

# Natural Gas Processing Research at Texas A&M University

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Texas A&M University at Qatar

Professor of Chemical Engineering & Petroleum Engineering  
Director, TEES Gas & Fuels Research Center



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11:00 a.m. - 12:30 p.m.

Frederick E. Giesecke  
Engineering Research Building  
Third Floor Conference Room

## Abstract

Qatar has world-class reserves of natural gas and significant reserves of petroleum, and it hosts the most advanced existing plants and refineries in natural gas monetization. Texas A&M University takes full advantage of this unique environment to build a globalized center of research excellence in the advancement of gas processing technologies in Qatar and the United States. Furthermore, this center acts as an excellent educational and training tool to produce skilled researchers and highly qualified engineers in a field of national interest to Qatar, but also extremely relevant to the United States shale gas wealth and to the global need for developing new technologies for the monetization of natural gas.

The Texas A&M Experiment Engineering Station (TEES) launched in 2015 its Gas & Fuels Research Center (GFRC), led by Texas A&M Qatar, in collaboration with the main campus in College Station. The aim of this initiative is to establish several global consortiums and to build unique collaboration between academia and industry.

The focus of the GFRC is to advance natural gas processing technologies and to improve the environmental impact of the fuels and chemicals produced from natural gas while ensuring safety and optimizing mass and energy for the whole process. About 27 faculty members from Mechanical, Chemical, Petroleum, Material, and Safety Engineering are involved in the GFRC both from Texas A&M University at Qatar and Texas A&M University-College Station.

The talk of Dr. Elbashir will also highlight his research team activities that are focused on designing novel reactors and products processing technologies to convert natural gas and CO<sub>2</sub> to ultra-clean fuels and value-added chemicals. The outcome of his research team activities has been used to support the advancements of GTL reactors and in the formulation of new generations of synthetic fuels and chemicals from natural gas. These projects have been carried out in collaboration with world leading researchers from academia (University of Cambridge, Northwestern University, DLR, University of Sheffield, etc.) and global energy corporate (TOTAL, Shell, General Electric (Oil & Gas), ORYX GTL, Qatar Airways and others).

## Biography

Dr. Elbashir holds a joint appointment as a Professor in the Chemical Engineering Program and the Petroleum Engineering Program at Texas A&M University at Qatar. He is the Director of Texas A&M Engineering Experiment Station Gas and Fuels Research Center; a major research center that involves 27 professors from both Texas A&M University main campus in College Station and Qatar campus (gfrc.tamu.edu). Dr. Elbashir is also the Chair of the ORYX GTL Gas-to-Liquid Technology Excellence Program.

He has extensive research and teaching experience from four different countries around the world, including his previous position as a researcher at BASF R&D Catalysts Center in Iselin, New Jersey.

The focus of his research activities is the design of advanced reactors, catalysts and conversion processes for natural gas, coal, and CO<sub>2</sub> to ultra-clean fuels and value added chemicals. He has established several unique global research collaboration models between academia and industry with research funds exceeding twelve million dollars during the past six years. He holds several U.S. and European patents, and a significant number of scientific publications in the form of peer reviewed journals, conference papers, technical industry reports as well as invited and conference presentations.

He is the recipient of: TEES 2016 Genesis Research Excellence Award; TAMUQ 2017 Faculty Excellence Award; 2015 Texas A&M Former Student Association Distinguished Teaching Award-College Level; 2015 TAMUQ Dean Leadership Award; 2012 Qatar Foundation Best Energy & Environment Research Team; Shell (Synthetic Aviation Fuels Recognition in 2013); ORYX GTL (GTL Diesel Fuels Award in 2016) and several awards from AIChE (Best Papers and Posters in Catalysis, Fuels and Separation Processes), and BASF Corp. (Environmental Catalysis in 2007).