DR. ANJU A. INGLE

PH.D (CHEMICAL ENGINEERING)

Department of Chemical Engineering,
Institute of Chemical Technology Mumbai,
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PERSONAL STATEMENT

I aspire to work in a challenging and dynamic environment that offers opportunities for growth and learning, while allowing me to make a positive impact in the field of chemical engineering.

EDUCATIONAL QUALIFICATIONS

Degree	Year of completion	University/ Board	Percentage/CGPA
Ph.D. (Chemical Engg.)	Aug 2021	VNIT, Nagpur	-
M.Tech. (Chemical Engg.)	Aug 2013	UICT, NMU, Jalgaon	7.3
B.Tech. (Chemical Engg.)	July 2010	JDIET, Yavatmal	60.15
Diploma (Chemical Engg.)	June 2005	MSBTE, Mumbai	63.28
SSC	June 2001	State Board	64.66

RESEARCH AND PROFESSIONAL EXPERIENCE

1. Research Fellow (Aug 2022-Present)

Department of Chemical Eng. Institute of Chemical Technology Mumbai, Marathwada Campus, Jalna

Highlights/Task

- Working on Department of Science and Technology (DST), National Supercomputer Mission (NSM), Parambrahma IISER Pune, funded project on Multiscale modeling of deep eutectic solvent promoted enhanced oil recovery.
- First principal calculation of DES-SARA system using Quantum Espresso software.

2. Research Asst. (10 Months)

INSTITUTE OF CHEMICAL TECHNOLOGY (MUMBAI)

03/2014 – 12/2014

Job Highlights/Task

- Working under Centre of Excellence in Process Intensification, TEQIP-II scheme on the project of "Design aspects of two opposed jet microextractor: Experimental and Computational Fluid Dynamics".
- Collection of experimental data for extraction processes and modeling of data for validation. Handling proposal and project management activity.
- Developed practical knowledge about Computational Fluid Dynamics (CFD), which are considered to be vital areas of chemical engineering process development.

3. Chemical Engineer (8 Months)

STERLING EDUCATIONAL SYSTEM PVT. LTD. (NAGPUR)

01/2011 – 08/2011

Job Highlights/Tasks

- Manufacturing of lab experimental setup for Mass Transfer, Chemical Reaction Engineering, Heat Transfer, Materials Operations, Process simulations and, advanced separation processes.

Ph.D. Thesis

Thesis: Study on catalyst development and kinetics for hydrogenation of 2-ethylanthraquinone in the production of hydrogen peroxide.

- Expertise in Catalytic Processes: Synthesis of various nanocatalyst and microstructure heterogeneous catalysts and its application and characterization.
- Competency in Nanocatalyst: Application of nanohybrid catalysts for hydrogenation process.

PROFESSIONAL TRAINING

SOIL CHEMICALS PVT. LTD, NAGPUR (05/2004 – 07/2004)

- Production of Diethylpthalate (DEP)
- Production of Oxime

ACADEMIC PROJECTS

M. TECH.

TOPIC: Heavy gas dispersion due to the accidental releases from chemical industries and risk assessment using modelling techniques

- It is important to visualize the consequences of the release of hazardous substances and the damage caused to the surrounding area.
- Damage distances due to release of hazardous materials depend on the atmospheric stability classes and wind speed.
- DNV based **PHAST** and **SAFETI** software have been used for consequence analysis, individual and societal risk quantification.
- **RED** Model and **SLAB** Model are used to study the dispersion of heavy gases e.g. Chlorine. Data from available case studies was used to predict the concentration of chlorine.

B. TECH.

TOPIC: Intensification of the Process by using Membrane Technology.

EXTRA CURICULAR ACTIVITY

1. Participated in **STTP workshop** on "Sustainable Trends in Energy and Environment (STEE-2020)" during 06-10th Feb 2021 organized by Department of Chemical Engineering & Technology, Luckow, Uttar Pradesh.
2. Successfully presented an **oral paper presentation** on "Hydrogenation of 2-ethylanthraquinone with Pd supported on hollow ceramic microsphere catalyst: An experimental and kinetic study" in National Conference "NCNE-2020" during 13-14th Feb 2020 at National Institute of Technology, Raipur.
3. Participated in **STNW workshop** on "Advances in Explosive and Propellants" on 17-18th April 2015 organized by Department of Chemical Engineering, VNIT, Nagpur.
4. Participated in **STTP workshop** on "Intensification in Process Industry" on 13th March 2015 organized by Department of Chemical Engineering, VNIT, Nagpur, DRDO & Solar Industries India Ltd.
5. Participated in **STTP workshop** on "Processing and Characterization of Smart Materials" during 04-8th May 2015 organized by Department of Chemical Engineering & Material Science and Metallurgical Engineering 7 Cemistry, MANIT, Bhopal.
6. Participated in **SFSTTP workshop** on "Computational Drug Design using Molecular Docking and Virtual Screening" during 12-14th March 2015 organized by Department of Chemistry, VNIT, Nagpur.
7. Participated in **Seminar** on "MATLAB & Simulink for Engineering Education" on 9/10/2014 organized by Mathworks India Pvt. Ltd. Mumbai.
8. Participated in **Workshop** on "Laboratory Safety Workshop" on 04/09/2014 organized by CoEPI, TEQIP-II and Department of Chemistry, Institute of Chemical Technology, Mumbai.
9. Successfully presented an **oral paper presentation** on "Heavy gas dispersion due to accidental releases from chemical industries using modelling techniques" in National Conference "Greenchem-2013" at

J.D.I.E.T, Yavatmal.

10. Participated in **poster presentation** on "Intensification of the Process by using Membrane Technology" in National Conference on Recent Advances in Chemical Engineering (RACE-2012) organized by University Department of Chemical Technology, Jalgaon.
11. Got **2nd prize** in International karate competition at Nepal (2012).
12. Got **2nd prize** in state level karate competition at Baroda, Gujarat (2008).

PATENTS

1. A hydrogenation catalyst and process thereof, Indian Patent No: 352972, 03/12/2020 (Granted).
2. Cenosphere supported metal catalyst for hydrogenation of 2-ethylanthraquinone in hydrogen peroxide synthesis, Indian Patent No: 387865, 29/01/2022 (Granted).
3. **To be applied to Australian Patent**, "Bimetallic nanohybrid catalyst for hydrogenation process.

PUBLICATIONS

1. Artificial Intelligence Promoted Framework for Selection of Deep Eutectic Solvents Promoted Enhanced Oil Recovery by Interfacial Tension Reduction Mechanism. (Submitted to Chemical Engineering Journal IF: 13.273)
2. A Comprehensive Thermodynamic Modeling for Determining Physicochemical Properties of DES-SARA System. (Submitted to Geoenergy Science and Engineering IF: 5.168)
3. First Principal Modelling of Asphaltene-Deep Eutectic Solvent System for Enhanced Oil Recovery Application, Chemical Thermodynamics and Thermal Analysis (IF: 3.178)
4. Progress and prospective of heterogeneous catalysts for H2O2 production via anthraquinone process, Environmental Science & Pollution Research, 2022. https://doi.org/10.1007/s11356-022-21354-z (IF: 5.223)
5. Performance of Pd Catalyst Supported on Trimetallic Nanohybrid Zr-Al-La in Hydrogenation of Ethylanthraquinone, Int. J. Chem. React. Eng. 2022. https://doi.org/10.1515/ijcre-2021-0271 (IF: 1.510)
6. Synthesis, Characterization, and Application of Hollow Ceramic Microsphere based Pd Catalyst for Hydrogenation of 2-ethylanthraquinone, J. Indian Chem. Soc., 2021, 98:100177. https://doi.org/10.1016/j.jics.2021.100177 (IF: 0.284)
7. Palladium supported on nanohybrid Zr-Al-La catalyst for hydrogenation of 2-ethylanthraquinon, Indian Chemical Engineer, 2021, 64:387-401. https://doi.org/10.1080/00194506.2020.1749141 (IF: 1.091)
8. Hydrogenation of 2-ethylanthraquinone with Pd supported on hollow ceramic microsphere catalyst: An experimental and kinetic study, J. Indian Chem. Soc. 2020, 97:1033-1037. https://doi.org/10.5281/zenodo.5667863 (IF: 0.284)

Co-author research articles

1. Perspective of Reactive Separation of Levulinic Acid in Conceptual Mixer Settler Reactor, Environmental Science & Pollution Research, 2022, DOI: 10.1007/s11356-022-18794-y. (IF: 4.223)
2. Optimizing hydrodynamic forces for gypsum scale removal and analysis through modelling using COMSOL, J. Indian Chem. Soc. 2020, 91:1033-119-1123. (IF: 0.284)
3. Experimental and modeling of reactive separation of protocatechuic acid, Chem. Eng. Res. Des., 132, 2018, 593-605. (IF: 3.739)

Conferences

1. Hydrogenation of 2-ethylanthraquinone with Pd supported on hollow ceramic microsphere catalyst: An experimental and kinetic study, National Conference "NCNE-2020" during 13-14th Feb 2020 at National Institute of Technology, Raipur.
2. Heavy gas dispersion due to accidental releases from chemical industries using modeling techniques, National Conference Greenchem-2013, J.D.I.E.T, Yavatmal, MH, India. (**1st prize**).

SKILLS

- Programming Language – Bash, Python, Matlab
- Operating System – Windows, Linux
- Software – MS Excel, MS PowerPoint, MS Word, MATLAB, Avogadro, ChemDraw, OriginLab, Quantum Espresso, BURAI, Gaussian, MATLAB, ANN, SVM, ANSYS FLUENT, GABI
- Analytical Skills – HPLC, FT-IR, UV, TGA, DSC, XRD, BET, XRF, SEM, PSA, and FESEM
- Language Skills – English, Hindi, Marathi
- Interests and Hobbies – Playing kickboxing and judo karate, Playing Chess & Strategic Games, Travelling

REFERENCE

Dr. Swapnil Dharaskar
Associate Professor & Head
Pandit Dindayal Energy University,
Gandhinagar- 382426, Gujrat
Email- swapnildharaskar11@gmail.com
(Mobile- +91 7600924111)

Declaration: I hereby declare that the particulars furnished herein by me are true to the best of my knowledge and belief**.**

Place: Nagpur

Date: 06/05/2023 **(Anju A. Ingle)**