AKASH KANJI

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EDUCATION

Jadavpur University

Bachelors of Engineering
Metallurgical and Materials Engineering
CGPA : 8.0
2022-2026

Date of Birth: 26/04/2004

EXPERIENCE

Summer Research Internship at IIT Kharagpur
June, 2024

SKILLS

- **Material Characterization:** Proficiency in analyzing the mechanical properties of materials through techniques such as *compression testing*, *tensile testing*, *hardness testing*, *fatigue test*, *impact test*, *bend test* and microstructural analysis. Experienced in Optical and Scanning Electron Microscopy. Familiar with Thermocalc and JMatPro. Proficient in *Electron Backscatter Diffraction* (EBSD) and its data processing.
- **Metallurgical Processes:** Knowledge of various metallurgical processes such as *heat treatment*, *casting*, *forging*, *and welding* and their effects on material properties.
- **Laser Additive Manufacturing:** In hand experienced with Laser based 3D *manufacturing*.
- **Corrosion Engineering:** Performed and analysed *Electrochemical Corrosion*, *Hot Corrosion*, *Stress Corrosion* for multiple varieties of Alloys and Metals.
- **Metal Matrix Composite:** Worked with composites from manufacturing to testing. Familiar with Low Temperature Sintering.
- **Finite Element Analysis (FEA):** Ability to perform FEA tools such as ANSYS and COMSOL *Multiphysics*. Capable of predicting material behavior under various loading conditions, optimizing component designs, and analyzing structural integrity.
- **Multiscale Modeling:** Learning to apply DFT and MD modeling techniques to analyze material behavior and properties.
- **Python & Machine Learning:** Proficient in Python for *data analysis and machine learning* model implementation to predict material behavior. Familiar with *TensorFlow*, *scikit-learn*, *Pymatgen*, *Mongo DB*.

LANGUAGES

English
German

PROJECTS

- **Surface Analysis and Performance Evaluation of Novel Tribaloy Alloys:** Oxidation and Wear Analysis of these Alloys.
- **Hot Corrosion Analysis of Novel Cobalt based Alloy:** Type 1 Hot Corrosion in presence of Sulphate and Chloride Salt.
- **Corrosion Monitoring Tool:** Arduino based monitoring tool to analyse Electrochemical Corrosion.
- **Alloy Development of Tribaloy/SS 316L :** Developed alloys for crack free Laser manufacturing.
- **Microstructure Engineering of Plain Carbon Steel:** Corelating Microstructure with Properties.
- **Comparative Study of Localized and Diffuse necking in Steel Sample having varying Carbon % of 0.3 to 0.5:** Studied the necking phenomenon.
- **Insights into Compression Behavior of Aluminium and Cast Iron Sample:** Uniaxial Compression lest performed for different sample.
- **Development and Analysis of a Crystal Defect Simulation Tool:** A Computational Approach to simulate Crystal Defects and Dislocations.
- **Physics Problem Simulator:** Designed and developed a simulator to solve and visualize various physics problems like Harmonic motion, friction etc.
- **SimShare:** Developed open-source simulation sharing platform.

PAPER OR POSTER PRESENTED

- **Emerging Technologies in Eco-Friendly Steel Making Process** Metallix'24
- **Insights into Aluminium Compression Behavior: Implications for Structural Integrity Analysis** Composit'24
- **Novel Lightweight and Protective Battery System Based on Mechanical Metamaterials** Metallix'23

SEMINAR OR WORKSHOP ATTENDED

- Microstructure quantification & their mesoscale atomistic modeling, SPARC workshop
- Emerging Technologies in Atmanirbhar Bharat by TATA Social Enterprise and IIM Calcutta
- Managing Energy & Environment in steel based industries: Research, Technology Applications and Development of Eco-friendly & Energy-efficient equipment by IIM BESU Chapter
- Climate Connect by IEEE JUSB