

MD JAMIL AKHTAR

M.TECH | INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Oxide Ceramics & Glass-Ceramics Synthesis, Characterization and Analysis | Mechanical & Dielectric Properties | Glass Ceramics | Ceramic Matrix Composite | Ti64 (Titanium) alloy | Interested in functional Materials.



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SKILL AND EXPERTISE

Technical Skills: Sintering, Raising Hearth Furnace, Muffle Furnace, Impedance Analyzer, Ball Mill, Optical Microscope, Polarized Light Microscope, Micro-Scratch, Micro-Indentation, Microwave Furnace, EBSD, SIMS.

Software Skills: X'pertHighScore Plus, OriginPro, ImageJ, VGstudio Max, Dragonfly, TSL, MS Office (Excel, Word, Powerpoint). Basic of Atomsk and Vesta, C++ Basic.

EDUCATION

❖ **Jr. PROJECT ASSISTANCE**.....October, 2024 to Now
GE Aerospace Project, IIT Kharagpur, India | Shibayan Roy

Project Title: Understanding MTR formation and its removal strategies during secondary TMP of Ti-6Al-4V alloy.

- ❖ Investigating microtexture region (MTR) formation in Ti-6Al-4V during thermomechanical processing (TMP).
- ❖ Microstructure characterization using optical microscopy, SEM and EBSD.
- ❖ Analyzing phase distribution, grain morphology, and texture development.
- ❖ Optimizing large area (7mm*4mm) EBSD parameters for accurate texture analysis.

❖ **M.TECH MATERIALS SCIENCE AND ENGINEERING**July, 2022-July, 2024
IIT Kharagpur | West Bengal *CGPA 9.14*

Courses:

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|-------------------------------------|-------------------------------------|--|
| ❖ Material Characterization | ❖ Science And Technology of Ceramic | ❖ Fundamental of Electronics Materials |
| ❖ Advanced Materials and Processes | ❖ Semiconductors and Polymers | ❖ Computational Materials Science |
| ❖ Nano Technology and Nanomaterials | ❖ Solar Energy Materials | ❖ Epitaxy Of Compound Semiconductors |

❖ **BACHELOR OF EDUCATION**.....July, 2019-May, 2021
The West Bengal University of Teachers Training, Education Planning & Administration | West Bengal *CGPA 9.46*

❖ **M.SC PHYSICS**.....July, 2017-May, 2019
Bankura University| West Bengal *First Class (66%)*

Courses:

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|--------------------------------|---------------------------------------|-------------------------|
| ❖ Advance Mathematical Physics | ❖ Advance Condensed Matter Physics | ❖ Advanced Electronics |
| ❖ Advance Quantum Mechanics | ❖ Electrostatics And Electro Dynamics | ❖ Statistical Mechanics |

❖ **B.SC PHYSICS**.....July 2014-May , 2017
University of Kalyani | West Bengal *First Class (63.25%)*
Courses: Physics, Chemistry and Mathematics

❖ **HIGHER SECONDARY**.....July, 2012-May, 2014
Ideal High Madrasah, WBCHSE *First Class (77%)*

❖ **SECONDARY EDUATION**.....May, 2012
Mothabari High School, WBBSE *First Class (65.43%)*

☐ SUMMER INTERNSHIP

CMCD Laboratory | ASL, DRDO Hyderabad | Samar Mondal (Scientist E)..... 15/05/2023-13/07/2023

Thermal properties analysis of “carbon fibre reinforcement silicon carbide composite”

- 3D NPP C/SiC samples were prepared from commercially procured carbon fibre and carbon felt using liquid silicon infiltration method (LSI)
- Thermal properties like thermal conductivity, heat capacity, thermal expansion etc. were analysed using laser flash method, DSC and dilatometry respectively
- Archimedes' principle has been used to measure density

☐ RESEARCH WORKS

❖ MATERIALS DEVELOPMENT FOR HIGH TEMPERATURE RADOME APPLICATION

SPP Laboratory | IIT Kharagpur | Prof. Shibayan Roy..... June 2023 – June 2024

- Synthesis of base glasses with nucleating agents and varying compositions
- Fabrication of glass-ceramics under diverse heat-treatment conditions and methods
- Characterization of microstructure evolution, mechanical, and dielectric properties
- Synthesis of oxide ceramics with different dopants and stabilizing agents using novel processing routes (Two Step Sintering method)
- In-depth characterization of oxide ceramic properties and microstructure

❖ PROCESSING AND CHARACTERISATIONS OF LEUCITE BASED GLASS CERAMICS

SPP Laboratory | IIT Kharagpur | Prof. Shibayan Roy.....Nov 2023 - June 2024

- Synthesis of base glass with varying compositions
- Fabrication of glass-ceramics under diverse heat-treatment conditions
- Characterizations of the glass ceramics to know the crystallization.

❖ COLLABORATION RESEARCH WORK

IIT Kharagpur & Kazi Nazrul University | Prof. Shibayan Roy & Soumya Mukherjee..... Oct 2023 to June 2024
Experimental and Theoretical Research on Transitional Metal doping on Delafossites (Cu-Al-O) as transparent conducting oxides (TCO) in terms of microstructure, optical properties, dielectric and magnetic properties for versatile applications.

❖ M.SC PROJECT

Bankura University| West Bengal..... Jan,2017-May,2019

- Construction of a band pass filter to verify Barkhausen criteria.

☐ ACADEMIC ACHIEVEMENTS

❖ GATE | National PhD/MTech fellowship scheme: Qualified

❖ WBSET-22 | West Bengal state eligibility test for assistant professor: Qualified

☐ LANGUAGES

English
Working proficiency

Hindi
Working proficiency

Bengali
Native

☐ ACTIVITIES

PoR:

- Teaching assistantship for an online course “[Techniques of Materials Characterization](#)” organized by National Programme on Technology Enhanced Learning (NPTEL) (Certified)
- Teaching assistantship for Advance Ceramic (Powder Processing) lab course at IIT Kharagpur

Conferences:

- Poster Presented at [XXVII International Congress on Glass \(ICG 2025\)](#) in Kolkata, India
- Attended 3rd ICG-CGCRI tutorial on glass from January 17th to 19th, 2025

Workshop:

- Attended and volunteered at the SPARC Workshop on “Microstructure-Property Correlations of Materials using Computational Methods and Machine Learning” from December 16th to 18th, 2024

☐ REFERENCES

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