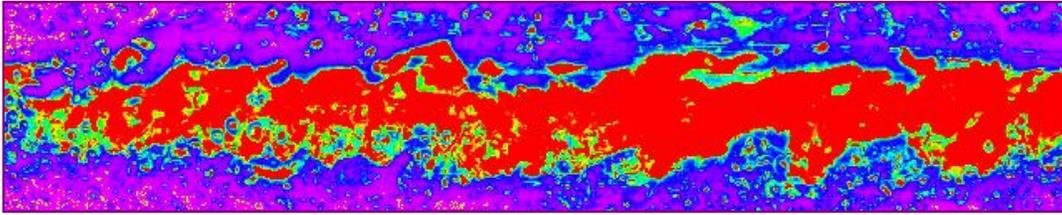


Seminar on Fundamentals of Multiphase Flow

ICPE 2016

31st December 2016 at BUET, Dhaka, Bangladesh



Very complex spatio-temporal multiphase flow patterns, which are often observed in pipelines and wellbores, are not themselves fully understood. Fundamental understanding of the complex flow regime on multiphase flow hydrodynamic scaling and geometric scaling is an open challenge and essential for a substantial economic growth for many industries. Flow assurance such as hydrate formation, slug formation, corrosion build-up, sand production, wax formation, produced water from wells creates severe environmental and safety hazards. The seminar will provide a comprehensive means of improving the design conditions of multiphase flow in pipelines and wellbores. The knowledge from this seminar will lead to significant benefits for graduate students, postdoctoral fellows, engineers and academics related to this area.

Fundamentals and Basics

The seminar will cover the common backgrounds and fundamentals related to multiphase flow. The seminar will cover the latest empirical and mechanistic modelling for calculating the pressure loss and volume fractions in multiphase flow. Gas/liquid, liquid/solid and gas/liquid/solid phase will be covered in the seminar. Several case studies in fluid flow in pipes and production wells will be discussed such as:

1. Horizontal, vertical, and inclined multiphase flow in pipelines and wellbores
2. Slurry flow in pipelines
3. Slug flow, hydrate flow, bubble dominated flow, and droplet laden flow.
4. Pipeline and wellbore leak detection
5. Abnormal flow (such as gas-kick) and its effect on structural integrity
6. LNG fire and domino effects
7. Artificial gas lift
8. Multiphase flow through porous media

Lecturers

Dr. Aziz Rahman, Ph.D., P.Eng., Assistant Professor, Process Engineering, Faculty of Engineering and Applied Science, Memorial University of Newfoundland. Email: marahman@mun.ca

Short Bio:

Rahman's background in multiphase flow experiments and CFD of both academic (fundamental) and industrial (applied) research contributions have been documented in more than 50 refereed journals and conference proceedings. In recognition of his high-quality research endeavors, Rahman has been awarded several multimillion-dollar grants from organizations such as the

Natural Sciences and Engineering Research Council of Canada and Newfoundland Research & Development Corp. He has been involved in a number of research collaborations with companies, including Intecsea, Husky Energy, Syncrude Canada, GRI simulations, C-Core and Coanda Research & Development Corp. He is also involved in with a number of professional organizations, including SPE, ASME and CSME. He is a registered Profession Engineer in Alberta, Canada.