

Computing in Chemical Engineering Award Claire Adjiman, Imperial College London



Claire Adjiman is Professor of Chemical Engineering at Imperial College London. She holds an MEng from Imperial College and a PhD from Princeton University, both in Chemical Engineering. Her research interests include integrated process and molecular/materials design, including the development of design methods, property prediction techniques and optimisation algorithms. She works extensively with industry, especially the oil and gas, pharmaceuticals and agrochemicals sectors and has licensed thermodynamic modelling software. She has received awards that include a RAEng-ICI Fellowship (1998-2003), the Philip Leverhulme Prize for Engineering (2009), the SCI Armstrong Lecture (2011), an EPSRC Leadership Fellowship (2012-2017), and the RSC Elizabeth Colbourn Memorial Lecture (2020). She is a Fellow of the Royal Academy of Engineering, the Institution of Chemical Engineers and the Royal Society of Chemistry. At Imperial, she was a Founding Co-Director of the Institute for Molecular Science and Engineering (2015-2020) and she is Director of the Sargent Centre for Process Systems Engineering. She is a member of the editorial boards of *Molecular Systems Design and Engineering*, *Computers and Chemical Engineering* and *Fluid Phase Equilibria*, and an associate editor of the *Journal of Global Optimization* and a Trustee of Future Innovation in Process Systems Engineering (FIPSE). She is a member of several advisory bodies, in the UK (EPSRC Strategic Advisory Network) and Singapore (CARES-C4T), and chairs the Scientific Advisory Board of the Max Planck Institute for Dynamics of Complex Technical Systems Magdeburg (Germany).

Computing Practice Award
Salvador Garcia, Eli Lilly and Company



Salvador Garcia Muñoz is a senior engineering advisor for Eli Lilly and Company. He has actively contributed to the development and commercialization of new medicines influencing internal and external key players to incorporate elements from chemical engineering and mathematics into the necessary regulatory frameworks that govern the manufacture of pharmaceuticals. Prior to his current job, he spent nine years working for Pfizer Global R&D as a member of the process modeling and engineering technology group where he contributed to the scale-up and transfer of drug product manufacturing processes using modeling, simulation and data analytics. In his pre-pharma years, he worked for Aspen Technology as a business support engineer, providing consulting and services for the modeling and simulation and the real-time data management business. He obtained his BS and MS from the Monterrey Tech (ITESM- Campus Monterrey, Mexico) and his Ph.D. from McMaster University (Canada). Dr. Garcia Muñoz holds a Visiting Professor position at Imperial College London, and an Adjunct Professor position at Carnegie Mellon University, both in the Chemical Engineering Departments.

David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education

Thomas Adams, McMaster University



Thomas A. Adams II is an Associate Professor and Associate Chair in the Department of Chemical Engineering at McMaster University in Hamilton, Ontario, Canada. He received dual bachelor's degrees from Michigan State University in 2003, one in Chemical Engineering, and the other in Computer Science. He received his PhD in 2008 from the University of Pennsylvania under the supervision of Prof. Warren D. Seider and completed a postdoctoral appointment under Prof. Paul Barton at the Massachusetts Institute of Technology. He is also a licensed Professional Engineer, and is an Associate Editor with the Canadian Journal of Chemical Engineering and also with Frontiers in Energy Research. His primary educational contributions concern undergraduate and graduate course development concerning flowsheet synthesis and simulation, energy systems engineering, and computer-aided chemical engineering tools (most of which are available to the public), and the development of the book *Learn Aspen Plus in 24 Hours*. He is also the creator of PSEcommunity.org which hosts LAPSE: the Living Archive for Process Systems Engineering, which is the leading digital repository for PSE education, journal article preprints, and research materials.

Prof. Adams' research focuses on the design and simulation of sustainable energy conversion systems, including areas such as synthetic fuels, alternative fuels, biofuels, fuel cells, waste-to-energy, integrated community energy, polygeneration, and process intensification. The primary goal of his research is to create new chemical process systems and devices which will lead to worldwide global change in the way we make and use energy, following the principles of the triple-bottom-line of sustainability.

Prof. Adams has received numerous awards for his research and service, including the Canadian Journal of Chemical Engineering's Lectureship Award, the Canadian Society for Chemical Engineering's Emerging Leader of Chemical Engineering Award, membership in Industrial & Engineering Chemistry Research's 2018 Class of Influential Researchers, an Ontario Early Researcher Award, a Joseph Ip Distinguished Engineering Fellowship, the President's Award for Excellence in Graduate Supervision, and is now honored as a University Scholar at McMaster University. His research has been featured in the popular media such as in Bloomberg TV, Wired, Scientific American, the Discovery Channel, and on various TV and radio programs in the US, Canada, and Europe. But he is much more proud of the accomplishments of his graduate students, who include a Vanier Scholar, an Ontario Trillium Scholar, a Governor-General's Medal recipient, and who are active researchers and engineers all over the world.

CAST Outstanding Young Researcher Award Faruque Hasan, Texas A&M University



Dr. Faruque Hasan is currently an Associate Professor of Chemical Engineering and the Kim Tompkins McDivitt '88 and Phillip McDivitt '87 Faculty Fellow at Texas A&M University. He is also an affiliated faculty member of the Texas A&M Energy Institute. He received his B.Sc. in Chemical Engineering from Bangladesh University of Engineering & Technology in 2005, a Ph.D. from the National University of Singapore in 2010, and a postdoctoral training at Princeton University before joining Texas A&M University in 2014. Dr. Hasan leads a research group that is now being recognized for developing fundamental methods for the design, intensification and optimization of chemical processes with applications to carbon capture, natural gas utilization, energy, and sustainability. He is the recipient of the NSF CAREER award, the I&ECR 2019 Class of Influential Researchers Award, the World Technology Network Award in Environmental Category, ACS PRF Doctoral New Investigator Award, Ralph E. Powe Junior Faculty Enhancement Award, Texas A&M Outstanding Achievement Award, and Best Paper Awards from Computers & Chemical Engineering (2015) and Journal of Global Optimization (2017). Dr. Hasan is a senior member of AIChE and has served as an Area Chair for the CAST Division.

W. David Smith Jr. Graduate Publication Award
Dominik Bongartz, RWTH Aachen University



Dr. Dominik Bongartz is a group leader at the Chair of Process Systems Engineering at RWTH Aachen University, Germany. His research focuses on optimization-based process design, global optimization methods, and sustainable energy conversion. He received his B.Sc. degree in Mechanical Engineering from RWTH in 2012, his M.Sc. degree in Mechanical Engineering from MIT in 2014, and his doctoral degree (Dr.-Ing.) from RWTH in 2020, advised by Alexander Mitsos. His paper being recognized is Bongartz, D. and Mitsos, A., 2017. "Deterministic global optimization of process flowsheets in a reduced space using McCormick relaxations", *Journal of Global Optimization*, 69(4):761-796.

CAST Division Distinguished Service Award
Raymond Adomaitis, University of Maryland



Ray Adomaitis received his B.S. and Ph.D. in Chemical Engineering from the Illinois Institute of Technology. After two years working on computational nonlinear dynamics as a postdoctoral researcher at Princeton University, he joined the Institute for Systems Research (ISR) at the University of Maryland as a postdoctoral fellow. Currently, he is a Professor in the Chemical and Biomolecular Engineering Department with a joint appointment at the ISR at the University of Maryland. He also is affiliated with the Maryland NanoCenter and the University of Maryland Energy Innovation Institute (MEII).

Ray's research interests focus on simulation and design of thin-film manufacturing processes with applications in microelectronics, alternative energy, nanomanufacturing, and spacecraft systems. Most of his current efforts are directed to developing physically based models of atomic layer deposition surface reaction kinetics to provide simulation tools for the scale-up and optimization of these manufacturing processes. His teaching activities include undergraduate and graduate-level classes in solar energy, chemical engineering computations, and both systems and chemical engineering capstone process design. He also served as the Engineering team leader for the Maryland 2017 Solar Decathlon entry. Among other awards and activities, he is Fellow of the American Institute of Chemical Engineers. Ray currently acts as the NSF Process Systems, Reaction Engineering, and Molecular Thermodynamics Program Director.