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**Ali Elkamel** is a Professor in the Department of Chemical Engineering and is cross-appointed to the Systems Design Engineering department at the University of Waterloo. He is a member of the Canadian Society for Chemical Engineering, the American Institute of Chemical Engineers, the Canadian Operational Research Society, and the Institute for Operations Research and Management Sciences (INFORMS). Along with his students, Professor Elkamel has successfully developed region-wide cost effective carbon dioxide strategies that will help to find solutions for carbon dioxide capture, additional treatment, transportation and storage. In 2013, they were able to apply their optimization of networks monitoring air quality solution to an existing network of refinery stacks, which improved the ability to protect environmental resources and human health. His lab, in conjunction with Virox Technologies Inc. and Professors Duever and Reilly, has also designed a green product disinfectant that received the Design for the Environment Champion Status Award. He holds more than 200 refereed journal publications, international proceedings, and conference presentations. His publications have been featured in the Journal of Physical Chemistry, Advances in Environmental Research, and the Journal of Dispersion Science and Technology among many others. He has also written 4 books, including "Environmentally Conscious Fossil Energy Production."

**Azadeh Maroufmashat** is a postdoctoral fellow in Chemical Engineering, University of Waterloo. She obtained her B.Sc. degree in Mechanical Engineering in 2007 and her M.Sc. and Ph.D. in energy system engineering in 2010, and 2015, respectively, all from Sharif University of Technology, Tehran, Iran. During her PhD, she was a visiting scholar at the University Waterloo. Now she is working on projects related to the modeling and optimization of various energy conversion and storage systems at University Waterloo as a postdoctoral fellow. Her research interests lie at the intersection of energy system modeling, optimization and policy recommendations and her research contributions have been in the optimal integration of sustainable energy generation and storage technologies with the current energy system. She has investigated the technical, environmental, and economic aspects of urban energy system modeling (a micro-grid application), and power-to-gas as a feasible energy storage technology and a low-carbon sustainable energy alternative for transportation and for the hydrogen economy. Her future research will address climate change issues in large scale energy system modeling. She has a number of advising experiences; as examples of successful mentorship, teams that she co-advised were the Grand prize winners (2016) and honorable mentions (2018) of the Hydrogen student design contest, held by the Department of Energy (DOE) of the United States.