

SAURABH PATHAK

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CAREER OBJECTIVE

I wish to avail a full time Chemical Engineering position to utilise my knowledge and skills in chemical engineering to have steady growth of my career. This shall also give me an opportunity to increase my knowledge, experience and skills in chemical engineering and develop sustainable and environmental-friendly processes and products.

EDUCATION

- **Master of Advanced Chemical Engineering** **Feb 2018 to Dec 2019**
Monash University, Clayton, Australia
CGPA: 2.350 (on the scale of 4)
WAM: 66.688
- **Bachelor of Chemical Engineering** **Jun 2012 to May 2016**
K. K. Wagh college of Engineering, Education and Research, Nashik, India
(Affiliated to Savitribai Phule Pune University)
Average Percentage: 71.25% (for all the 8 semesters)
Average First class with Distinction grade in all the subjects from first year of engineering.

ONLINE COURSES

- **Catalytic conversions for bio-based chemicals and products** **Feb 2020 to till date**
Prof. Harry Bitter, Dr. Marian Vermue, Prof. Hauke Smidt
University of Wageningen, Netherlands.
Topics considered in the course:
 1. Basics of chemical conversions, microbial conversions, reactor design
 2. Synthesis of heterogeneous catalysts, selection of microbial catalysts, catalyst performance
 3. Reaction kinetics, reaction kinetics and deactivation, preventing thermal deactivation
 4. Catalyst characterisation, strain engineering, towards improving reaction rates, conversion in heterogeneous catalysts.

WORK EXPERIENCE

- **Intern at CRODA INDIA CHEMICALS Limited, Thane, India** **Jun 2015**
Croda India Chemicals is one of the leading producers of speciality chemicals in various fields such as agrochemicals, oleochemicals, lubricants and others
 - Worked on the 'Gap Assessment against RPF and other published standards for High Hazard Chemicals' under the guidance of Mr. Bharat Mudgal, Technical Manager.
 - Critically assessed the storage tanks for hazardous chemicals such as Liquid Ammonia, Formaldehyde, Sulphuric acid and others present in the company and compared them to the Indian Standards, HSE and OSHA by consideration of various parameters including Material of construction, Instrumentation, storage conditions, reactivity of the chemical and others.
 - Suggested the changes needed in the storage tanks based on the condition of the storage tanks present in the company to that recommended by the standards.
 - Participated in the fire safety training program and mock-drill of the emergency fire safety procedures.
 - *Skills Utilised: Critical thinking, Communication skills, Problem solving skills, Interpersonal skills, Team work.*
- **Intern at ANANT METALS AND FINISHERS, Nashik, India** **Jun 2014**
Anant Metals and Finishers is one of the established companies in the sector of Tin, Copper and Zinc Electroplating.

- Worked on the process of coating products such as mechanical fasteners and other intricate machine parts coated by zinc coating, copper coating and tin coating process under the guidance of Mr. Chetan Patil, CEO, Anant metals and finishers.
- Critically assessed and worked on the 12 Tank process, the pre-treatment procedure needed to make the machine parts ready for the actual electroplating process. Also worked on the temperature, pH and the selection of acid at various stages of the 12 Tank process.
- Also, briefly assessed the hazardous chemical treatment procedures (effluent treatment process) and compared it with the recommended standards and suggested changes.
- *Skills Utilised: Critical thinking, Problem Solving skills, Interpersonal skills, Communication skills*

UNIVERSITY PROJECTS

- Studying the interaction of lysozyme protein with silica surface for biosensing** **Feb 2019 to Nov 2019**
 - This project was done as a part of ENG 5005 and ENG 5006 units of the Masters of Advanced Engineering course of Monash University under the guidance of Prof. Dr. Parama Banerjee, Lecturer, Department of Chemical Engineering, Monash University.
 - The interaction of 5 wt.% lysozyme protein with silica nanoparticle surface at pH 5, 7 and 9 was studied using SasView Software.
 - The decrease in the interaction of lysozyme protein with silica nanoparticle surface with the increase in pH was successfully verified using core-shell ellipsoid, hardsphere model and Levenberg-Marquardt optimiser of SasView software.
 - Best fit for the experimental set of data of interaction of lysozyme protein with silica surface was successfully obtained using core-shell ellipsoidal model.
 - *Skills Utilised: Data Analysis, Critical thinking, SasView Skills, Teamwork, Interpersonal Skills*
- Designing and producing calf protection pads for soccer players.** **Feb 2019 to Nov 2019**
 - This project was undertaken as ENG 5004 and ENG 5005 units of Masters of Advanced Engineering course of Monash University under the guidance of Prof. Kathy Petkoff, Lecturer, Department of Mechanical Engineering, Monash University.
 - Two different medium sized designs- Velcro and slip-on type of calf protection pads were designed using Non-Newtonian fluid-based material D3O.
 - It is estimated from the impact test conducted that this calf protection pads transmits only a 20% of the incident impact energy. 80% of the incident impact energy is absorbed by the material.
 - Comfort test conducted on players also concluded the effectiveness of pads.
 - *Skills Utilised: Critical thinking, Communication skills, Team-work, Interpersonal skills*
- Pet Minding Application Project** **Jul 2019 to Nov 2019**
 - This project formed the part of ENG 5002 unit of Masters of Advanced Engineering, Monash University completed under the guidance of Prof. Kathy Petkoff, Lecturer, Department of Mechanical Engineering, Monash University.
 - Involved formation of Business Model for pet minding business
 - This also involved the formation of value proposition canvas, market survey for the viability of the business along with financial viability of the business.
 - This also involved consideration of the competitive landscape, promotional criteria, deciding price of the product.
 - *Skills Utilised: Critical thinking, Problem solving skills, Teamwork, Interpersonal skills*
- Production of Ethanol from waste sapota** **Jun 2015 to May 2016**
 - This project formed the part of final year of Bachelor's degree successfully completed under the guidance of Prof. Gaurav Daware, Assistant Professor, K.K.Wagh College of Engineering, Education and Research.
 - Ethanol was produced using waste sapota as a raw material using α -amylase and *saccharomyces cerevisiae* (baker's yeast) as a fermentation agent. Ethanol was procured from the fermentation mixture using simple distillation.

- The yield of ethanol of ethanol was found to be around 30% but with a very less purity of ethanol around 10%.
- This low purity of ethanol can be due to the of lack of proper environment and equipment's however, it was concluded that waste sapota is a promisable raw material due to its high sugar content, especially in countries like India where it is produced in large quantities.
- Skills Utilised: *Team work, Communication skills, Problem solving skills, Critical thinking, Interpersonal skills*

- **Production of oil from Marjoram plant**

Jun 2014 to May 2015

- This project also formed the part of completion of Bachelor's degree and was successfully completed under the guidance of Prof. Sachin Shinde, Assistant Professor, K.K.Wagh college of Engineering, Education and Research.
- Marjoram plant is a small flavoury herb grown in kitchen gardens planted abundantly in India and the oil obtained from plant serves an important purpose in pharmaceutical industry.
- Steam Distillation followed by batch extraction using hexane was used to produce oil.
- The yield of oil was less as compared to that found in the literature. This may be due to the lack of proper pre-treatment necessary to access the oil content in plant.
- Skills Utilised: *Critical Thinking, Communication skills, Interpersonal skills, Problem Solving skills*

PROFESSIONAL AFFILIATIONS

- Student member of AIChE (American Institute of Chemical Engineers)
- Student member of IChE (Indian Institute of Chemical Engineers)
- Student member of Society for Biological Engineering (An AIChE Technological Community)

SKILLS

- Proficient English communication skills
- Proficient in MS-Office
- Good Aspen Plus Simulation skills
- Better SasView, Polymath and MATLAB skills
- Experience on working on ValSpeQ software- A software used to design valves.
- Good leadership qualities
- Comprehensive problem-solving skills
- Ability to accept responsibilities and deliver the desired results
- Ability to deal with people diplomatically

ACHIEVEMENTS

- Successfully completed the following modules of Leap into Leadership (LiLO) Programme, a self-paced online course to develop employability and leadership skills of Monash University
 - Time Management and Prioritisation
 - Connecting Across Cultures
 - Creativity and Innovation
 - Goal Achievement
 - Communicate with Impact
 - Event and Project Management
 - Professionalism and Career Skills
 - Personal Brand
 - Strategic Thinking
- Won a scholarship of INR 5000 for achieving second position in Second Year of Bachelor of Chemical Engineering (year 2013-2014) at K.K.Wagh college of Engineering, Education and Research.
- Participated in the **Poster Presentation of Chemcoalesce 2K15**, a National level symposium organised by Sir Visvesvaraya Institute of Technology, Nashik.
- Participated in the **paper presentation in ChemFest- 2K15**, a National level symposium organised by K.K.Wagh Institute of Engineering, Education and Research.
- Participated in the **organisation of ChemFest-2K16**, a National level symposium organised by K.K.Wagh Institute of Engineering, Education and Research.

- Participated in the **organisation of ChemFest-2K15**, a National level symposium organised by K.K.Wagh Institute of Engineering, Education and Research.
- Successfully completed **C and C++ training program** organised by Training and Placement Cell of K.K.Wagh Institute of Engineering, Education and Research.
- Successfully completed **German language A2** course (Goethe-Zertifikat A2) conducted by Goethe Institute, Max Muller Bhavan, Mumbai.
- Successfully passed **German language A1** course (Goethe-Zertifikat A1) conducted by Goethe Institute, Max Muller Bhavan, Mumbai.
- Stood at third position in class X and won a scholarship of INR 2000 at Nashik Education society, Nashik

EXTRA-CURRICULAR ACTIVITIES

- **Part-time Sales Assistant at David Jones, Men's Store, Bourke Street, Melbourne** **Nov 2018 to till date**

David Jones is one of the finest Australian brands for men's and women's clothing.

MY DUTIES AND RESPONSIBILITIES

- Communicating with the customers to know their choice.
- Helping the customers to find their right choice of clothing.
- Managing the financials.
- Anchored various university level program such as university festivals and other cultural programmes.
- Participation in various cultural events involving philosophical events and debates.

VOLUNTEERING

- **Student Ambassador for Monash Borrow Cup Initiative** **Jun 2019 to till date**
Borrow cup is a sustainability initiative at Monash University of replacing single use, disposable cups by reusable cups at Monash University campus.

MY DUTIES AND RESPONSIBILITIES

- Campaigning at various cafes on Monash University campus for the use of Borrow cup.
- Communicating with Monash University students of the Borrow Cup Initiative.
- Communicating with the Monash University staff about the Borrow Cup Initiative.
- Attending various club parties and campaigning about the initiative.
- **Volunteering at MSA (Monash student Association)**
Monash student association is a representative body in Monash University, Clayton Campus working for serving and protecting student interests.
 - **Monash University Clayton Campus Tour guide and directions.** **Aug 2018**
 - Preparing Monash University Clayton Campus Tour guide which includes all the important locations on the campus
 - Preparing direction guide to access various locations on the clayton campus.
 - Shooting the locations and directions to access these locations.
 - **Monash University Clayton Campus Tour Leaders** **July 2019**
 - To guide a group of students to show various locations on the Monash University Clayton Campus in the orientation week.
 - Interact with the students to know their interests and make them familiar with their interested location on the university campus.

HOBBIES

- Sketching
- Reading
- Travelling
- Philately

REFERENCES

- **Mr. John Westover**
Lecturer, Department of Chemical Engineering

Monash University, Clayton, Australia
Email: John.Westover@monash.edu

- **Dr. Andrew Hoadley**
Associate Professor, Department of Chemical Engineering
Monash University, Clayton, Australia
Email: Andrew.Hoadley@monash.edu
- **Prof. Dr. Venkat. S. Mane**
Professor and Head of Department
Department of Chemical Engineering
K.K.Wagh College of Engineering, Education and Research, Nashik
(Affiliated to Savitribai Phule Pune University)
Email Address: vsmane@kkwagh.edu.in

DECLARATION

I hereby declare that the above written particulars are true to the best of my knowledge and belief. And all the true copies can be produced upon request.

Date: 01 April 2020

Place: Melbourne

Signature: **SAURABH NITIN PATHAK**