



BIOGRAPHY

Professor Dr. Muthanna Al-Dahhan

Professor and chairman, chemical and biological engineering department

Professor of Nuclear Engineering

Missouri University of Science and Technology (Missouri S&T)

Rolla, MO, 65409, USA

Tel: 573-341-7518, Fax: 573-341-4377, aldahhanm@mst.edu

Dr. Muthanna H. Al-Dahhan is professor and chairman of the Chemical & Biological Engineering Department, Professor of Nuclear Engineering and Senior Investigator in the Environmental Research Center at Missouri University of Science and Technology (Missouri S&T), Rolla, Missouri (formerly, University of Missouri – Rolla, UMR). He was a member of the Washington University faculty since 1994. He was a professor of Energy, Environmental and Chemical Engineering before he moved to Missouri S&T on January 1, 2009. Dr. Al-Dahhan also served as co-director of the Chemical Reaction Engineering Laboratory, an industry sponsored consortium related to energy and chemicals. His research activities are related to 1) advancing the knowledge and understanding of multiphase reaction engineering and multiphase reactors and processes via advanced measurement and computational techniques; 2) modeling of transport – kinetic interactions; 3) energy efficient and environmentally responsible design, scale-up and performance of multiphase flow systems; 4) development of advanced measurement techniques including radiometric techniques; 5) application of radioisotopes in industrial imaging and visualization; and 6) advancing and investigating various multiphase processes related to sustainable energy and environment, production of clean energy, bio-energy, fuels, chemicals, biomass and coal conversion and clean utilization, waste treatment, environmentally responsible and risk free proliferation nuclear energy using 4th generation nuclear power, etc. Dr. Al-Dahhan holds three degrees in chemical engineering. He received his doctoral degree from Washington University in 1993, his M.Sc. degree from Oregon State University in 1988 and his B.Sc. degree from the University of Baghdad in 1979. Dr. Al-Dahhan held various engineering positions, from 1978-1985 with companies and research laboratories in Baghdad, Italy and the former republic of Yugoslavia (Serbia). After a short industrial experience as a project manager with Xytel Corporation – Chicago (1993-1994), he first joined Washington University in 1994 as an adjunct assistant professor of chemical engineering and became associate director of the Chemical Reaction Engineering Laboratory (CREL) that same year. In 1999, he became tenure track assistant professor. Dr. Al-Dahhan became associate professor with tenure in 2002 and full professor in 2005. In 2003, he was named CREL co-director. He formed and directed from 1999-2008 Clean Alternative Energy Using Slurry Bubble Column Reactors Consortium, a multi-university (Washington University, Ohio State University and Rensselaer Polytechnic Institute) and industry consortium to convert syngas (a mixture of hydrogen and carbon monoxide obtained from partial oxidation of natural gas, biogas, coal and biomass) to clean liquid fuels and chemicals. The consortium was sponsored by ConocoPhillips (USA), Eni (Italy), Sasol (South Africa), Statoil (Norway), DOE via Air Products and Chemicals (for 1999-2003) with a new addition of Johnson Matthey Catalyst (UK) (2006-2008). In addition, he had as principal investigator, a grant from DOE – University coal research on converting syngas to clean liquid fuels and chemicals (1999-2003) in collaboration with Ohio State University. Dr. Al-Dahhan was a director of joint project (sponsored by DOE (~2.1 million) from 2002-2007) with the Oak Ridge National Laboratory and Iowa Energy Center on converting animal and farm wastes to biogas (bioenergy) via anaerobic digestion where he directed the development of dual source gamma ray computed tomography (DSCT) and multiple radioactive particle tracking (MRPT) techniques; first of them in the world to image and visualize in a non-invasive manner opaque multiphase flow systems and reactors. From 2003 to 2008, he served as a co-leader of the National Science Foundation Engineering Center – Center for Environmentally Beneficial Catalysis (CEBC) directed by University of Kansas – the headquarter, in collaboration with University of Iowa, Washington University, and Prairie View A&M University, Texas. Dr. Al-Dahhan has been active and collaborating with industry on various joint projects and research contracts related to energy and chemicals using multiphase reactors and processes. He has obtained since 1995 over \$8 millions in external funding as PI and Co-PI. He has supervised over 45 graduate students (40 PhD students) and a large number of post-doc fellows, research associates and undergraduate students on a wide range of topics. All of his students and co-workers are holding leading positions in industry and academia in the United States and around the world. Dr. Al-Dahhan is also active with the International Atomic Energy Agency, where he chairs advisory groups for the agency's proposed research projects and takes missions to various developing countries to train groups of engineers and scientists on the applications of radioisotopes in industry for process imaging and visualization. His research activities include more than 150 publications and proceedings in refereed scientific and technical journals and over 350 of national and international conference presentations. He gave a large number of invited talks in industry, academia and national labs, plenary and keynote lectures. Dr. Al-Dahhan has received many awards and also his graduate and undergraduate students received many awards for the work done under his supervision. He formed and chaired international conferences on Bio-Energy I (in Portugal, 2006) and II (in Brazil, 2009) (organized by Engineering Conference International, ECI). He organized and chaired (gas-liquid-solid reactor engineering for energy and environment (GLS 9) conference as a part of the World Congress of Chemical Engineering, WCCE8 – Montreal, 2009). He has formed and chaired a large number of sessions in national and international conferences. He is a member of several scientific conferences boards, also a member of the American Institute of Chemical Engineers, the American Society of Engineering Education and the American Chemical Society.