

Introduction & Background

- With wide experience of 21+ years of teaching, 15 years in industry with consultancy, he is awarded with the prestigious Bharat Shiksha Ratna Award 2014 at New Delhi for his pedagogical innovative implementations.
- He has been on the panel of many companies as Technical Advisors, which includes majors as L&T Chiyoda, Jacobs, Honeywell, Libra Tech, Lahmayer, KFO Saudi Arabia, Noe21 Geneva Switzerland, cBalance etc. He has published three books and 59 research papers at various forums.
- He is Certified Energy Auditor by Bureau of Energy Efficiency, Union Ministry of Power, Government of India. This certification authorizes for Energy Auditing of companies across many industry sectors.
- He perceived Ph.D. in Chemical Engineering

Functional Tool Expertise:

Simulation

Aspen Plus, HYSYS, Aspen capital cost estimator, Aspen Flarenet, Aspen EDR, HTRI, Honeywell's UniSim, OLGA, process engineering

Core expertise & Experience Summary

- BioCNG production by using second generation biofuels and further production of Bio Petroleum products: India's first affordable plant
- **Green Hydrogen:** Affordable and efficient way to produce Green Hydrogen from mixed biomass at a price under USD2. Green Hydrogen Policy suggestions implemented. In active participation with TERRE Policy Centre Pune for Carbon Neutrality, Net Zero methodologies for sustainability.
- **Advanced Process Modeling, Simulation and Optimization:** Usage of modular Simulators viz Aspen Plus, HYSYS, **Aspen capital cost estimator**, Honeywell's UniSim, ChemCAD, OLGA etc. Worked extensively with various simulators in Aspen ONE suite. Carry out Steady state as well as Dynamic simulations using above tools along with advanced process control applications.
- **Capital Cost Estimation for Refinery Operations**
 1. **Capital Cost Estimation for Refinery Operations** CDU, VDU, FCCC and HC Using Aspen Capital Cost Estimator
 2. **Cost Estimation for Lube Oil Refining** and Separation Using Aspen Capital Cost Estimator
- **Heat Exchanger Designs:** Heat Transfer Operations, Heat Exchanger Designs, Heat Exchange Networks, Heat Recovery Systems, Applications of HTRI software for Heat Exchanger Design of Shell and Tube/ Plate/ Double Pipe Heat Exchangers
- **Reactor Design and Optimization:** Reaction Engineering, Catalysts, Reactor Design, Optimization, use of advanced simulators for solid reactions, coal and biomass gasification. Used Fluent for CFD modeling of reactors.

Project summary:

1. Optimization of Ethylene Oxide Plant-IPCL, MGCC, Nagothane.
2. Process Integration of Butene-1 (Part of Poly Propylene Plant)-IPCL
3. Analysis, Modeling, and Simulation of Bio-fuels for Energy Optimization
4. Extraction of Anti-diabetic components from Natural Herbs
5. Modeling of trans-esterification of Bio-diesel using Ethanol
6. CFD analysis of Ethylene Oxide Reactor- IPCL
7. Techno feasibility analysis of converting MTBE plants into ETBE plants- Jubilant
8. Optimization of Vinyl acetate monomer plant- Jubilant Organosys, Nira.
9. Design and Scale-up of Urea Fertilizer Manufacturing Plant- RCF, Thal
10. Sequencing of Distillation Column- Programming Approach
11. Heat Exchanging Network Analysis
12. Parametric Optimization of Solvent Recovery Column in Refinery
13. Modeling and Simulation of IGCC Power Plants: NTPC
14. LPG Recovery from LNG Processes-GAIL, Vijaipur
15. Optimization of 250 MW Power Plant
16. Optimization of Refinery Capital Expenditure Using Aspen Capital Cost Estimator

Professional Certifications:

- He is a Certified Energy Auditor by Bureau of Energy Efficiency, Union Ministry of Power, Government of India
- This certification authorizes for Energy Auditing of companies across many industry sectors. Optimization of Energy Resources, Utilization and Recycle as thrust area.
- PGDBM by Welingkar Institute of Management Development and Research, Mumbai
- Quality Coordinator (previous MR) and Internal Auditor for ISO 9001:2015 QMS
- Empanelment on AICTE, NBA, MHRD, Pune University committees
- Research Expert Reviewer of GTU Gujrat, VTU Karnatak, IIT Vijaywada AP
- Certified Professional from L&T Chiyoda; Distance Council of India, New Delhi
- International Educator Certification by IUCEE and IGIP, Austria 2023
- PG Diploma in Data Analytics

Education:

1. Ph.D Chemical engineering
2. M.Tech Chemical engineering
3. B.Tech Chemical Engineering