Nitya Kasera

LinkedIn - Portfolio

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EDUCATION

- **Indore Institute of Science and Technology** **Indore, India**
  Bachelors of Technology [B.Tech.] Chemical Engineering CGPA: 8.7 *September '20- Present*

EXPERIENCES

- **Aditya Birla Group's Grasim Industries, Chemical Division** **Nagda, India**
  Industrial Intern *July' 22*
  - Acquired hands-on expertise in Poly Aluminium Chloride (PAC) production, optimizing plant processes with theoretical knowledge for efficient manufacturing. Proficient in troubleshooting and quality control, actively contributing to enhanced plant productivity.
  - Gained valuable insights into industrial chemical processes, fostering a deeper understanding of PAC production complexities. This experience enriched my skills in operational efficiency and quality management within the industrial chemical manufacturing landscape.

- **Indian Institute of Chemical Engineers** **Kolkata, West Bengal**
  Online Internship *March' 23- April ' 23*
  - Immersed in a dynamic internship at the crossroads of Artificial Intelligence and Machine Learning (AIML) in Chemical Engineering. Implemented AIML algorithms using MATLAB, acquiring hands-on experience in data analysis and optimization.
  - Contributed to innovative solutions, honing skills at the intersection of technology and chemical engineering. The experience enriched my understanding of leveraging AIML for enhanced problem-solving in the field.

- **Indian Institute of Technology Roorkee** **Uttarakhand, India**
  Research Internship *May' 23- July' 23*
  - Engaged in IIT Roorkee's esteemed Spark 2023 Summer Internship/Research Fellowship program, conducting groundbreaking research on silica and lignin extraction from rice straw.
  - Showcased proficiency in agricultural waste utilization, contributing to sustainable materials development. Demonstrated hands-on skills and research acumen in a renowned academic setting.

- **Indian Institute of Technology Indore** **Indore, India**
  Research Internship *September'23- Present*
  - Engaged in a research internship at the SEEM Lab, Department of Metallurgical Engineering and Materials Science, IIT Indore, with a primary focus on supercapacitors. Collaborated with a multidisciplinary team to design and optimize supercapacitor materials, conducted experiments, and contributed to ongoing projects, demonstrating dedication to advancing energy storage technologies.
  - Acquired in-depth knowledge of supercapacitor technology, including material synthesis and characterization techniques. Developed skills in experimental design, data analysis, and problem-solving. Gained insights into the broader applications of metallurgical engineering in energy storage, enhancing my expertise in materials science and contributing to advancements in sustainable technology.

ACADEMIC PROJECTS

- **Extraction of Silica from Agricultural Waste:** Led a groundbreaking academic initiative at IIST's cutting-edge lab, spearheading the pioneering extraction of silica from agricultural waste. Published revolutionary findings in the prestigious IRJET's journal, showcasing unparalleled research acumen. Employed innovative experimental methodologies, underscoring my expertise in materials science. This transformative project not only demonstrated exceptional research skills but also made a significant mark in advancing scientific literature on sustainable resource utilization.
- **Use of Perovskite for Low-Cost Solar Cells with Improved Efficiency:** Pioneering transformative research, I am spearheading the exploration of perovskite's potential for revolutionary low-cost solar cells with unparalleled efficiency. Meticulously surveying literature, our team synthesizes diverse theories, shaping cutting-edge experimentation. Actively crafting a groundbreaking research paper, I am dedicated to propelling the forefront of sustainable energy, demonstrating an unwavering commitment to advancing affordable solar solutions.
- **Synthesis of Magnetite Magnetic Nanoparticles using Watermelon Rinds:** Led an innovative research initiative at IIST's lab, pioneering the synthesis of magnetite magnetic nanoparticles from watermelon rinds. Executed intricate experiments, meticulously characterizing samples. Currently spearheading the development of a groundbreaking review paper, utilizing

collected data to contribute significantly to the forefront of materials science. This exemplifies my hands-on expertise, shaping innovative publications at the intersection of technology and natural resources.

PUBLICATIONS

- N. Kasera, G. Chatterjee, R. Bhargava, Dr. S. Singh, “Alternative Energy and Storage: 2021 to 2025”, 2022 published in the book titled Trends in Modern Technology and Engineering with ISBN 979-8427314886
- N. Kasera, G. Chatterjee, J. Sanskrati, S. Palak, “Synthesis of Nano- Silica from Agricultural Wastes” 2023 published in International Research Journal of Engineering and Technology (IRJET) Volume 10 Issue 9 September 2023
- R. Joshi, N. Kasera, G. Chatterjee, K. Farhin, “Case study of the analogy of the perovskite structures for the improved efficiency for photovoltaics devices” – Under Preparation
- N. Kasera, G. Anika, G. Chatterjee, H. Chandan, K. Farhin “Synthesis of Magnetite Magnetic Nanoparticles from Watermelon Rinds” – Under Preparation
- Co-author in a paper titled “Valorisation of Biomass” - Under Preparation

CONFERENCES AND WORKSHOPS

- Secured the first position in the National Level Technical Paper Presentation organized by the Department of Chemical Engineering at the Indore Institute of Science and Technology. The event was themed 'Innovations in Alternative Energy and Storage (2021-2025).
- Attended and presented my research work in SCHEMCON 2021 Organized by MANIT and IISER Bhopal. The event was themed as Advancements in “Alternative Energy and Storage (2021-2025)".
- Attended and presented my research work in SCHEMCON 2022 Organized by NIT Warangal and IIChe Hyderabad Regional Centre. The event was themed as “Sustainable Technological Advancements in Chemical Industries 2022”.
- Attended organized by Department of Chemical Engineering, IPS Academy and sponsored by SERB. The theme of the event was "Carbon Neutrality for Sustainable Development: Challenges and Advances".

CERTIFICATION COURSES

- Chemicals and Health an online non-credit course authorized by Johns Hopkins University and offered through Coursera. (2021)
- Materials Science: 10 Things Every Engineer Should Know an online non-credit course authorized by University of California, Davis and offered through Coursera. (2021)
- Computational Fluid Mechanics - Airflow Around a Spoiler an online non-credit course offered through Coursera. (2023)

TECHNICAL SKILLS/ SOFTWARES

- AUTOCAD- P&ID
- CHEMCAD
- AFT Fathom
- SPSS – Software

EXTRA CURRICULAR ACTIVITIES & POSITION OF RESPONSIBILITIES

- **President of the Society for Contemporary Affairs (The Lexicon Club) of college:** As President of The Lexicon Club, I led dynamic event organization, emphasizing effective communication and organizational skills to foster engaging discussions. This role cultivated leadership skills through aligning the club with the institution's ethos, managing diverse opinions for inclusivity, and serving as a platform for intellectual growth and community engagement.
- **Group Lead of Academic Project in third year:** As the Group Lead for a third-year academic project, I orchestrated team dynamics, coordinated tasks, and ensured the timely achievement of project milestones. This experience enriched my skills in leadership, coordination, and project management, fostering a successful project completion and enhancing overall team efficiency.
- **Backstage lead at college’s cultural fest- Dazzle 2022 & 2023:** Coordinated backstage operations as the lead during the college's cultural fest, Dazzle, in both 2022 and 2023. Managed logistics, schedules, and communication to ensure smooth execution of performances, contributing to the overall success of the event.