Debargha Paul

debargha.mitun@gmail.com/ dpaul@mt.iitr.ac.in
+91-9674516593/+91-7439577271

CAREER OBJECTIVE

A dedicated, detailed and self-motivated individual with a constant urge to learn new things, I want to continue my research in the field of physical metallurgy, degradation of materials and material characterization where I can enrich my knowledge in the state-of-art skills and be a part of the team that can excel research work in the same field and gives me satisfaction thereof.

EDUCATION

M.Tech, Materials Engineering *2018-2020*
IIT ROORKEE, India
CGPA: 9.059/10.0

B.Tech, Metallurgy and Materials Engineering *2014-2018*
IIEST, Shibpur (erstwhile BE College, Shibpur)
CGPA: 8.5/10.0

RESEARCH EXPERIENCE

IIT Roorkee-TATA Steel *07/2019 –06/2020*
Graduate Research Assistant
To establish the relation of grain boundary cementite in high carbon steel with process parameters
-My research involved the study of the change in grain boundary cementite in billet and wire rods with varying casting and rolling parameters. High carbon steel wires are used in pre-stressed concrete beams, railway sleepers. The demand is to obtain high strength with good ductility and thus martensite and cementite should be avoided in order to prevent fracture. During casting, tundish superheat temperature was varied due to its strong effect on segregation pattern. Analysis showed that wire rods obtained from higher segregated billets led to more grain boundary cementite formation. Dilatometric analysis revealed that cementite fraction decreases with increasing cooling rate at constant superheat.

IIEST, Shibpur *08/2017–05/2018*
Undergraduate Research Assistant
Synthesis and characterization of Ni-Mn-Sn Heusler alloy by mechanical alloying

-Green technologies are gradually replacing the age-old processes which can be of serious threat to the planet. Magentocaloric effect can be considered as an alternative technology for refrigeration which will ultimately curb the emission of harmful CFC and HCFC gases. In this project, the mechanical alloying route was adopted to synthesize $Ni_{50}Mn_{35}Sn_{15}$ alloy and the phase purity was studied by X-ray diffraction technique. Measurement of the grain size and lattice strain was done using single line profile analysis. Phase transition temperatures were determined from Magnetisation Vs. Temperature plot.

CSIR-NML, Jamshedpur *12/2016-01/2017*
Study of Magnetic Properties of Low Carbon Steel
-Analyzing the defects and failures occurring in the low carbon steel by Magstar- a portable NDE technique
-Co-relating the microstructural, mechanical and magnetic properties of low carbon steel

INDUSTRIAL EXPERIENCE

Tata Sikorsky Aerospace Limited *08/2020-Present*
Senior Manufacturing Engineer
-Optimising manufacturing processes for efficient outcome
-Preparation of product requirements by defining scope, material and features of new products
-Development of strong business relationship with customers by providing technical support
-Implement RRCA techniques to solve multi-disciplinary problems

JSPL, Angul *05/2016-06/2016*
Project Intern
Genesis of Longitudinal Cracks in Slabs
-Reason for the generation of longitudinal cracks in slab caster
-Methods to prevent these crack generation.

SKILLS

Programming Languages: C
Software & Tools: Origin, MATLAB, AutoCAD, CatiaV-5, MS Office

HONORS/ACHIEVEMENTS

Secured a paid collaborative research opportunity (IIT Roorkee-Tata Steel) *07/2019 - 06/2020*
Secured an All-India Rank of 274 in Graduate Aptitude Test in Engineering *2018*
Received MHRD scholarship *2018-2020*
Graduated in First Division with Distinction in M.Tech (2nd in departmental batch) *2018*
Graduated in First Class with Honours in B.Tech *2014*

RELEVANT COURSEWORK

Structure of Materials, Phase Transformation, Characterization of Materials, Degradation of Materials and their Prevention, Heat Treatment Technology, Fracture Mechanics and Failure Analysis, Materials Processing, Tribology of Engineering Materials, Deformation Behavior of Materials, X-ray and Electron Diffraction, Metallurgy of Ferrous and Non-ferrous alloys, Metallurgical Thermodynamics and Kinetics, Composite Materials, Engineering Ceramics, Iron and Steel Making.

LANGUAGES

English
Full Professional Proficiency
Bengali
Native or Bilingual Proficiency
Hindi
Professional Working Proficiency

EXTRA-CURRICULARS

Passionate about Music

Recitation
Completed till third year in recitation under Pracheen Kala Kendra

Painting
Completed till fourth year in painting under Bangiya Sangeet Parishad