

CHINMAY PATHAK

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EDUCATION

Master of Science, Chemical Engineering
Rutgers, The State University of New Jersey
Cumulative **GPA 4.0/4.0**

2012-2015
New Brunswick, NJ

Bachelor of Technology, Chemical Engineering
Visvesvaraya National Institute of Technology (VNIT)
Cumulative **GPA 8.75/10**

2007-2011
Nagpur, India

RESEARCH PROJECTS

CURRENT PROJECTS

Characterization of Hetero-aggregates of alginate microparticles and chitosan nanoparticles using fluorescence spectroscopy

MS Thesis, Advisor: Dr. Nina Shapley

- Quantify interaction regime boundaries (dispersed vs. aggregated morphologies) using a novel fluorescence spectroscopy technique
- Examine effect of varying pH values as well as alginate concentration on interaction regime boundaries
- Developed protocol for accurate measurement and sample preparation resulting in highly reproducible data

Axial Dispersion in Rotating Cylinders for Single and Binary Systems

Engineering Research Center for Structure Organic Particulate System (ERC-SOPS), Rutgers

- Studied and established relation between flowability and bed behavior (cascading, cataracting, centrifuging) for Acetaminophen, Lactose Monohydrate and MCC
- Determined axial dispersion coefficient from concentration versus axial position profiles measured for a series of time points

PREVIOUS PROJECTS

Determination of size and charge density of surfactant micelles

Rutgers University

- Evaluated effect of surfactant addition on particle size distribution and zeta potential of zein protein particles in aqueous solution.
- Identified best surfactant resulting in reduced particle size from 1200 to 200 nm.

Development and Characterization of Novel Insulation Material Using Industrial Waste

Thesis Project, Advisor: Dr. Sachin Mandavgane

- Developed effective insulating material with thermal conductivity 0.16 W/m.⁰K.
- Applied to pipes obtaining temperature difference of 20⁰C across insulation layer.

SKILLS

Laboratory Skills

- Nanoparticle Synthesis, Polymers/Biopolymers characterization, Emulsification
- Particle mixing, wet sieving, powder handling
- Proficient in Fluorescence Spectroscopy, Laser Diffraction Scattering Particle Size Analyzer, UV-Vis Spectroscopy, Zeta sizing, pH meter, FTIR

Technical Skills

- AutoCAD, MATLAB, MINITAB, Polymath, ChemCAD, ProPipe
- Design of Experiment, ANOVA
- Heat Exchanger Design, PFD, P&ID

Professional Skills

- Ability to work Independently, detail oriented and organized
- Strong inter-personal and teamwork skills
- Demonstrated leadership and management skills

WORK EXPERIENCE

Rutgers Dining Services, New Brunswick

05/2013-05/2014

Student Meal Manager

- Supervised student workers ensuring proper dining room set up, clean-up and shut down
- Trained new workers on responsibilities and procedures
- Developed and maintained positive work environment

Bharati Web Pvt. Ltd, Nagpur

08/2011-07/2012

Management Trainee

- Administered client communications and social media editing
- Managed social media platforms of company increasing Facebook page likes over 100,000 thereby improving company's cyber presence and user awareness.

Satyan Consulting Engineers, Pune

05/2010-06/2010

Engineering Intern

- Analysed PFD's, P&ID's, Floor Plan, Plant layout
- Introduced to ChemCAD, ProPipe.

TEACHING EXPERIENCE

Visvesvaraya National Institute of Technology, Nagpur

Tutor

- Tutored sophomore students for subject Fluid Mechanics
- Conducted problem solving sessions for subject Chemical Process Calculations

PRESENTATIONS & PUBLICATIONS

- "Application of recycle paper mill waste as thermal insulator for engineering applications", 30th National Convention of Chemical Engineers on the theme "Recent Trends In Research, Development and Innovations in Chemical Industries", NIT Agartala, India
- "QSPR Studies on Viscosities of Aromatic compounds", 63rd Annual Session of Indian Institute of Chemical Engineers CHEMCON-2010, Annamalai University, Chennai, India
- "Viscosity co-Relation of Coolant with Temperature", International Conference on Challenges and Application of Mathematics in Science and Technology, NIT Rourkela, India

RELEVANT COURSEWORK

- Advanced Transport Phenomena
- Advanced Chemical Engineering Thermodynamics
- Analytical Methods in Chemical and Biochemical Engineering
- Kinetics, Catalysis, Reactor Design
- Statistical Analysis and Design of Pharmaceutical Operations
- Pharmaceutical Process Design
- Introduction to Colloid and Interface Science
- Pharmaceutical Material Engineering

EXTRACURRICULAR ACTIVITIES

- Member of core organizing committee of IIES-2011, International conference organized by MNRE (Ministry of New and Renewable Energy, Govt. of INDIA)
- Member of core organizing committee of AXIS, Technical Festival Of VNIT
- Won 2nd prize in STIRLING ENGINE Model Making Competition at VNIT, Nagpur.