Other

Future Challenges in Energy Production: Some R&D Opportunities in Multi-phase Fluid Flow

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EPIC Seminar Series

Patrick Taylor Hall 1106
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Abstract:

As the world's population is expected to reach 9 billion by 2050, with demands for energy increasing at approximately 1.2%/year in this period, the challenges facing the global society are significant. TOTAL, the 5th largest IOC, expects that fossil fuels will remain the major source of energy in 2050 but believe there are some significant challenges that will limit the production of O&G in the future. Hence, the need for significant research in exploration and production to have higher recovery (reservoir characterization), enhanced/improve oil, recovery (produce more from existing resources) and more efficient production process designs (efficiency, cost, technology). The downstream side of TOTAL also faces significant challenges in the future to continue to drive the best value proposition for its customers. This includes: improving the efficiency of the base chemicals and petrochemicals manufacturing to reduce GHG footprint, improve the quality of products and develop products that also provide new benefits or improved benefits (i.e. lubricants to improve engine efficiency). One common thread across many of these challenges in research is the better understanding of multiphase flow - in the reservoir, at the production site (surface facilities), refineries or at the specialty chemicals manufacturing facilities. This talk will try to highlight some of the key challenges in research TOTAL faces related to fluid/multiphase flow.

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Speaker's Bio:

Dr. Shaffiq Jaffer graduated from McMaster University with a PhD in chemical engineering and has worked in R&D throughout his career. He has worked for Koch-Glitsch developing novel chemical technology equipment, Procter and Gamble developing novel processes/improved process for the delivery of complex fluids and the past 5 years at TOTAL leading the corporate research efforts in North America. Currently, Dr. Jaffer collaborates actively with ~25-30 universities and 4-5 national labs. A key focus today is on finding researchers to help drive better development of shale gas/oil, ultra-deep water, polymer processing, solar C-Si cells and 3rd generation biofuels.

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