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Words from the Division Chair

I am happy to report that the Separations Division has had yet another strong year of technical programming and remains one of the leading Divisions of the Institute.

In the Spring, the Kister Distillation Symposium was held in a virtual format with 8 oral sessions. The Annual Meeting is being held in a hybrid format – with one week of in-person sessions in Boston followed by one week of virtual sessions for a total of 67 sessions. I commend all the Area Chairs and Vice Chairs for their dedication as they went through the programming effort this year not once but twice, navigating the hybrid format of the programming and an uncertain travel landscape up to the last minute.

Another key focus area of the Division this year was to recognize its members for their outstanding achievements and contributions to separations community with Division Awards and Area Honors. In honor and memory of Neil Yeoman, who was a founding member and a long-time contributor to the Division, the Innovation Award was renamed FRI Neil Yeoman Innovation Award, and will be sponsored by Fractionation Research, Inc. (FRI).

On behalf of the Division, I thank the adjudicating committee members for recognizing our awardees, particularly Dan Summers and Haiqing Lin for leading the Awards program, and congratulate the 2021 Division Award Winners – Gerhold: Jerry Y. S. Lin, Founders: G. Glenn Lipscomb, Kunesh: Kumar Varoon Agrawal, Innovation: Dhaval Ajit Bhandari, DB: Adam Uliana, and GSRA: Moo Sun Hong, Anish Dighe, Anna Malakian, Yu-Ming Tu, Shane Lawson, Yi Ding, and Karina Kawka.

I thank all our Directors for their contributions, particularly Marina Tsianou for leading the newsletter, and Stephen Thiel for maintaining the website, and Paul Scovazzo for AIChE Engage.

I also ask you to please join me in welcoming our new officers for 2022 – Atanas Serbezov re-elected as Secretary, Tarun Poddar re-elected as Treasurer, Seth Huggins as the 1st Vice Chair, Isaac Gamwo elected as the 2nd Vice Chair, and new Directors Evan Hatakeyama and CJ Kurth.



My special thanks to the Leadership Team for your support and counsel. Working with all of you this year has been a great pleasure and it has been an honor to have the opportunity to contribute to the Separations Division as the Chair this year.

Finally, my best wishes and support to Alice He as she takes on the responsibilities as Chair of the Separations Division for 2022.

Sincerely,

Anand Vennavelli

2021 Separations Division Chair

2021 AIChE Annual Meeting Building the Bridge in 21st Century Education



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

The AIChE 2021 Annual Meeting will be held in-person at the Hynes Convention Center, Sheraton Boston and Marriott Boston Copley Place over the dates of Nov. 7-11, 2021 and virtually from Nov. 15-19, 2021. The AIChE Annual Meeting is the forum for ChEs interested in innovation and professional growth. Experts will cover wide range of topics relevant to cutting-edge research, new technologies, and emerging areas in the field.





A message from Paul Scovazzo who is leading the efforts on AIChE Engage:

Dear AIChE Separations Division Members,

We would like to call your attention to the Separations Division Online Engage Community, an information sharing, and networking platform within the AIChE Engage Community. This platform is exclusively for Separations Division members. Each Separations Division member was automatically added as a member of this platform. Recent exchanges have been students looking for professional guidance or discussions about specific separation processes between practicing engineers. You can use this platform to assist AIChE to better connect with its membership or to give your input on how the Separations Community (academia, practicing engineers, students, etc.) can best improve the profession.

A goal of this platform is to increase engagement of members by stimulating discussion around chemical separation principles, practices, career and professional topics. In addition, through this forum, Separations Division members and leaders can ask questions, seek advice, or provide suggestions on issues that relate to the Separations Division. One important benefit of this platform is timely and easy information sharing of Separations Division activities plus useful information by members for the benefit of others.

There may be different discussions going on in this community; however, you will only receive one email digest each morning summarizing the discussions from the previous day. This email digest will be separate from the Discussion Central daily digest. Of course, you can always visit the Separations Engage community to follow up on ongoing discussions at any time of the day. To ensure you receive the digest email, *stay connected by white listing the email address Mail@ConnectedCommunity.org. You can find more information on how to white list this address [here](#).*

There are some rules regarding how we should conduct ourselves when using the private Engage Community. We recommend that you read through the [Engage Code of Conduct](#) and familiarize yourself with the platform through the [Engage Quick Start Guide](#).

We look forward to connecting and discussing with you on, Separations Engage Community.

Regards,

AIChE Separations Division Leadership

Separations Division Awards

2021 Clarence Gerhold Award



Jerry Y. S. Lin

This award, sponsored by UOP, LLC (A Honeywell Company), recognizes an individual's outstanding contribution in research, development, or in the application of chemical separations technology.

The AIChE Separations Division is pleased to announce Dr. Jerry Y. S. Lin as the recipient of the 2021 Clarence G. Gerhold Award for his outstanding contributions to Membrane Science and Separation Technologies as well as service to the Separations Division.

Jerry Y.S. Lin is a Regents' Professor in School for Engineering of Transport, Matter and Energy at Arizona State University in Tempe, Arizona. He joined University of Cincinnati as an Assistant Professor of Chemical Engineering in 1991 and was promoted to full Professor in 1998. In 2005 Dr. Lin moved to Arizona State University and served as the department chair of Chemical Engineering at ASU in 2006-2009. Dr. Lin became a Regents' Professor, the highest honor for the Arizona State University faculty, in 2011.

Dr. Lin's main research areas are membrane science, adsorption/catalysis, and energy storage. He has published over 320 refereed journal papers and 60 book chapters and conference proceeding papers, and is an inventor of 10 US and European patents, which documented many of his original contributions that have advanced these fields, in particular, inorganic membranes. Dr. Lin's publications are well cited by his peers with over 28,000 google scholar citations.

Dr. Lin received several awards including NSF Career Award and AIChE Institute Award for Excellence in Industrial Gas Technologies. He is an elected fellow of three professional societies: American Society for the advancement of Science (AAAS), American Institute of Chemical Engineers (AIChE), and North American Membrane Society (NAMS). He has also been recognized by distinguished visiting professorships such as JSPS Fellow (Tokyo University), Cheung-Kong Distinguished Guest Professor (Tianjin University) and Piercy Distinguished Visiting Professor (University of Minnesota).

Dr. Lin was a conference chair for several national and international meetings on membranes including the 2004 International Conference on Inorganic Membranes, 2010 Gordon Conference on Membrane Materials and Processes, and 2013 North American Membrane Society Annual Meeting; and chaired many sessions for AIChE annual meetings. Dr. Lin was Editor for Journal of Membrane Science during 2008-2019 and has been co-Editor-in-Chief of this journal since 2020.



Clarence Gerhold

A Pioneer in Chemical Processes

Clarence "Larry" Gerhold was one of the nation's outstanding innovators in conceiving and implementing new processes in the petroleum, refining, and petrochemical industries. His 78 patents witness to this accolade. From 1929, when he conceived of thermal reforming, to the SORBEX adsorptive separation method, he always explored the unconventional possibilities instead of simply following evolutionary paths.

Clearly, he was one of Universal Oil Products' most prolific people. He had an early vision of modern petroleum processing and worked to promote this vision. Importantly, he had the determination to push through developments which were given little hope for commercial acceptance.

An important example of his accomplishments: the Platforming process. There was general skepticism when platinum-promoted catalysts were suggested by UOP's Vladimir Haensel in 1947. Larry took a different approach. He analyzed the possible problems and persuaded the researchers to develop viable solutions. He convinced management of the need for rapid commercialization of the process. He worked with all the process development and design functions to move forward. His efforts were instrumental in a commercially-successful operation within 2.5 years of the first laboratory experiment!

Larry championed many UOP processes: thermal reforming, catalytic polymerization, dehydrogenation, and the UDEX extraction and SORBEX adsorption processes. His solutions overcame obstacles to commercial realization, and his vision and persistence resulted in new directions for these developing industries.

Gerhold Award Recipients

1992 – C.J. King
 1993 – A.D. Randolph
 1994 – J.R. Fair
 1995 – G.E. Keller
 1996 – R.W. Rousseau
 1997 – R.T. Yang
 1998 – M. Larson
 1999 – W.J. Koros
 2000 – G. Belfort
 2001 – R. Agrawal
 2002 – N.N. Li
 2003 – H.Z. Kister
 2004 – M.F. Doherty
 2005 – C. Eckert
 2006 – E.L. Cussler
 2007 – W.S. Ho
 2008 – K.K. Sirkar
 2009 – D. Bhattacharyya
 2010 – N. Yeoman
 2011 – R.D. Noble
 2012 – S. Kulprathipanja
 2013 – B.D. Freeman
 2014 – T.C. Frank
 2015 – A.S. Myerson
 2016 – D.R. Summers
 2017 – A.L. Zydney
 2018 – U. M. Diwekar
 2019 – Y. Cohen
 2020 – T. J. Cai

2021 Separations Division FRI/Yeoman Innovation Award



Dhaval Ajit Bhandari

This award recognizes outstanding contributions to scientific, technological, or industrial areas involving separations technologies. Criteria considered in selecting an awardee include development and implementation of significant discoveries, creative research, or new processes and/or products. The innovation should have demonstrated significant and measurable commercial, environmental, or societal value.

This year, the AIChE Separations Division is pleased to recognize Dhaval Ajit Bhandari for outstanding contributions to the Technological and Industrial Advancement of Membrane Separations

Dr. Bhandari's career spans two of the nation's top energy focused industrial labs - ExxonMobil Research and Engineering (EMRE) and General Electric (GE) Global Research where he has progressed high-risk, high-reward research breakthroughs in energy and sustainability.

He received his Ph.D. in Chemical Engineering from Georgia Institute of Technology in 2010 and then worked as a Lead Engineer and Program Manager at GE Global Research from 2011 to 2014. Notably, at the age of 26, Dhaval was the principal investigator on a multi-million dollar Department of Energy (DOE) funded consortium focused around carbon capture.

He joined EMRE in 2014 where he has led teams to develop disruptive concepts for low-energy separations and process intensification for refining and petrochemical sectors. In 2020, he was selected to Georgia Tech's inaugural class of '40 under 40' of global change makers. A Senior Member of AIChE, his work spans the Separations and Management divisions and the RAPID institute.



Neil Yeoman

A Promoter of Chemical Engineering

The FRI/ Yeoman Innovation Award honors the memory of Neil Yeoman, a charter member of both the Separations Division as well as FRI's Design Practices Committee. His long-time dedication to the Separations Division was exemplified by applying practical solutions to existing problems.

Neil received his BS Chemical Engineering degree from the Polytechnic Institute of Brooklyn and his MS Chemical Engineering degree from Columbia University. His first industry position was with General Foods in 1957. He then worked 26 years for Scientific Design and then 15 years for Koch Engineering where he was manager of Research and Technology. He retired in 2001 but was heavily involved with AIChE as well as the Separations Division.

Neil was a founding member of AIChE's Separations Division as well as a founding member of the Design Practices Committee of Fractionation Research, Inc., (FRI). For AIChE, Neil was elected to the Board of directors twice, was on the Career and Education Operating Council, the Membership Committee, the Admissions Committee, the Government Relations Committee, and the Equipment Testing Procedures Committee. In addition, Neil was the long-standing Treasurer of the Separations Division as well as the Treasurer of the Virtual Local Section. Neil was a Fellow of AIChE, was named on 28 US Patents, has authored over 100 publications and was the recipient of the 2010 Gerhold Award.

Anybody who knew Neil understood his passion for life and the advancement of Chemical Engineering. The Separations Industry misses Neil for all his wonderful insights, his clarity of the situation and his understanding of the path forward.

2021 FRI/John G. Kunesh Award



Kumar Varoon Agrawal

This award, sponsored by Fractionation Research, Inc., FRI, recognizes outstanding contributions to the academic, scientific, technological, industrial, or service areas involving separations technologies for individuals under the age of 40.

This year, the AIChE Separations Division is pleased to recognize Dr. Kumar Varoon Agrawal for his outstanding contributions toward Membranes Science and Technology, in particular, for developing membranes based on two-dimensional materials.

Kumar Varoon Agrawal received his undergraduate degree in Chemical Engineering from the Indian Institute of Technology, Bombay in 2005. Following this, he worked at the global R&D division of Procter & Gamble, Japan for a period of three years. He received his PhD (2013) in Chemical Engineering from the University of Minnesota in the group of Prof. Michael Tsapatsis, developing two-dimensional zeolite nanosheets. He carried out postdoctoral research at the Massachusetts Institute of Technology with Prof. Michael Strano, studying the effect of nanoconfinement on phase transition of fluids (2014-2016).

Currently at École Polytechnique Fédérale de Lausanne (EPFL), his group is engaged in material chemistry & engineering at the Å length-scale for high-performance inorganic & hybrid membranes for energy-efficient molecular separation. In particular, his group focuses on developing molecular-sieving membranes based on nanoporous two-dimensional materials such as defect-engineered single-layer graphene, exfoliated nanosheets with intrinsic porosity, and metal-organic frameworks.

He is an Early Career Editorial Board member of the Journal of Membrane Science. He is the recipient of AIChE Separation Division Graduate Student Award, North American Membrane Society Young Membrane Scientist Award, European Research Council Starting Grant, Swiss National Science Foundation Assistant Professor Energy Grant, among others.



John G. Kunesh

A Mentor to Chemical Engineers

Dr. John G. Kunesh mentored and supervised many young chemical engineers. The majority of those engineers are still contributing globally in the Separations field.

John received BS, MS and PhD degrees from Carnegie Mellon University, the latter in 1971. His first industry position was with UOP, in Des Plaines, Illinois where he soon became the Manager of Design Engineering in the Process Division. He managed twenty engineers. For six years, he led UOP's Training Group for New Design Engineers. He also led UOP's Design Engineering Course for Client Personnel.

In 1976, John left UOP for Hydrocarbon Research, Inc., in New Jersey, where he soon became their Vice President of Process Design. Among his achievements there was the management of the engineers of a coal liquefaction plant.

In 1984, John joined Fractionation Research, Inc., FRI, as their Technical Director, a position which he held for 18 years. John and his FRI group contributed appreciably to global distillation. FRI testing included: high-capacity trays, packing distributors, structured packing, high-capacity structured packing and high-performance random packing. FRI's Design Rating Program was initially authored during John's reign.

John was an AIChE Separations Division Director for 6 years, and its Chairman in 2004. Anybody who knew or worked for John enjoyed, respected, and learned from him.

The Separations world benefitted appreciably from John's time in it. Very unfortunately, John is no longer available to mentor those engineers.

Kunesh Award Recipients

2010 – S.M. Husson
 2010 – N.F. Urbanski
 2011 – I.C. Escobar
 2012 – S. Nair
 2013 – M.A. Carreon
 2014 – J.R. McCutcheon
 2015 – J.E. Bara
 2016 – K.S. Walton
 2017 – J. D. Rimer
 2018 – R. P. Lively
 2019 – W. A. Phillip
 2020 – A. Vennavelli

2021 Founders Award



G. Glenn Lipscomb

This award recognizes outstanding service to the Separations Division. The recipient must have a considerable record of service to the Separations Division and the separations area, performed above and beyond the expected duties, and participated extensively in a variety of Division activities with documented evidence of sustained service over time.

This year, the AIChE Separations Division is pleased to recognize Glenn Lipscomb with this award for his sustained contributions to the Vitality of the Separations Community.

G. Glenn Lipscomb is a Professor in the Chemical Engineering Department at the University of Toledo. He received a BS from the University of Missouri at Rolla in 1981 and his PhD from the University of California at Berkeley in 1987. After working for three years at The Dow Chemical Company developing gas separation membranes, Professor Lipscomb joined the Chemical Engineering Department at the University of Cincinnati and subsequently moved to Toledo.

In academia, his research interests have revolved around the use of membrane science and engineering to address the gas and liquid separation challenges that society faces in sustainable production of food, energy, and water. His work includes fundamental studies of transport in membranes, development of new membrane materials, and high performance design of membrane modules. This work has been supported with funding from myriad sources including the National Science Foundation, US Department of Energy, US Bureau of Reclamation, Generon IGS, Nissan, Asahi-Kasei, and FilmTec. He has supervised over 25 graduate students.

Professor Lipscomb served as chair of the Chemical Engineering Department in Toledo from 2004 to 2019. He is a past Board Member and President of the North American Membrane Society. He also is past President and current Treasurer of Omega Chi Epsilon, the Chemical Engineering Honor Society. Professor Lipscomb is a member of the Journal of Membrane Science Editorial Board, a Fellow of the American Institute of Chemical Engineers, and a member of the Missouri University of Science and Technology Academy of Chemical Engineers.

He has received several awards for his teaching and research activities including: Outstanding Teacher from the University of Toledo, Outstanding Researcher and Outstanding Teacher from the College of Engineering at the University of Toledo, and the University of Toledo Edith Rathbun Outreach and Engagement Excellence Award.

Professor Lipscomb greatly enjoyed his time as part of the Separations Division Leadership Team. One of his favorite moments was presenting a graduate student award to a student who was a graduate of his own high school.

2021 Graduate Student Research Awards

In an effort to encourage graduate students to excel, to promote a high level of interest in the field of separations, to identify future leaders in the field, and to strengthen the cooperation between academia and industry in the separations field, the Separations Division of AIChE has established a Graduate Student Research Award program.

Graduate Student Research Awards recognize outstanding work by graduate students in one of the Separations Division Program Areas: Distillation & Absorption (Area 2A), Crystallization & Evaporation (Area 2B), Extraction (Area 2C), Membrane-Based Separations (Area 2D), Adsorption & Ion Exchange (Area 2E), Fluid Particle Separations (Area 2F), and Bioseparations (Area 2G).

Each award comprises a \$200 check and a plaque. Nominees must be (have been) graduate students since the last Annual AIChE meeting and/or the following calendar year. A nomination package includes: (1) A single nomination letter detailing the student's strengths and accomplishments, by a faculty member who must be a member of AIChE; (2) A single research paper (published or otherwise) contributing to separations fundamentals or applications. This paper may be co-authored by others, but the student nominee must have been the primary author. The paper should be of a quality acceptable for publication in journals such as *AIChE Journal* or *Chemical Engineering Science*; and (3) The student's CV.

For 2021, the Separations Division is pleased to recognize the following students for excellence in separations research:

Area 2B, Crystallization & Evaporation



Moo Sun Hong
MIT
(Professor Richard Braatz)

Area 2B, Crystallization & Evaporation



Anish Dighe
University of Illinois at Chicago
(Professor Meenesh Singh)

Area 2D, Membrane-Based Separations



Anna Malakian
Clemson University
(Professor Scott Husson)

Area 2D, Membrane-Based Separations



Yu-Ming Tu

University of Texas at Austin
(Professor Manish Kumar)

Area 2E, Adsorption & Ion Exchange



Shane Lawson

Missouri University of Science &
Technology
(Professor Fateme Rezaei)

Area 2E, Adsorption & Ion Exchange



Yi Ding

Purdue University
(Professor Linda Wang)

Area 2G, Bioseparations



Karina Kawka

McMaster University
(Professor Raja Ghosh)

Professor Dibakar Bhattacharyya Graduate Student Research Award

Recognizing Professor Bhattacharyya's support and overall long-term commitment to student development in the membranes area.



Adam Uliana

University of California at Berkeley
(Professor Jeffrey R Long)

2021 Division and Area Recognitions

The Division is grateful to

- [Anand Vennavelli](#), 2021 Chair of the Separations Division for his Service

The following outgoing **Division Directors** are recognized for their service to the Division:

- [Isaac Gamwo \(2017 – 2021\)](#)
- [Marina Tsianou \(2017 – 2021\)](#)

The Division appreciates the service of the following outgoing **Area Chairs**:

- [Isaac Gamwo](#)
Area 2F, Fluid-Particle Separations
- [George Goff](#)
Area 2C, Extraction
- [Caryn Heldt](#)
Area 2G, Bioseparations
- [Mahdi Malmali](#)
Area 2D, Membrane-Based Separations
- [Peter Ravikovitch](#)
Area 2E, Adsorption & Ion Exchange
- [Joshua A. Thompson](#)
Area 2H, General Topics & Other Methods
- [Thomas Vetter](#)
Area 2B, Crystallization & Evaporation

The Separations Division is proud to honor:

- [Stefano Brandani](#)
For Outstanding Contributions to the Fundamentals of Adsorption, Diffusion and Design of Gas Separation Processes
- [Baron G. Peters](#)
For Advancing the Molecular Level Understanding of Nucleation and Growth and Connecting it to Crystallization Process Development
- [Daryl W. Hanson](#)
For Outstanding Contributions to Improve Design, Operations and Troubleshooting of Distillation Technology, for Successfully Applying Advanced Technology in Industrial Units, for Novel Applications of Existing Technology and His Willingness to Share Technology, Experience and Expertise with the Industry
- [Andrew Zydney](#)
For Outstanding Contributions to the Fundamentals of Membrane Science and Bioseparations

Education & Outreach Award

The Education and Outreach Award recognizes outstanding work to devise, improve or enhance teaching methods for Separations in Chemical Engineering Education and Outreach.

In 2020, the Division awarded **Dr. Natacha Souto-Melgar**, Teaching Assistant Professor, Ralph E. Martin Department of Chemical Engineering, University of Arkansas, for the design and development of a molecular diffusion experimentation platform to demonstrate Fick's Law and to document the results for other instructional facilities.

Below are some highlights of the activities supported by this award. A video presentation can be accessed through the [Separations Division YouTube Channel](#).

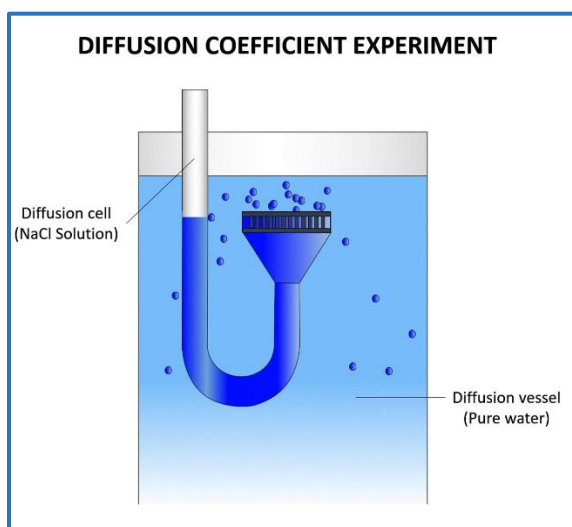


An undergraduate experience for studying the diffusion of a solute in an aqueous solution

Aldaly Pineda-Hernandez, Abner Peralta, Alexa Moreno, Christopher Silzer, and Natacha Souto-Melgar
Ralph E. Martin Chemical Engineering Department, University of Arkansas, Fayetteville, Arkansas

Molecular diffusion driven by concentration gradients is the most common type of diffusion in chemical separation processes, such as liquid-liquid extraction, stripping, and adsorption. To better understand molecular diffusion, a fundamental knowledge of Fick's law of diffusion is crucial. In the Spring 2021 semester, four chemical engineering undergraduate students participated in the Special Problem Course offered by Dr. Souto, in which they developed a new undergraduate laboratory experience. This experience consisted of a hands-on experimental work and data analysis to study the diffusion of salt in an aqueous media. This new experiment is being incorporated this Fall 2021 semester in the Chemical Engineering Senior Laboratory, where currently, there are no experiments for students to study molecular diffusion. This project was funded by the 2020 AIChE Separations Division Education and Outreach award.

The work consisted of preparing a concentrated sodium chloride solution, arming the equipment set-up, collecting and analyzing the data. We performed multiple experimental runs at different concentrations of sodium chloride (1 M and 2 M). Additionally, we prepared the experimental handout and a video demonstration. This video demonstration could also be useful in other chemical engineering courses.



The equipment that we used is the Armfield's liquid diffusion apparatus. It consists of a diffusion cell, a diffusion vessel, a magnetic stirrer, and a conductivity meter. The diffusion cell consists of a honeycomb of accurately dimensioned cylindrical pores that allows the diffusion of the salt into the diffusion vessel. The diffusion was studied by measuring the change in conductivity of the pure water in the diffusion vessel as the salt solution diffuses into the water through the diffusion cell. The pure water was in continuous agitation that

ensures that the salt concentration in the vessel stays well mixed. The salt diffuses from the diffusion cell into the diffusion vessel due to the presence of a concentration gradient.

The diffusion coefficient of the salt was determined using an equation based on Fick's law of diffusion and taking the following assumptions: perfectly mixed solutions, negligible volume available to the solute within the capillaries, and pseudo-steady-state conditions throughout the experiment. Our work resulted in the determination of a range of acceptable values for the diffusion coefficient that is obtained using this apparatus, the experimental conditions being investigated, and the assumptions used for the calculations. Also, we determined the experimental conditions that provided optimal results, such as the agitation rate, the time collecting data, and the handling of the diffusion cell.

These results were implemented in the experimental handout of the experiment such that when chemical engineering students enrolled in the laboratory course perform the experiments, they have a reference. In addition, the video we prepared describing the diffusion experiment and how to perform the calculations will be useful for the students, particularly if we need to pivot to remote learning. In conclusion, this work demonstrates how students can use this experimental setup to study the fundamental concepts of diffusion and how different experimental conditions can influence the calculation of the diffusion coefficient.



Congratulations to Dr. Souto-Melgar and the team of students from the University of Arkansas!

Election Results for 2022

Congratulations to our new Division Officers and Directors!

Alice Z. He, 2022 Division Chair



Alice Z. He is a consulting engineer at Chevron Energy Technology Company (ETC). She has more than 30 years of oil & gas industrial experience (Chevron and Mobil) after earning her Ph.D. degree in Chemical Engineering in 1989. Her technical expertise is in separations process R&D,

process modeling, and advancing new technologies from bench and pilot scale to commercial success. She has led the Separations Process R&D team at Chevron ETC for more than 15 years, where she leads a group PhD chemical engineers to research, develop, and apply novel separation process technologies in supporting internal Chevron customers across upstream and downstream businesses, and collaborates externally with practitioners in the field from industry, academia, and national labs. She is an author and coauthor of more than 25 patents and patent applications. She is also a reviewer for refereed technical journals.

Alice has been a member of AIChE since 1988 and a member of the Separations Division since 1994. She has served in the Separations Division as an area co-chair of General Topic and Other Methods (2h) from 2010-2016. She has created, organized, chaired, and presented multiple technical sessions at AIChE annual meetings, such as Green Solvents for Separations, Hybrid Separations Process, Water in Developing Communities, and Separation challenges in upstream, etc. She was elected to one of the directors in 2015 and the 2nd vice chair in 2019 of AIChE's Separations division.

Seth Huggins, 2022 1st Vice-Chair



Seth Huggins is a Director of Process Development at Amgen, leading the engineering team responsible for the process development and commercialization of its synthetic therapeutics. Seth has been at Amgen for more than 15 years and during that time has served on over 25

programs spanning from pre-clinical through commercialization. This included the drug substance team leader for commercial assets including Kyprolis[®], Corlanor[®], and as lead for the Neulasta[®] DSI.

Throughout his time at Amgen he has been influential in increasing the impact of the engineering group within the synthetic space, most notably in the areas of crystallization, process modeling and technology transfer. He and his team have established clear frameworks and business processes for these areas supporting the complete synthetic pipeline. He has been a passionate mentor and manager for his staff members, continuously elevating the performance and impact of his group members.

Seth has several publications in peer-reviewed journals and books and has given a number of presentations at AIChE meetings other notable conferences. He is a previous chair for the Crystallization and Evaporation area of the Separations Division.

Seth earned degrees in Chemical Engineering from the Ohio State University and the University of Southern California.

Isaac Gamwo, 2022 2nd Vice-Chair



Isaac Gamwo is a senior research general engineer at the U.S. Department of Energy's National Energy Technology Laboratory (Pittsburgh), where he leads a multi-institutional research group to extend state-of-the-art computational mineral-scale modeling to high-temperature, high-pressure conditions. Isaac has mentored several post-doctoral researchers, doctorate candidates, and summer Interns at NETL.

Isaac joined AIChE as a graduate student and became an AIChE Fellow in 2013. Isaac has continuously served in the Separations Division for over a dozen years primarily as Area 2f-Fluid Particle Separations Program Chair and co-Chair. He is currently completing a five-year term as a Director of the Separations Division. He recently co-edited a Taylor & Francis book *Solid-Liquid Separation Technologies: Application for Produced Water* to be released in 2021. Isaac also served as chair of the Minority Affairs Committee (MAC) and chair of the external awards subcommittee within the Societal Impact Operating Council.

Isaac earned his M.S. and Ph.D. in chemical engineering from the Illinois Institute of Technology (Chicago). He is a licensed professional engineer, a fellow of AIChE, and a member of the National Organization of Black Chemists and Chemical Engineers (NOBCChE). Isaac's work and expertise has garnered recognition through several awards including the 2020 AIChE Eminent Chemical Engineer award, the 2017 NOBCChE Cannon award for excellence in chemical engineering, and two Gold Excellence in Government awards (2011 Gold Award for Outstanding Professional Employee; 2002 Gold Award for Rookie).

Isaac previously served as an assistant professor at the University of Akron (Ohio) and Tuskegee University (Alabama), and as an affiliate graduate faculty member at Virginia Commonwealth University (Richmond). Isaac is credited on over 150 articles and presentations.

Atanas Serbezov, 2022 Secretary



Atanas Serbezov is a Professor of Chemical Engineering at Rose-Hulman Institute of Technology in Terre Haute, IN. He holds BS (1991) and MS (1991) degrees in Process Control from the University of Chemical Technology and Metallurgy, Sofia, Bulgaria and MS (1995) and PhD (1997) degrees in Chemical Engineering from the University of Rochester, Rochester, NY.

Atanas started his professional career in 1991 as a process control engineer at Honeywell. Upon earning his doctorate degree, Atanas joined the adsorption R&D group at Praxair. In 1998 he joined the faculty at Rose-Hulman Institute of Technology. While in academia, Atanas has worked as a consultant for Praxair, Eli Lilly and General Electric.

Atanas joined AIChE and the Separations Division in 1995 as a graduate student. He started his volunteer work for the Institute and the Division in 1997. Atanas has been the Division's Secretary since 2002. In 2011 Atanas was presented with the Separation Division's Service Award (now the Founders Award).

Tarun Poddar, 2022 Treasurer



Tarun Poddar is currently working in global application and business development for WL Gore and Associates, Elkton, MD. Tarun has 26 years of industrial experience while working in two different countries and in four different organizations. His experience ranges from plant design and operation in heavy and specialty chemical manufacturing to technology development, product development, application development, and commercialization of new technologies.

in filtration–separation areas. Tarun has several publications in peer-reviewed journals and presentations in various international meetings. He also has multiple patents in his name.

Tarun is a member of American Institute of Chemical Engineers (AIChE) and actively involved with the organization. He is the current treasurer of Separation division. His services for the division are highlighted below.

2010-2011: Vice-chair, area 2D (membrane-based separation)

2012-2013: Chair, area 2D (membrane-based separation)

2013-2017: Director, Separation Division

2017-2019: Assistant Treasurer, Separation Division

2019-2020: Treasurer, Separation Division

2020-2021: Treasurer, Separation Division

Tarun has organized many topical conferences and chaired numerous sessions in AIChE meetings. He served as an industrial advisory board member for Membrane Science Engineering, and Technology center- an NSF Industry/University Cooperative Research Center. Tarun holds a doctorate from New Jersey Institute of Technology, a master's from Indian institute of Technology-Kanpur and a bachelor's from Jadavpur University, all in chemical engineering.

New Directors

Evan Hatakeyama, Director (2022-2026)



Dr. Evan Hatakeyama holds a BS from University of California, San Diego and a PhD from University of Colorado Boulder in Chemical Engineering. Since 2013, he has worked at Chevron as a Research Engineer in the Separations team. His current research includes technologies

related to water treatment, membrane desalination, liquid phase filtration, and trace contaminant removal. Prior to Chevron, he developed and operated various gas and liquid waste treatment systems at Intel.

CJ Kurth, Director (2022-2026)



Mr. Kurth is a 25-year veteran of the membrane separations industry with experience in the research and development departments of Osmonics, GE Water, NanoH2O, Nanostone Water, Solecta, and Aqua Membranes.

During this time, he has been awarded 26 US patents for new membrane chemistries, cartridges, devices, production processes and applications, and has led teams developing new membrane products (polymeric and ceramic, MF/UF/NF/RO) from early stage lab work through full scale commercial launches and applications development. Mr. Kurth has been involved in the hiring, training, and laboratory set up for new membrane research and development groups located in Shanghai, Los Angeles, Halberstadt, Oceanside, and Eden Prairie. He has extensive experience in IP strategy development and portfolio management, corporate R&D strategy planning, and technology licensing. Mr. Kurth holds BS and MS degrees in chemistry from the University of Minnesota.

2021 Separations Division Officers

Elected Officers

Chair:	Anand Vennavelli (anand.vennavelli@kes.global)
1 st Vice Chair:	Alice Z. He (azhe@chevron.com)
2 nd Vice Chair:	Seth Huggins (shuggins@amgen.com)
Past Chair:	Ranil Wickramasinghe (swickram@uark.edu)
Secretary:	Atanas Serbezov (serbezov@rose-hulman.edu)
Treasurer:	Tarun Poddar (tpoddar@att.net)
Directors:	Stefano Brandani (2020-2024) (sbrandan@exseed.ed.ac.uk)
	Isaac K. Gamwo (2017-2021) (gamwo@netl.doe.gov)
	Caryn Heldt (2021-2025) (heldt@mtu.edu)
	Haiqing Lin (2019-2023) (haiqingl@buffalo.edu)
	Angela Lueking (2019-2023) (luekinga@mst.edu)
	Seyi Odueyungbo (2018-2022) (seyiodu@hotmail.com)
	Paul Scovazzo (2018-2022) (scovazzo@olemiss.edu)
	Dan Summers (2020, 2021-2025) (dan.summers@sulzer.com)
	Stephen Thiel (2020-2024) (thiels@ucmail.uc.edu)
	Marina Tsianou (2017-2021) (mtsianou@buffalo.edu)

Appointed Officers

Awards Program Coordinators:	Haiqing Lin and Dan Summers
Chemical Technology Operating Council (CTOC) Liaison:	Marcus Mello
Industry Leaders Engagement:	Isaac Gamwo
Topical Conference Liaison:	Angela Lueking
Communication Platforms:	Paul Scovazzo
Webmaster:	Stephen Thiel
Newsletter Editor:	Marina Tsianou

2021 Separations Division Area Chairs

2A, Distillation & Absorption, Chair:	Tony Cai
Vice Chair:	Greg Cantley
2B, Crystallization & Evaporation, Chair:	Thomas Vetter
Vice Chair:	Christopher Burcham
2C, Extraction, Chair:	George Goff
Vice Chair:	David Cantu
2D, Membrane-Based Separations, Chair:	Mahdi Malmali
Vice Chair:	William Phillip
2E, Adsorption & Ion Exchange, Chair:	Peter Ravikovitch
Vice Chair:	F. Handan Tezel
2F, Fluid-Particle Separations, Chair:	Isaac Gamwo
Vice Chair:	Seyi Oduyungbo
2G, Bioseparations, Chair:	Caryn Heldt
Vice Chair:	Heather Chenette
2H, General Topics & Other Methods, Chair:	Josh Thompson
Vice Chair:	Stephen Ritchie

Future AIChE Meetings

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



2021 AIChE Annual Meeting, In-Person Boston, MA (Nov. 7-11) and Virtual (Nov. 15-19)

2022 Spring Meeting and 18th Global Congress on Process Safety, April 10-14, 2022, San Antonio, TX

2022 AIChE Annual Meeting, Nov. 13-18, 2022, Phoenix Convention Center + Hyatt Regency, Phoenix, AZ



Message from the Newsletter Editor

Greetings! I am delighted to serve as the Separations Division Newsletter Editor. If you have any announcements, photos, comments to share, please forward these to me at mtsianou@buffalo.edu.

I look forward to hearing from you! -*Marina Tsianou* (University at Buffalo, SUNY)

