

AMANAT ALI

Mechanical & Materials Engineer

Nationality: Indian · D.O.B. February 08, 1994

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EDUCATION

National University of Science & Technology MISIS, Russia

August 2020 - June 2022

MASTER OF SCIENCE (M.SC.) in Advanced Materials Science

Overall GPA: 4.6/5.0

- Thesis: 'Thermodynamic Assessment of Binary & Ternary System by Using CALPHAD'.

University of Petroleum and Energy Studies, India

August 2016 - June 2020

BACHELOR OF TECHNOLOGY (B.TECH.) in Mechanical Engineering

Overall GPA: 7.87/10.0

- Major Thesis: 'Synthesis and Characterization of Vitrimer Nanocomposites for anti-corrosion applications by using nanofillers'. Grade: 10/10 (12 Months)
- Minor Thesis: 'Synthesis & Characterization of BaTiO₃ Thin Films'. Grade: 10/10 (12 months)
- Others: Head of Team Robocon (2017-18), Class Representative of Mechanical Engineering(class of 2020) for all 4 years of UG studies, Head of UPES-NSS Student Team(2019-20)

EXPERIENCE

IISc (Indian Institute of Science)

May 2019 – August 2019

Research Intern (under Prof. Rajeev Ranjan, Department of Materials Engineering)

Bangalore, India

- Project Title: "synthesis and characterization multiferroic composites at room temperature"
- Worked on ferroelectric and ferromagnetic material (piezoelectric material) - Bismuth Ferrite Lead Titanate (BFPT) system, which possess strong magneto-electric coupling. Grade: 10/10

TPU (National Research Tomsk Polytechnic University)

August 2019 - February 2020

Semester Exchange/Research Student

Tomsk, Russia

- Successfully completed my 7th semester from TPU as a semester exchange student. Grade: 10/10
- Worked on 'investigation of interaction of laser beams with explosive powder materials under various material and environmental conditions'.
- Synthesis and characterization of nanomaterial or nanoparticles (especially in the field of CNTs).
- Design and measurement of complex mechanical components by using coordinate measuring machine (CMM).

PROJECT UNDERTAKEN

UPES (University of Petroleum and Energy Studies)

August 2019 - May 2020

Research project (under Dr. Sravendra Rana, Department of Chemistry)

Dehradun, India

- Worked on a material with good self-healing ability and 'synthesis & characterization of Vitrimer Nano composites for anti-corrosion applications'. Graphene addition with Nanofillers in polymer which constitutes both thermosetting and thermoplastics properties.

UPES (University of Petroleum and Energy Studies)

May 2017 – February 2018

Research Project (under Dr. Rajeev Gupta, Department of Physics)

Dehradun, India

- Worked on investigation of 'Photocatalysis of TiO₂ Nanoparticle' and applied this knowledge in the field of its solar applications.

UPES (University of Petroleum and Energy Studies)

Research project (under Dr. Amit Kumar Chawla, Department of Physics)

August 2018 - May 2019

Dehradun, India

- Title: Synthesis and Characterization of Zr-Doped BaTiO₃ Thin films.
- This project includes the synthesis of lead free piezoelectric material, preparation & characterization of thin films. Hence, check how much amount of piezoelectricity generated (means d33) by our material as compared to the available material in market, with the help of piezometer.

UPES (University of Petroleum and Energy Studies)

Research project (under Dr. Girish Chandran V. Department of Mechanical Engineering)

May 2019 - February 2020

Dehradun, India

- Title: Futuristic Full Helmet with Improved Road Vision.
- This project improves the road safety of human, we are going to manufacturing the futuristic helmet with improve the road vision, adjustable size, cooling and provide detachable raincoat.

PUBLICATIONS

1. Amanat Ali, Photocatalysis of TiO₂ Nanoparticle published in IJARSE- Journal, (Walia *et al.*, no date) Walia, S. *et al.* 'Photocatalysis of TiO₂ Nanoparticles', 1, pp. 617–625.
2. One research paper on "**Inducing ferromagnetism in BiFeO₃-based alloys**" is under review for publication in the Journal of applied physics.

TECHNICAL STRENGTHS

Programming Software & Tools

C, Python, and Arduino
MATLAB, Solid Works, Auto CAD, Image J, Origin, Deform 3D & 2D

Laboratory

X-Pert High Score plus, Full Prof Suit, Origin, MS Office, Win Plot
Scanning Electron Microscopy, Transmission Electron Microscopy,
X-Ray Diffraction, UV-Vis Spectroscopy, Atomic Force Microscopy,
Energy Dispersive Spectroscopy, Pulse Laser Deposition Technique.

Language

English, Russian, Hindi, Urdu

NATIONAL AND INTERNATIONAL ACHIEVEMENTS

CSIR-Central Mechanical Engineering Research Institute, Durgapur, India (2021)

- Selected for research associate position at DMSE Lab, CMERI.

International Summer program, Osaka University Japan (2021)

- Got a chance to attend summer program in physics at Osaka University

Russian Government Scholarship (2020-2022)

- Got Russian Government Scholarship for fully funded master's program.

Tomsk Polytechnic University (Fall 2019)

- One of the two selected students from my university to pursue a semester exchange program.

Indian Institute of Science (Summer 2019)

- One of the very few students selected from thousands of applicants all across India to pursue a fully funded summer research internship at IISc Bangalore.

Indian Centre for Research and Manufacturing Excellence PVT.LTD (ICME) (2019)

- Most Active Participant Award winner in Lean Manufacturing course.
- 1st Prize winner in Lean Manufacturing course presentation.

University of Petroleum and Energy Studies (2019)

- Awarded **RISE** (Research Initiative for Students in Engineering) **fellowship** at UPES to carry out research.

CONFERENCES/WORKSHOPS ATTENDED

- Successfully completed the skill development training programme on Energy Materials – Fundamentals of device fabrication, organized by **CSIR-Centre Electrochemical Research Institute**.
- Took part in the educational course on ‘**Surface Science methods with an emphasis on the study of catalytic surfaces**’ in the period from September 25 to September 30, 2019, at **Tomsk State University, Tomsk, Russia** conducted by Institute for Research on catalysis and the environment of Lyon (**IRCELYON**), **France**.
- Took a part of oral presentation in workshop on “**Environmental Impact of Nanomaterials**” held on the 29th of Nov, 2019, in Nano-Center, TPU, Russia.
- Attended workshop on ‘Reitveld Structure Refinement using TOPAS software’ at **IISc, Bengaluru**, India- conducted by **BRUKER** Company.
- Presented Paper on ‘Photocatalysis of TiO₂ Nanoparticle at **ICRTESM-2018, REVA University, India**.
- Presented Paper on ‘To Study the Structural and Optical properties of Zirconium doped BaTiO₃ thin film’ at **ICAMEES-2018, UPES, India**.