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) | Aggregate – 69%
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 – Present**
Graduate Research Assistant | Guide : Prof. Robert Enick
• Currently working on proof-of-experiment to demonstrate a waterless alternative for making CPVC. Specifically working 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 (rather than water), chlorine and hydrochloric acid generated during reaction
• Advantages for using carbon dioxide as a carrier liquid include ease of removal of CO_2 and HCl, miscibility with chlorine and HCl to form a single fluid phase mixture and minimal effect on PVC and CPVC resin

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. 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, a database software used in scientific research

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 a software called IBM SPSS Statistics

ACADEMIC PROJECTS

Artificial Neural Networks (Machine Learning), University of Pittsburgh
• Worked on back propagation algorithm of artificial neural networks which is majorly employed in medical streams
• Analyzed binary input and output training data using multi-layer neural networks approach through error minimization technique. Implemented the algorithm using Python and achieved negligible error in the results

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

TECHNICAL SKILLS

Programming – MATLAB, MS Office, Python
Management Skills – Six Sigma, Decision Analysis, Project Management

LEADERSHIP SKILLS

• **Organizer, Technical Festival of IIT Bombay –** Techfest is the annual science and technological festival of IIT Bombay. Managed events at the exhibitions section, where people from various organizations display their products/robots. It helped me improve my leadership skills
• **Group Head, Bio-Subsystem, University Rover Challenge (URC) –** URC is an annual international competition hosted by Mars Society for university and college students. Managed the timelines of the bio-subsystem for University Rover Challenge (URC) and responsible for strategic planning of team work