Anusha Agnoor

ana114@pitt.edu | (412) 518-9082

EDUCATIONAL QUALIFICATION

University of Pittsburgh | M.S. in Chemical Engineering (Aug 2016 – Present) | **G.P.A** – 3.94/4
Relevant Coursework – Fundamentals of Reaction Processes, Mathematical Methods in Chemical Engineering, Polymer Engineering, Fundamentals of Micro and Nano Manufacturing, Engineering Management, Biodegradable Alloys
IIT Bombay | Bachelor of Chemical Engineering (2012 - 2016) | **Core Aggregate** – 73.8 %
Relevant Coursework – Process Control, Chemical Process Design, Process Equipment Design & Economics, Mass Transfer Operations, Process Fluid Mechanics, Material Science, Numerical Analysis, Colloid Engineering

WORK EXPERIENCE

Photochlorination of PVC in High Pressure CO_2, University of Pittsburgh   Jan 2017 – April 2017
Graduate Research Assistant | Guide : Prof. Robert Enick
• Worked on proof of experiment to demonstrate a waterless alternative for making CPVC. Specifically worked on photochlorination of PVC in a reactor that is hydrostatically full of a single-phase high pressure liquid or supercritical fluid phase composed of CO_2, chlorine and hydrochloric acid generated during reaction
• Analyzed suspension of PVC in CO_2 and optimized temperature, pressure values with marine impeller rpm results to get the best operating conditions for suspension

Thermodynamic Properties of Fluids, University of Paderborn, Germany   May 2016 – July 2016
Research Intern | Guide : Prof. Jadran Vrabec
• Performed acoustic measurements on Novec-649, an engineering fluid that allows for a fast and convenient access to the speed of sound. Analyzed temperature and pressure variations for waveforms and developed respective gaussian distribution functions using MS Excel. Measured ultrasonic speed of sound was used to develop equation of state and to determine a number of thermodynamic properties of organic liquids at high pressures
• Analyzed results using REFPROP to correlate experimental and theoretical results

Optimization of Fluorosilane Coatings, University of New South Wales, Australia   May 2015 – July 2015
Research Intern | Guide : Prof. Jayashree Arcot
• Worked on optimization of fluorosilane coating on nanocellulose composite films to improve hydrophobicity on developing biodegradable food packaging material from agricultural waste like banana pseudo stem
• Worked on Optical Tensiometer and achieved superhydrophobicity using nanoparticles like nanoclay and graphene. Analyzed statistical data for optimization using software called IBM SPSS Statistics

Study of Polymer CharacterizationTechniques, Council of Scientific & Industrial Research   May 2014 – July 2014
Industry Intern | Guide : Dr. Kvsn Raju
• Analyzed characterization techniques of functional polymers such as transmission electron microscopy, differential scanning calorimetry, dynamic mechanical analysis and thermogravimetric analysis
• Studied different spectroscopic techniques like nuclear magnetic resonance spectroscopy (NMR), fourier transform infrared spectroscopy (FTIR) and developed hydrophobic silane and epoxy coatings in association with Asian Paints

ACADEMIC PROJECTS

Process control and Simulation, IIT Bombay
• Worked on three stirred tanks and a long pipe mixing system in series and developed transfer functions based on SISO and MIMO requirements
• Implemented feedback, feedforward, cascade controllers to the system and evaluated output for different inputs using SIMULINK and designed different controllers (P/PI/PID) using Direct Synthesis and Zeigler Nichols methods
• Analyzed best controller performance based on settling time, over shoot and other parameters
Methanol Sensors, IIT Bombay
• Proposed a sensor alarm arrangement to detect methanol vapors in biodiesel chemical plant as blindness and CNS depression are subsequent manifestations of methanol toxicity
• Calibrated MQ-3 gas sensor which has high sensitivity to alcohol vapours and worked on Figaro gas sensor, as it is prominently featured in gas detection equipment. Both the sensors are incorporated in the pilot chemical plant of IITB
Student Project Biosynth: Biodiesel Plant, IIT Bombay
• This project involves production of Bio-Diesel from waste vegetable oil and finally tested on institute motor vehicles
• Performed esterification, trans-esterification experiments, mass calculations, carried out free fatty acid tests and analyzed different operating parameters of the pilot plant. Studied various optimal control problems in biodiesel production in a reactor under uncertainty using MATLAB and used Runge Kutta methods for optimization

TECHNICAL SKILLS

Programming – MATLAB, MS Office, Python, C++, REFPROP, IBM SPSS Statistics
Management Skills – Six Sigma, Decision Analysis, Project Management, Cost Management, Lean Manufacturing