

ChemBioSys Group

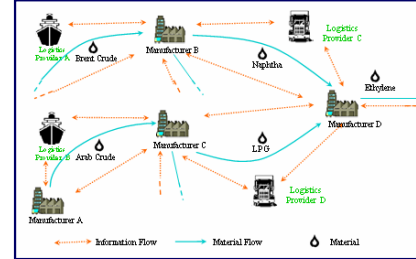
Research Areas

from Chemical Process Engineering to BioSystems Engineering



Enterprise Optimization

(Karimi, Srinivasan)

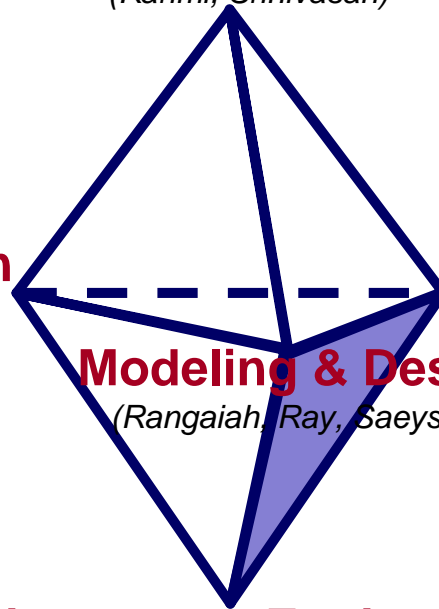


Control & Supervision

(Chiu, Karimi, Krishnaswamy, Laksh, Rangaiah, Srinivasan)

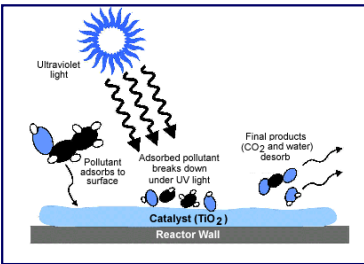
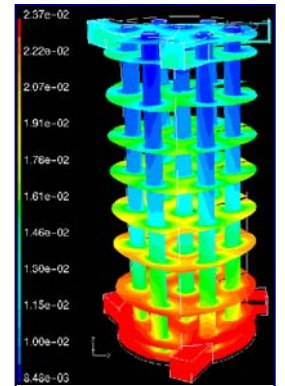
Green Engineering

(Laksh, Saeys, Srinivasan)



Modeling & Design

(Rangaiah, Ray, Saeys, Ti)



Biosystems Engineering

(Chiu, Laksh, Rangaiah, Srinivasan)

Ongoing Projects

Enterprise Optimization

- Refinery planning & scheduling
- Global chemical supply chains
- Chemical shipping & logistics
- Disruption management
- Pharmaceutical supply chains

Green Engineering

- Cleaner combustion
- Reduced emissions
- Life Cycle Analysis
- Waste minimization studies
- Inherently safer processes

Modeling & Design

- Engineering of Chemical Processes
- *Ab initio* Multi-scale Modeling
- Nonlinear systems analysis
- Dynamic simulations
- Band-Engineered Photocatalysis

Biosystems Engineering

- Systems biology & Bioinformatics
- Physiological Modeling and Control
- Design of Experiments
- Control of drug release systems
- Modeling of protein-protein interactions

Control & Supervision

- Control loop performance assessment
- Control of hybrid processes
- Batch operations monitoring & diagnosis
- Plant-wide control
- Nonlinear and fuzzy control

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ChemBioSys @ NUS

Engineering Systems from Molecules to Multinationals

