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SUMMARY

Hardworking and talented IIT Delhi graduate motivated to inspire students to set a higher educational goal for themselves and to pursue academic and personal excellence. Looking forward towards creating a challenging and engaging environment for students where they can use there creativity to solve an academic problem and at the same time become a life-long achiever and scholar. Exceptational educational career with a silver medal during my Master in Technology awarded by the prestigious NIT, Rourkela.

ACADEMIC

Qualification	Specilisation	Institute	Year	GPA/Marks
Ph.D	Material Science & Engg.	Indian Institute of Technology, Delhi	2021	9.0
M.Tech	Metallurgical & Materials Engg.	NIT,Rourkela, Odisha	2013	9.4
B.Tech	Mechanical Engg.	Govt. Engg college, Keonjhar(BPUT,Odisha)	2009	8.1

ACADEMIC ACHIEVEMENTS

- **Topper** in M.Tech in NIT Rourkela , Odisha and received **Silver Medal**.
- **2nd Topper** in B. Tech in Govt. Engg college, Keonjhar, Odisha.

PROFESSIONAL EXPERIENCE

- Assistant Professor at College of Engineering, Bhubaneswar in Mechanical Engineering Department, Bhubaneswar (14th Feb 2022 – Till date). Teaching subjects like Vibrations, Introduction to Physical Metallurgy.
- Assistant Professor at Gandhi Engineering College in Mechanical Engineering Department, Bhubaneswar (25th Nov 2021 – 10th Feb 2022). Teaching subjects like Mechanics, Basic Manufacturing Engineering, Basic Mechanical Engineering, Production Technology and Hydraulics.
- Faculty at Srinix Engg. College in Mechanical Engineering Department, Balasore, Odisha (August 2010- July 2011). Teaching subjects like Mechanics, Machine dynamics, Fluid Dynamics, Introduction to Physical Metallurgy.
- Faculty at Satyasai Engg. College in Mechanical Engineering Department, Balasore, Odisha (July 2009- July 2010). Teaching subjects like Machine design, Fluid Mechanics, Machine dynamics, Strength of Materials, Refrigeration and Air-Conditioning.

EXPERIENCE SYNOPSIS

- Expertise in Metallography,
- XRD,
- Pole Figure,
- SEM, EBSD with EDS,
- Automatic micro-hardness testing technique,
- Nanoindentation technique,
- AFM,
- MS Office (Word, Excel, PowerPoint),
- Origin,
- ImageJ and Internet applications.

EDUCATION SYNOPSIS

DOCTOR OF PHILOSOPHY

Thesis: "Deformation and static recrystallization behaviour of pure magnesium under strain path change".
Abstract: This study investigates the effect produced by changing the strain paths on deformation as well as recrystallization behaviour of pure Mg. An extruded rod of pure Mg, with a strong basal texture was considered as the starting material. Various combination of strain path change experiments were conducted (involving directions parallel and perpendicular to extrusion direction) at room temperature. Both isochronal and isothermal annealing were adopted as a part of heat-treatment. A distinguishable difference was observed in the flow-curve patterns under different loading conditions. This was attributed to the activation of different combinations of deformation modes during different strain path change conditions. The effect of the strain path change on the strain-hardening rate was investigated too. The texture evolution was thoroughly observed through EBSD results.

- Covered technical subjects like Fracture Mechanics and Modern Engineering materials as a part of the course work apart from the compulsory Communication English course.
- As a part of TA, I got the opportunity to conduct UG lab experiments and clear their doubts regarding the subject.
- Contents of Lab Demonstration: Bravais Lattice, Voids in crystal, Defects in crystal, XRD analysis, Study of Microstructure and Phase diagram , Creep behavior of Pb-Sn alloy, Heating of rubber, Plastic deformation (Tensile test), Etched and unetched properties of Glass.
- Some of the new Lattice models were created by me which are still in use for the teaching purposes.
- Organize and participating in Short-term course on "Advance Material Characterization" in the Department of Applied Mechanics, IIT Delhi from 12-05-2015 to 14-05-2015.
- Set up/Repairing of lab-equipment like Slow-speed cutter, Polishing unit, Rolling, Vicker hardness tester, SEM, Optical emission spectrometer, Furnaces for Ph.D work .
- Expertise on instruments like UTM facilitated with cooling and heating stages (ZWICK), Melting Furnace, Rolling machine, Creep testing machine, Impact testing machine, Micro-hardness tester, Nano-indenter (OXFORD), AFM, Optical microscope with heating and cooling stage, XRD (RIGAKU, JAPAN), SEM, FESEM for EBSD analysis (OXFORD).

MASTER IN TECHNOLOGY

Thesis : "Processing, Microstructure and Properties of Hybrid Metallic and Ceramic Reinforced Aluminium Composites"

Abstract: Ceramic reinforced aluminium matrix composites find wide applications in structural and automobile industries because of their good strength. However they suffer from low ductility. Such problem can be resolved by the use of hybrid composites i.e. the combined addition of ceramics and metallic reinforcements in the composites. Metallic particulates will retain ductility and ceramic will help to improve strength. In the present study, the combined Ti (micro) and Al_2O_3 (micro (MA) or nano (NA)) particles reinforced commercially pure Al matrix composites have been developed via powder metallurgy route. A detailed microstructural characterization and the evaluation of mechanical properties including wear and corrosion behaviour have been carried out. As a basis for comparison, the same has also been investigated for the Al composites reinforced with these particles alone.

- As a part of my course work, excelled in subjects like XRD & Electron microscopy, Mechanical working, Physical metallurgy, Phase transformation, Metallurgical thermodynamics, Composite Materials, Structure and properties of materials etc.
- Seminar and technical writing was included in each of the semester.
- Awarded as a class topper in both of the years of the course.
- Scored the highest marks in almost all subjects mentioned.
- Got trained in operating the cold-compaction machine and availed good exposure to instruments like SEM, XRD, Micro-hardness tester etc.

PUBLICATIONS/CONFERENCES/WORKSHOPS

- S. Mohapatra, R. Prasad, J. Jain, Temperature dependence of abnormal grain growth in pure magnesium, Mater. Lett. 283 (2021) 128851.
- S. Mohapatra, D. Kumar, R. Prasad, J. Jain, Influence of strain path change on static recrystallisation behaviour of an extruded pure magnesium, Philos. Mag. 101 (2021) 1364–1379.
- S. Mohapatra et al. , Overview of Static Recrystallization in Magnesium Alloys , Advanced Materials and Processes, ASM International, 173, No. 4 (2015) 28-31.
- NRC-M Workshop on "Texture of Materials" held on 15-19 February 2015 at IISC Bangalore.
- Short Term Course in "Crystallography and Defects" by Prof. Kevin Knowles of University of Cambridge, 12th-16th December 2016 at IIT Delhi.
- S. Mohapatra, A.K.S. Bankoti, A.K. Mondal, A. Thirugnanam, Dry Sliding Wear and Corrosion Behaviour of Al-Based Hybrid Composites Reinforced with Micro-Tip and Micro/Nano-Al2O3p, Trans. Indian Inst. Met. 69 (2016) 1155–1167.
- Poster presentation on "Study of grain growth kinetics in pure magnesium" at ICME conference, June 2017 at IIT Kanpur.

Place & Date: Shanta Mohapatra