

Alok Kumar

Final Year, RGIPT | Chemical Engineering Undergraduate |

Male|12/12/2000

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To seek new learning opportunities in the Chemical Sector with an established interest in the operations, production, Process Design, and R&D domains that constantly improve my technical skillset and prove to be beneficial as a whole.



EDUCATIONAL BACKGROUND

COURSE	INSTITUTE	CPI/CGPA/%	YEAR
B.Tech in Chemical Engineering	Rajiv Gandhi Institute of Petroleum Technology	7.92/10* *Till 6 th Semester	2019-2023
XII, (BSEB)	SBAN College	67.80%	2018
X, (BSEB)	Shiv Mudrika H/S Sanda	73.40% (Rank 1)	2016

INTERNSHIP

- **Bayesian Inference of Aqueous Mineral Carbonation Kinetics for Carbon Capture and Utilization**
IIT BHU | *Mentor: Dr. Vijay M Shinde* May 27 – September 27, 2022
 - Applied the machine learning algorithm by using Matlab & Python to develop an optimized model and find out the Operating condition which increases the duration of CO₂ removal rate and the carbonate production rate.
 - Explored various libraries of Python (Pandas, NumPy, Scikit-Learn, Matplotlib.)

PROJECTS/PUBLICATIONS

- **The first Principle studies to understand the electrochemical properties of Mn Based 2D Layers for H₂ Generation.**
Mentor: Dr. M.S. Balathanigaimani and Dr. J. Karthikeyan (Completed B.Tech Project)
 - Analyzed the properties like Structural Stability, Electronic, Magnetic, and Electrochemical using Density Functional Theory.
 - Learned software like VASP, basic Linux commands, and Inkscape.
- **New Proposed Design and process aspect for waste heat recovery from slag granulation and its utilization.**
Mentor: Prof. A.S.K. Sinha and Dr. Deepak Dwivedi
 - Literature survey of waste heat recovery and utilization of different slag mainly from iron and steel industry.
 - The proposed design includes the concept of mechanical activation, magnetic separation, and impact energy.
 - Techno-economic feasibility aspect was discussed for the proposed design with the guide.
- D. Raj, **Alok Kumar**, R. K. Singh, A. S. Bhadouria, A.S.K.Sinha, D. Dwivedi, **Application of Advanced Nuclear Analytical Techniques for the Electrocatalyst's Characterization: Paving the Path for Mechanistic Investigations** [Link](#)
- S.Bhadouria#, **Alok Kumar**#, D. Raj#, A. Verma, S. Singh, P.Tripathi, Y. Kumar, A.S.K.Sinha, N. M. Tripathi, A. M. Yeneneh, D. Dwivedi, **Corrosion Mitigation in Oil Reservoirs during CO₂ Injection using Nanomaterial** (Book chapter, # = Equal Contribution) [Link](#)

ACHIEVEMENTS AND HONOURS

- Selected in **Magadh Super 30** for free IITJEE preparation.
- Secured **All India Rank-15068** in **JEE ADVANCE 2019** among 0.2 million candidates.
- Secured **All India Rank-36832** in **JEE MAINS 2019** among 1.5 million candidates.
- Secured **All India Rank-909** in **WBJEE 2019** among 0.6 million candidates.
- Selected to present at **India International Science Festival (IISF) Conference-2020**, on the Topic: “Bio-Hydrogen Production from Waste Material”
- Awarded by the **Union Minister, Mrs. Smriti Zubin Irani**, for the Business Plan competition on the topic: “3D Printer Manufactured prototype Business Plan”
- Among 640 research ideas nationwide in the “**New Generation Ideation Contest**” (NGIC-2021) by **HPCL: won a commendation prize** for (1) “MgB₂-Aspartic acid (ASP)-Layered Double hydroxide (LDH) as a super corrosion resistance material under CO₂ corrosion condition” idea and (2) “Vitrimer based PDMS coatings for corrosion prevention in Oil & Gas Industries” got selected in the top 30 Idea's.

TECHNICAL SKILLS

- ☐ **Programming Languages:** C, HTML, CSS, Python (Pandas, NumPy, Scikit-Learn, Matplotlib), MATLAB
- ☐ **Software:** Basic Linux, Aspen PLUS, VASP, AutoCAD, MS Word, MS PowerPoint, MS Excel.
- ☐ Machine Learning using Python and Matlab

EXTRA-CURRICULAR ACTIVITIES/PORs

- Student Coordinator | Entrepreneurship Club RGIPT 2021- Present
- Student secretary | Mess Committee 2021
- Student Representative | Hostel Affair Committee, RGIPT 2021
- Treasurer & Senior Membership Head | ACM RGIPT Student Chapter 2020-2021
- Teaching Volunteer | Arpan Social Club, RGIPT 2019-2020
- Runner Up in KHO-KHO in Energia'19 (Annual Sports Fest RGIPT, JAIS) 2019