

Dear All,

The Department of Chemical Engineering is pleased to invite you to the Industry Lecture Series of the January -2024 semester. The seminar is open to all and is mandatory for first year M. Tech students of Chemical Engineering.

The Date and time of the lecture are as follows:

Date: 13/03/2024 (Wednesday),

Time: 4:00 pm

Title: A Career in Industry: Leveraging Fundamental Concepts to Solve Industrial Problems

Speaker: Girish Rao, Team Leader, Gas Processing Center of Expertise, Shell

Abstract

A frequently cited gap between “industry ready” engineers and freshly graduated students is the passion to apply fundamental concepts to solve industrial problems: what is taught in academia unfortunately remains in academia. In this lecture, a number of case studies (based on real incidents) will be shared, and their resolution by invoking basic concepts will be described. The cases will range from chemical thermodynamics (“Energy Transition”), process engineering (dehydration units in LNG assets), and product development (stability issues in fuel oil) to interfacial science (cEOR and spreading phenomena). In addition, I will be sharing experience on how the industry recruit’s young talent (i.e. what we look for), and how we then develop that talent into the engineers of tomorrow.

Brief Resume (Girish Rao)

Girish Rao has rich experience in delivering technology to a broad spectrum of different businesses (medical diagnostics to ‘Fast Moving Consumer Goods’(Unilever, FMCG) and to ‘Oil & Gas/Energy’ (O&G, Shell) from an equally broad experimental skill base (electrochemical biosensors to image analysis). Some of the notable technology deliveries from his

team(s) in the Shell Technology Centre Bangalore (STCB) have been de-risking of radical renewable energy technologies (hydrogen and chemical sustainability), updated design models for natural gas dehydration units, a breakthrough in the mature “Polymer Modified Bitumen” (PMB) technologies and updating Product Stewardship guidelines for the Downstream bitumen business. The “Centres of Expertise” that Girish has helped create in STCB have focused on both bench scale and pilot plant scale experimentation. Girish’s recent individual contributions have leveraged his electrochemistry and interfacial science skills: a “Complexation Power” method for amine corrosivity, Dielectric Spectroscopy for asphaltenes, and a screening tool for HSE assessment of short residues. Girish’s current role is as a Team Leader for the Gas Processing Centre of Expertise.

In Girish’s 15 years at Unilever Research, he was responsible for “brand saving” innovations for ‘VIM’ Plastic Coating and ‘Pears’ soap whilst developing expertise in detergent formulation development and design. Girish’s early education was in the Netherlands, with undergraduate and postgraduate degrees from Imperial College, London, and a post-doctoral assignment at UC (San Francisco).

Thanks & Regards,
Anand Mohan, Course Instructor (CH50006)