



ABUL HUSSAM

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Born in Bangladesh (1952), Abul Hussam, is now a Professor of Chemistry and the Director of Center for Clean Water and Sustainable Technologies (CCWST) in the Department of Chemistry and Biochemistry at George Mason University, Virginia, USA. He finished his early education in Kushtia, Bangladesh (1970) and then graduated in Chemistry (B.Sc. Honours 1975 and M.Sc. 1976) from University of Dhaka, Bangladesh. Dr. Hussam earned his Ph.D. in Analytical Chemistry from University of Pittsburgh, Pennsylvania in 1982. He then obtained his postdoctoral training on Separation Chemistry at Department of Chemistry, University of Minnesota. He joined George Mason University in 1985. He was also a visiting research scholar at Georgetown University and Case Western Reserve University.



Professor Hussam's research areas include electroanalytical chemistry, environmental chemistry, and chemistry in organized media. His early scientific work was centered on electrochemistry in non-aqueous media, spectroscopic (NMR and FTIR) characterization of hydrogen bonded water, and diffusion behavior of micelles and microemulsions. Professor Hussam later developed computer-controlled instruments such as electrochemical analyzer, automated titration system, and high precision equilibrium headspace gas chromatographs for the study of fluid phase chemistry in complex media including the study of the environment. These experiences allowed him to develop measurement and mitigation techniques (like SONO water filter) for toxic arsenic species in groundwater.

Professor Hussam has published and presented over 100 scientific papers in international journals, proceedings, and books. His research on the measurement of trace arsenic, aquatic chemistry of arsenic in groundwater, and the development of a simple arsenic filter was recognized through international publications and accolades. His work is now described in chemistry and engineering textbooks and cited as one of the most significant contributions in water purification technologies with indigenous materials.

Professor Hussam received the 2007 Grainger Challenge Prize for Sustainability from the US National Academy of Engineering (NAE) for the development of SONO arsenic filter. This is now used by hundreds of thousands of people in the affected areas of Bangladesh, Nepal, India, and Pakistan.