

TANYA MOHAN

Email: tanyamohan@tamu.edu

EDUCATION

Texas A & M University, College Station, TX

Master of Science in **Chemical Engineering (GPA 4.00/4.00)** December, 2005

- o Emphasis on Process design, integration and optimization using computer simulations
- o Graduate researcher in Process Control Group
- o Certificate in Business Administration
- o Dow Chemical Endowed Fellowship and CHE Scholarship, 2003-2005

Thapar Institute of Engineering & Technology, Punjab, India

Bachelor of Engineering in **Chemical Engineering (GPA 3.77/4.00)** May, 2003

- o Outstanding Student Award, 2000-2003 (Rank: 1/60)
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EXPERIENCE

• Texas A&M University, College Station, TX

Process Optimization and Integration Group

Mar 04-present

Thesis Research Work

- o Developed environmental-biocomplexity based model to mitigate 92.8% emissions for biomass to energy pathways via process optimization and integration.
- o Developed algebraic approach for targeting biomass cogeneration potential. Reduction of 50% in offset subsidy.
- o Optimized Power Generation Cost to 1.6 cents/kWh for 10% biomass cofiring using mathematical programming technique.
- o Reengineered allocation strategies for proper resource allocation to reduce emissions and cost.

Process Systems Engineering

Dec 04-present

Graduate Researcher

- o Developed Aspen Plus chemical process models for various inorganic and organic chemicals for a US Department of Energy funded project.
- o Analyzed the inefficiencies of energy intensive processes via exergy analysis using the developed models for 50 most common chemicals.

Process Integration Laboratory

Oct 03-present

Chemical Engineering Projects

- o Synthesized and optimized separation network for 98% water recovery using thermal membrane distillation and ion-exchange system for desalination of coal bed methane produced water at a cost of 25.23 cents/barrel for Watergy Produced Water Services, Inc., Colorado.
- o Evaluated techno-economic aspects of brine drying along with heat integration.
- o Established integrated approach for 80% water recovery to optimize water usage and discharge in pulp and paper plants.
- o Designed and integrated water network to reduce water usage by 88% and eliminate waste discharge in Chlor-Alkali Membrane Process.
- o Surveyed processes for the selective synthesis of o-alkylated phenols and anilines for a donation project by DuPont Chemicals.
- o Tutored 2 fourth year BS Chemical Engineering Students in Process Integration Techniques.

Mays Business School

Jun 04-May 05

Management Projects

- o Worked in a team of 7 members on Managerial SWOT Analysis of H.E. Butt Grocery Company.
- o Analyzed 2003 PepsiCo, Inc. financial statement for business and personal financial decisions.

- **Punjab State Council for Science & Technology, Chandigarh, India** Jul-Dec 02
Engineering Intern
 - Designed venturi, spray and packed scrubbers with 97% efficiency to minimize pollution in galvanizing units. Developed software for these designs.
 - Evaluated techno-economic performance of ethyl alcohol and hexane for rice bran oil extraction.
 - Optimized pellet size to 9 by 13mm for rice-bran oil extraction time reduction to 120 minutes.
 - Proposed dust containment system for suppression and prevention of air pollution by stone crushing units.
- **Pfizer Limited, Chandigarh, India** Jun-Jul 01
Intern
 - Studied the processes of fermentation and clarification, for the production of two pharmaceutical products tetracycline and salinomycin. Worked on wastewater treatment and monitoring of effluents.

PUBLICATIONS

- Qin, X., **Mohan, T.**, El-Halwagi, M., "Switchgrass as an Alternate Feedstock for Power Generation: Integrated Environmental, Energy and Economic Life-Cycle Analysis", In press (Journal of Clean Technologies and Environmental Policy)
- **Mohan, T.** and El-Halwagi, M., "An Algebraic Targeting Approach for Effective Utilization of Biomass in Cogeneration Systems through Process Integration", In press (Chemical Engineering Communications)
- **Mohan T.** and El-Halwagi, M., "Optimization and Allocation of Biomass Electricity Production Pathways and Economics", In review

TECHNICAL PRESENTATIONS

- Integrated Environmental, Energy and Economic Life-Cycle Analysis of Biomass for Energy, Sigma Xi Symposium on Science and Engineering for Sustainable Development, College Station, TX, March 31, 2005
- Biomass for Tomorrows Energy and Greenhouse Gas Management Needs: An Economic Engineering and Environmental Appraisal, Presented for Site Visit of Reviewers from Industrial Agricultural Products Center, College Station, TX, May 11, 2005.

COMPUTER SKILLS

- **Programming Languages:** C, C++, BASIC
- **Applications:** Aspen Engineering Suite, Hysis, MatLab, Maple, Lingo, Solid Works, SPSS, Polymath, MS Office, AutoCAD R2000, Photoshop
- **Operating Systems & Web Programming:** Windows 9x/2k/NT/ME/XP, Unix, MS DOS, HTML, Dream weaver

AWARDS AND MEMBERSHIPS

- **National Merit scholarship**, Government of India, 1997-1999
- The Honor Society of Phi Kappa Phi, TAMU Chapter
- International Graduate Student Association

LEADERSHIP SKILLS

- Finance Secretary, Association of Chemical Intellectuals & Developers, India, 2001-2003
 - Organized poster and collage competitions
 - Collected sponsorships for first issue of departmental magazine 'Catalyst'
 - Organized inter discipline quiz contest
- Student Secretary, Indian Institute of Chemical Engineers (IIChE)
 - Organized presentations and events from industrial representatives