



## Water - The Global Challenge and Everybody's Business: Social & Technological Perspective

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20 March 2019, 3pm, Lecture Theatre 3 RODH 333

**Abstract:** Thirty three percent of the world population do not have decent toilet and 11% of the world population do not have clean water close to home. Globally, about 2 billion people use a drinking water source contaminated with faeces. Quality water and quality life go hand in hand. The food we eat, the house we live in, the transports we use and the things we cannot do without in 24/7/365 determine our quality of life and require sustainable and steady water supplies. Exponential growth in population and improved standards of living require increasing amount of freshwater and are putting serious strain on the quantity of naturally available freshwater around us. As the world population grows, the heavily industrialised world we live or strive to live continues to generate vast volumes of wastewater plagued with industrial effluents, sewage, and many harmful, some carcinogenic, by-products, which are often simply disposed of in rivers and oceans. Contaminated water transmits diseases such as diarrhoea, cholera, dysentery, typhoid, and polio cause over half a million diarrhoeal death each year. Global thirst will turn million into water refugees. The disputes over water will inevitably become more common, as 220 river basins globally are shared by two or more countries and scarcity of water can lead to riots. Without more effective water management systems, lack of water availability will become a problem threatening national security in many countries. Water insecurity is not an issue that can be understood from the perspective of one discipline. Water affects everybody. Apart from the technological, scientific and engineering dimensions, there is an essential social dimension to water insecurity. Although some of the technological problems being faced regarding the water security and water management could easily be resolved in a matter of years, social and political issues regarding water management will take much longer time to resolve. This talk will highlight some of the social and technical issues around water which is a grand challenge of the world requiring multidisciplinary approach for the solution.

**Bio:** Iqbal M Mujtaba is a Professor of Computational Process Engineering and is currently Associate Dean (Learning, Teaching & Quality) of the Faculty of Engineering & Informatics at the University of Bradford. He was Head of the School of Engineering at the University of Bradford from 2016-2018. He obtained his BSc Eng and MSc Eng degrees in Chemical Engineering from Bangladesh University of Engineering & Technology (BUET) in 1983 and 1984 respectively and obtained his PhD from Imperial College London in 1989. He is a Fellow of the IChemE, a Chartered Chemical Engineer, and the Chair of the IChemE's Computer Aided Process Engineering Special Interest Group. He was the Chair of the European Committee for Computers in Chemical Engineering Education from 2010-2013. He is currently an Associate Editor for *Asia Pacific Journal of Chemical Engineering* and an Editorial Board Member of the journals *Processes*, *Energies* and *Desalination*. Professor Mujtaba leads research into dynamic modelling, simulation, optimisation and control of batch and continuous chemical processes with specific interests in distillation, industrial reactors, refinery processes, desalination, wastewater treatment and crude oil hydrotreating focusing on energy and water. He has published more than 300 technical papers and has delivered more than 70 invited lectures/seminars/plenaries/keynotes/short courses around the world.