic. Although the department hopes to reschedule it, the room has been open and available for students. Lyczkowski has previously contributed to two fellowships in the department: the Lyczkowski Fellowship and the Gidaspow Fellowship (named for Lyczkowski's Ph.D. adviser, Distinguished Professor Emeritus Dimitri Gidaspow). Lyczkowski also recently published a book titled *The History of Multiphase Science and Computational Fluid Dynamics: A Personal Memoir*.

Lyczkowski worked for Lawrence Livermore National Laboratory, Idaho National Engineering Laboratory, Energy Incorporated, Goodyear Atomic Corp., and Hooker Chemical Corp., in addition to serving as a faculty member at Illinois Tech. He has been involved for more than 40 years in chemical and



nuclear engineering applications of his multiphase theory and computational fluid dynamics expertise, especially in the areas of heat transfer and energy conversion to develop models that are now used by industry worldwide to design various two-phase flow equipment.

Scott Zhang Awarded Illinois Tech's 2020 International Award of Merit

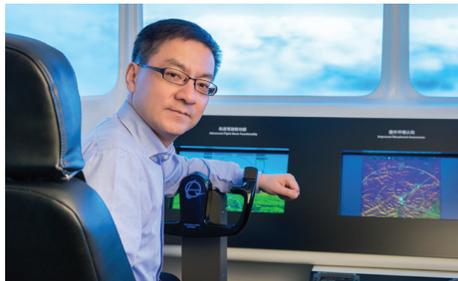
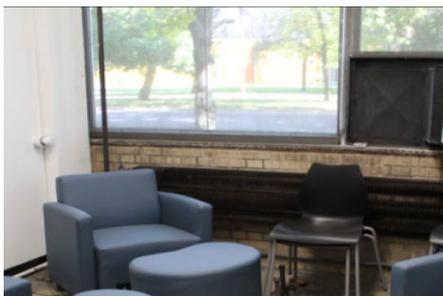
Scott Zhang (M.S. MAE '89, Ph.D. CHE '92), president of Honeywell China in Shanghai, was awarded Illinois Tech's International Award of Merit in 2020. The award recognizes an individual whose achievements have strengthened Illinois Tech's reputation on an international scale. Earlier in 2018 he also received the Department of Chemical and Biological Engineering's Charles W. Pierce Award for Distinguished Alumni.

Zhang has a long track record of highly effective leadership at Honeywell. He served as president of Honeywell Technology Solutions (HTS) for four

years, driving an internal innovation process along with external ecosystem partnerships to strengthen Honeywell's technological leadership as a competitive advantage. Zhang also leveraged the organization's diverse talent to enable global business growth and productivity, and he led the establishment of HTS Mexico to enable growth in Latin America.

Augusto Neri Awarded the Gilbert F. White Distinguished Award and Lecture

Augusto Neri (Ph.D. CHE '98), director of the Istituto Nazionale di Geofisica e Vulcanologia's Volcanoes Department, was the recipient of Advancing Earth and Space Science's 2020 Gilbert F. White Distinguished Award and Lecture, which recognizes the honoree's original contributions to the basic knowledge of natural hazards or disaster risks. At Illinois Tech, he completed his thesis on the multiphase numerical simulation of explosive volcanic eruptions under the direction of Distinguished Professor Emeritus Dimitri Gidaspow. Neri's research has been mainly concerned with the physical-mathematical modeling of volcanic and geophysical processes and phenomena. In particular, it has focused on the numerical modeling of atmospheric ash dispersal and deposition, the formation and propagation of pyroclastic density currents, magma ascent in volcanic conduits, evolution of magmatic reservoirs, lava flows, volcanic domes, and the development of integrated dynamic models of volcanic and magmatic systems.



Student Awards

Graduate Students

Graduate Fellowship Recipients

The Department of Chemical and Biological Engineering is fortunate to have several fellowships that are awarded to students annually. These have been established by many alumni and friends of the department. Here are some of our outstanding students who received these fellowships.

Alireza Kondori

Gidaspow Endowed Fellowship, Rath Endowed Research Award
Doctoral Degree Candidate,
Chemical Engineering
 Adviser: Assistant Professor Mohammad Asadi

Shuang Yang

Lyzkowski Endowed Fellowship
Doctoral Degree Candidate,
Chemical Engineering
 Adviser: Assistant Professor Seok Hoon Hong

Armour College of Engineering Scholarship

Dongyue Chen

Ahmad Ijaz

Shubhada Mahesh Khanvilkar

Fatima Rizwan

Farnaz Esmaeili Rad

Yang Liu

Barell Graduate Scholarship

Essa Almutar

Xing Jin

Zeyuan Gao

ChBE Endowed Graduate Scholarship

Mahmoud M. Abdel Latif

Mohammadreza Askari

Student Awards

Undergraduate Students

American Institute of Chemical Engineers Award

Jake Tracey: McCormack Award

Departmental Awards

Sitoshna Jatty: Service Award

Diana Wu: Research Award

Hannah Olsen: Academic Excellence



GSA members pictured with S. C. Johnson Professor of Chemical Engineering Fouad Teymour at his fabulous play titled *Twice, Thrice, Frice*.

GRADUATE STUDENT ASSOCIATION



GSA Lunch Talks: Henry R. Linden Professor of Engineering Hamid Arastoopour talks about his research on computational transport phenomena.



GSA Lunch Talks: Adjunct Faculty Member Jeffrey Zalc delivers a talk titled "Chemical Process Modeling in Petroleum Refining."



GSA Lunch Talks: Tiara DeGuzman, from Illinois Tech's Office of Career Services, talks about résumé development and methods of networking.



The 2019 AIChE Executive Board receiving the Outstanding Student Chapter Award: [from left] Nooha Menk, Abigail Gunderson, Chantel Raygoza, Joseph Hindy, Jessica Forbes, Thomas Doyle, Sitoshna Jatty, Kimberley Mannikum, Jake Tracey, Antonio Archilla, David Hults, Natalia Gielczowski, Yashwant Kathirvel, and Professor Donald Chmielewski



The inaugural AIChE Executive Board Lunch in 2019

Top row [from left]: Mohammad Sufiyan Saleem, Thomas Doyle, Jessica Forbes, Anthony Mendiola, Professor Donald Chmielewski, Jake Tracey, David Hults, Antonio Archilla, Kimberley Mannikum, Kimberley Goveas, and Joseph Hindy
Bottom row [from left]: Abigail Gunderson, Natalia Gielczowski, Hieu Trinh, Kiera Puls, and Danielle Kittaka



The 12th Annual American Institute of Chemical Engineers Midwest Regional Conference was held at Illinois Tech in 2020.



The 2019 AIChE Annual Student Conference was held in Orlando, Florida.

[From left]: Kimberley Goveas, Antonio Archilla, Heather Pecho, Danielle Kittaka, Kimberley Mannikum, and Natalia Gielczowski



The 2020 VEX Robotics Competition

[From left]: Christopher Converse, Hieu Trinh, Anthony Mendiola, and Danielle Kittaka



The 2020 ChemE Car Competition

[From left]: Vaibhavkumar Dubey, Alejandro Torres, and Thomas Doyle

Initiatives and Fundraising Priorities

- **Graduate student fellowships:**

We are seeking support to recruit highly qualified students to our Ph.D. programs. These students have multiple offers from other universities, and our ability to offer fellowships will greatly enhance our competitiveness. We are especially seeking support that can help us attract outstanding students from groups that are underrepresented in our department.

- **Endowed chairs for productive faculty:**

We are very fortunate to have highly qualified faculty in our department who are highly sought by other universities. Providing such faculty with endowed chairs will greatly enhance our ability to retain them.

- **Startup funds for new/junior faculty:**

External grants are becoming increasingly competitive, and startup funds provide new faculty with the ability to carry out preliminary research to make their proposals more competitive. In addition, enhancing our startup funds will also allow us to recruit more competitive candidates.

- **Undergraduate teaching laboratory updates:**

During these challenging times, it has become increasingly clear that we need to have the ability to offer our laboratory courses remotely, as well as in person, when needed. Currently, our laboratory equipment cannot be operated remotely. We are hoping to raise funds to make this possible in the next couple of years.

- **New shared research laboratories for faculty:**

Many funding agencies are reluctant to provide funds for shared facilities, which are often quite expensive. The department would like to have such shared equipment in the department, which would maintain this equipment. This will facilitate faculty research greatly, and also enhance the ability of our faculty members to raise external funds.

NEWSLETTER EDITORS

Sohail Murad

Chair, Department of
Chemical and Biological
Engineering

Fouad Teymour

S. C. Johnson Professor of
Chemical Engineering

Beatrice Person

Academic Program
Coordinator, Department
of Chemical and Biological
Engineering

Closing Thoughts

We are glad to have been able to share our latest department news with you. We hope you have enjoyed this newsletter and will send us your personal news to include in future issues.

We are always launching new initiatives aimed at enhancing our student experience, our ranking, and the quality of research and education we offer. We have listed the department fundraising priorities in this newsletter to keep you informed of our efforts and to describe the areas where your help could make a big difference. The department would greatly appreciate your gifts, which will make it possible to achieve our goals and introduce these initiatives.

If you are interested in making a gift or helping the department in any other way, please contact the Chair of the Department of Chemical and Biological Engineering Sohail Murad at murad@iit.edu or 312.567.3867.

We wish you wellness, prosperity, and safety in these challenging times, and we bid you a warm farewell as we look forward to connecting again with you in the near future.

With gratitude for your help and support,

Sohail Murad, Fouad Teymour, and Beatrice Person
X-Links Newsletter Editors