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EDUCATIONAL QUALIFICATIONS

Course	Name of the institution	Year of passing
Ph.D (Metallurgical Engg,)	IIT Kharagpur	2022 (Awarded)
M Tech (Metallurgical Engg,)	IIT Kharagpur	2015
B Tech (Metallurgical Engg,)	NIT Jamshedpur	2012
HSCE (XII)	Jharkhand State Board (JAC Ranchi)	2004
SSCE (X)	Jharkhand State Board (JSEB Ranchi)	2002

PROJECTS UNDERTAKEN

Ph.D	Broad Area of Research**: Development of rare-earth free hard ferromagnetic materials and its application to hard magnetic devices.** The major objective of this work is to develop REF permanent magnetic materials, which will exhibit higher magnetic properties (higher coercivity (H_c), higher energy product $(BH)_{max}$ and higher Curie temperature (T_c)) compared to that of the Rare Earth Permanent Magnets (REPM). This rare earth magnets can be replaced and reduce cost effectively. DFT calculations and COMSOL Simulation works.
M Tech Project	Title : **Al-CNT Nanocomposite material via Spark plasma Sintering** Main aim is to disperse CNT uniformly on Al- matrix , Functionalization of CNT, XRD analysis, SEM ,TEM, Sintering via Spark plasma Sintering, Hardness testing
B Tech Project	Title : **Characterization of Low Grade Iron Ore (BHJ & BHQ)** Occurrence of BHJ/ BHQ in World, Physical and Chemical Characterization Studies, XRD analysis, Petrography analysis, Beneficiation Studies.

ACHIEVEMENTS AND AWARDS

List of Publications (Journal paper):

1. **Akash Oraon**, T. Adhikary, M. Tirugabathina, B. Kumar, S Ghosh, S. Aich "Microstructure and Magnetic properties of $Co_{82-(x+y)}Zr_{13}V_5B_xSi_y$ melt-spun ribbons", ***Journal of Alloys and Compounds.*** 965, JULY (2023): 171436, https://doi.org/10.1016/j.jallcom.2023.171436. **SCI** INDEXED JOURNAL, ELSEVIER PUBLICATIONS, IMPACT FACTOR: **6.37**
2. Deepak Kumar Gorai, Saikat Kumar Kuila, **Akash Oraon,** Anurag Kumar, Mukesh Suthar, Rahul Mitra, Krishanu Biswas Resource, P.K. Roy Resource, Md. Imteyaz Ahmad, Tarun Kumar Kundu, "A facile and green synthesis of Mn and P functionalized graphitic carbon nitride nanosheets for spintronics devices and enhanced photocatalytic performance under visible-light." ***Journal of Colloid and Interface Science***. 644, 2023 April; 397-414, https://doi.org/10.1016/j.jcis.2023.04.057. **SCI** INDEXED JOURNAL, **ELSEVIER** PUBLICATIONS, IMPACT FACTOR: **9.965**
3. **Akash Oraon**, T. Adhikary, G.P. Das, S Ghosh, A. Garg, A. Raja, S. Aich "Combined experimental and DFT studies of $Co_{82}Zr_{12}V_{6-x}B_x$ melt-spun ribbons to investigate structure and magnetic properties". ***J. Magn. Magn. Mater.*** 547, April (2022): 168940, https://doi.org/10.1016/j.jmmm.2021.168940. **SCI** INDEXED JOURNAL, **ELSEVIER** PUBLICATIONS, IMPACT FACTOR: **3.097**

4. **Akash Oraon,** Bhakti Pada Das, Monisha Michael, Tapasendra Adhikary, Purbarun Dhar, Shampa Aich, Sudipto Ghosh "Impact of magnetic field on the thermal properties of chemically synthesized Sm-Co nanoparticles based silicone oil nanofluid" ***journal of thermal analysis and calorimetry***. 147, February (2021): 1933–1943, DOI: https://doi.org/10.1007/s10973-021-10572-1. **SCI** INDEXED JOURNAL, **SPRINGER** PUBLICATIONS, IMPACT FACTOR: **4.755**

5. Tapasendra Adhikary, Marupalli Bharat Charan Goud, Gourab Bhattacharya, **Akash Oraon**, Banty Kumar, and Shampa Aich. "Development of $Ni_{44}Ti_{35}Zr_{15}Cu_6$ Quaternary Shape Memory Alloy: Experimental and Density Functional Theory Studies." *Journal of Materials Engineering and Performance.* 30, April (2021): 3624–3631, DOI: https://doi.org/10.1007/s11665-021-05702-7. **SCI** INDEXED JOURNAL, **SPRINGER** PUBLICATIONS, IMPACT FACTOR: **2.036**

6. T Adhikary, RP Rajak, Bharat C.G. Marupalli and **Akash Oraon,** G Bhattacharya and V Adyam, S Aich "Synthesis of Ni/Ti thin film by magnetron sputtering to study the effect of annealing time on microstructure and mechanical properties" International journal of materials and product technology. 62, 2021 December: 65–79, DOI: 10.1504/IJMPT.2021.10036769**. SCI** INDEXED JOURNAL, **SCIMAGO** PUBLICATIONS, IMPACT FACTOR: **0.81**

7. **Akash Oraon**, Rajneesh Oraon, Sudipto Ghosh, Shampa Aich, Gautam Sinha "Simulation -based design of optimized symmetric MRI magnet modified with Ferromagnetic shell." IEEE Transactions on Magnetics 56(2) February (2020): 8959382, DOI: 10.1109/TMAG.2019.2956139. **SCI** INDEXED JOURNAL, **IEEE** PUBLICATIONS, IMPACT FACTOR: **1.848**

8. Akila Raja, Tapasendra Adhikary, Al-Omari IA, GP Das, Sudipto Ghosh, Deepak kr. Satapathy, **Akash Oraon**, JE Shield, Shampa Aich "Rapidly solidified Sm-Co-Hf-B magnetic Nano-composites: Experimental and DFT studies". J. Magn. Magn. Mater. june (2020): 15; 504:166645, DOI: https://doi.org/10.1016/j.jmmm.2020.166645. **SCI** INDEXED JOURNAL, **ELSEVIER** PUBLICATIONS, IMPACT FACTOR: **3.097**

9. BP Das, **Akash Oraon**, TK Nath, T Adhikary, S Aich, P Pramanik "Room temperature ferromagnetism in chemically synthesized dilute magnetic semiconducting $(In_{0.95}Mn_{0.05})_2O_3$ nanoparticles" Journal of Materials Science: Materials in Electronics. Dec. (2020): 31(24):22872-80, DOI: https://doi.org/10.1007/s10854-020-04814-5. **SCI** INDEXED JOURNAL, **SPRINGER** PUBLICATIONS, IMPACT FACTOR: **2.779**

10. Lavish K. Singh, Alok Bhadauria, **Akash Oraon**, and Tapas Laha "Spark plasma sintered Al-0.5 wt% MWCNT nanocomposite: Effect of sintering pressure on the densification behavior and multi-scale mechanical properties." *Diamond and Related Materials* 91 November (2019): 144-155, DOI: https://doi.org/10.1016/j.diamond.2018.11.021. **SCI** INDEXED JOURNAL, **ELSEVIER** PUBLICATIONS, IMPACT FACTOR: **3.315**

List of Conferences participated

International:

1. "Design and optimization method of symmetric MRI magnet by COMSOL multiphysics," **European Congress and Exhibition on Advanced Materials and Processes (EUROMAT-2019),** Stockholm, Sweden, September 1-5, 2019.
2. "Magnetic hardness and structural properties of rapidly solidified $Co_{79}Zr_{13}V_3B_2Si_1$ alloy ribbon", **10th International Student Seminar on Metallurgy and Material Science**, Held through WebEx Event on 28 August 2020, Organized by Indian Institute of Metals, Jamshedpur Chapter in association with Tata Steel Limited and CSIR- NML.

National:

1. "Simulation based design of optimized symmetric magnet modified with iron shell**," NMD ATM- 2017,** BITS Goa, India, November 11-14, 2017.

Extra –Curricular Activities

1. Attended **workshop on** Lithium ion battery technology and mathematical modeling on May, 2016 at IIT Kharagpur.
2. Participated for "poster presentation" in **RSD -2019** at Metallurgical and Materials Engineering department, IIT Kharagpur.
3. Member of Organizing Committee of **8TH RSD -2017** held on March 2017 at Metallurgical and Materials Engineering department, IIT Kharagpur.
4. Secured 2nd prize for Poster presentation in **RSD- 2017** at Metallurgical and Materials Engineering department, IIT Kharagpur.
5. Secured 1st position in **COMPOSIT QUIZ 15** at Metallurgical and Materials Engineering department, IIT Kharagpur.
6. Secured 3rd position in **COMPOSIT QUIZ 14** at Metallurgical and Materials Engineering department, IIT Kharagpur.
7. Participated in Model Presentation Contest held under the auspices of **TECHNICA- 2010** Technical fest at Metallurgical and Materials Engineering department, NIT Jamshedpur.
8. Committee member in the hospitality and security department of techno-management fest "**PRAVAH**" held in **NIT Jamshedpur**.
9. Secured **3rd** position in "**Science Exhibition competition**" at **Rungta School, Chaibasa.**
10. Secured **1st prize** in painting competition.

VOCATIONAL TRAINING

- Underwent an Observational Vocational Training of six weeks at "(SAIL) STEEL AUTHORITY OF INDIA LIMITED", BOKARO STEEL PLANT (JHARKHAND).

TECHNICAL SKILLS

- **Areas of Interest: Iron and Steel making, Metal Extraction, Heat Treatment Process, Materials Characterization Methods, Magnetism.**
- Operation and Analysis Systems: Basics of Windows, DFT Calculation, X-pert Highscore, Origin pro, COMSOL.

SKILLS AND STRENGTHS

- Creativity, Hardworking, Punctual, Disciplined and a Good Listener
- A Team Player and Responsible, Good Decision Making ability
- Positive Attitude, Organizational ability
- Honesty, sincerity & Dedication for work, Problem Solving ability