

# ***CURRICULUM VITAE***

**Dr. Gaurav**

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Assistant Professor and HOD  
Government Engineering College, Buxar  
DSTTE, Patna under Government of Bihar  
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**Mobile No:** +917982912807



## **Goals:**

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To stay in academia and work on research that benefits society and industry while also exploring fundamental topics. I aim to teach and share my knowledge with the next generation, helping them develop the skills, confidence, and strong ethical values needed for high-quality scientific research.

## **Academic Backgrounds:**

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**Ph.D** in Materials Science & Engineering from IIT Delhi (2020);

- **Title of Thesis-** “Effect of Strain path change on the static recrystallization behavior of cold deformed Mg-6Al-3Sn magnesium alloy”
- **Supervisors**
  1. Prof. Rajesh Prasad (Professor), Dept. of Materials Science & Engineering; IIT Delhi
  2. Prof. Jayant Jain (Professor), Dept. of Materials Science & Engineering; IIT Delhi

**M.Tech** in Production Engineering from DTU Delhi (2012);

- **Title of Thesis-** “Some Studies on Development of Ductile Conventional Cast Magnesium-Based Alloys”
- **Supervisors**
  1. Prof. N. Yuvraj (Professor), Dept. of Mechanical Engineering; DTU Delhi
  2. Dr. K.L. Sahoo (Senior Principal Scientist), CSIR-NML; Jamshedpur

**B.Tech** in Manufacturing Engineering from NIFFT Ranchi (2009);

## **Teaching and research Interests:**

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**Teaching Subjects:**

- Materials Science & Engineering
- Manufacturing Science

- Workshop Technology
- Vehicle Body Engineering and Safety
- Industrial Engineering
- Tribology
- Engineering Graphics

#### **Interest of new subjects:**

- Additive Manufacturing
- Micro and Nano Manufacturing
- Computational Material Science
- Finite Element Method (FEM)
- Machine learning (ML) & Artificial intelligence (AI)
- Fractography

#### **Research area:**

My research interests lie in the field of manufacturing engineering and metallurgy, where I aim to address the challenges of developing and optimizing novel and/or existing materials and processes for various industrial applications. My past research has focused on the development and optimization of magnesium alloys for various industrial applications. I have been involved in several research projects on Mg-alloys related to alloy development, tribological behavior, casting, metal foam, and processing such as rolling, forging, etc. The following area has been covered and is of my interest.

- Material characterization (Structure-Mechanical Correlations)
- Metal forming
- Casting: Alloy development
- Welding
- Crystallographic texture
- Physical and mechanical Metallurgy

#### **Academic & Research Experience (9 years):**

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- **Assistant Professor** – Mechanical Engineering Department; Govt. Engineering College, Buxar (March, 2024- till date)
- **Assistant Professor** - KIET Group of Institutions, Ghaziabad, UP (June, 2019- March, 2024)
- **Guest lecturer** - Mechanical Engineering Department; DTU Delhi (Jan 2018- Dec 2018)
- **Assistant Professor** - Manav Rachna Engineering College, Faridabad (Aug 2012- Dec. 2012)
- **Junior Research Fellow (JRF)** - CSIR-NML, Jamshedpur (2009-2012)

#### **Scholarly profiles:**

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- **ORCID ID:** 0000-0002-2819-7744
- **Google Scholar:** aLPhK78AAAAJ
- **SCOPUS ID:** 58034080900

## Publications:

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1. **Gaurav Singh**, Purnashis Chakraborty, Vikrant Tiwari; “A comparative study of different constitutive models to predict the dynamic flow behaviour of a homogenised AT61 magnesium alloy” **Structures** 54; 631–643, 2023; <https://doi.org/10.1016/j.istruc.2023.05.074>
2. **Gaurav Singh**, Purnashis Chakraborty, Shanta Mohapatra, Vikrant Tiwari “Effect of strain path change on static Recrystallization behavior of AT63 magnesium alloy” *Journal of Materials: Design and Applications*, 237(9); 2030–2045; 2023 <https://doi.org/10.1177/14644207231170461>
3. **Gaurav**, Purnashis Chakraborty, Vikrant Tiwari “Constitutive behaviour of a homogenized AT61 magnesium alloy under different strain rate and temperature: An experimental and numerical investigation”. *ASCE's Journal of Materials in Civil Engineering*. 35,9, 0402331 4-(1-15) ; 2023 ; <https://doi.org/10.1061/JMCEE7.MTENG-15799>
4. **Gaurav**, Purnashis Chakraborty, Vikrant Tiwari "Influence of Sn and Zn on age-hardening behavior of Mg-6Al magnesium alloy". *Canadian Metallurgical Quarterly*. 63,1, 12-22; 2023 <https://doi.org/10.1080/00084433.2023.2169994> (ISSN: 0008-4433)
5. Deepak Kumar · G. A. Harmain · **Gaurav Gaurav** · K. P. Lijesh · Basil Kuriachen · Harish Hirani· Jibin T. Philip "A Novel Seal Design to Enhance MR Brake Performance". *Transaction of Indian Institute of Metals*. 76,(9), 2335–2342; 2022 <https://doi.org/10.1007/s12666-022-02848-3> (ISSN:0972-2815)
6. **Gaurav**, Purnashis Chakraborty, Vikrant Tiwari; Recrystallization, concurrent precipitation, and texture evolution in a cold deformed Mg-alloy; *Canadian Metallurgical Quarterly*; 62,3, 408-420; 2022, <https://doi.org/10.1080/00084433.2022.2102307>
7. **Gaurav Gaurav**, R. Sarvesha, Sudhanshu S. Singh, Rajesh Prasad, and Jayant Jain; Study of static recrystallization behaviour of a Mg-6Al -3Sn (AT63) Alloy, *Journal of Materials Engineering and Performance* 28 (6), 3468-3477, 2019 <https://link.springer.com/article/10.1007/s11665-019-04104-0>
8. D Mandal, L Murmu, C Chaudhary, **G Gaurav**, KL Sahoo; Influence of alloying elements and grain refiner on microstructure, mechanical and wear properties of Mg-Al-Zn alloys; *Canadian Metallurgical Quarterly* 58 (2), 241-251, 2019, <https://doi.org/10.1080/00084433.2018.1540087>
9. **G Gaurav**, Q Murtaza, N Yuvraj, D Mandal, KL Sahoo, L Murmu; Synthesis and effect of Misch metal on mechanical properties of conventional cast Mg–Al–Zn–Sn–Pb alloy system; *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*; 231 (7), 627-637; 2017 <https://journals.sagepub.com/doi/abs/10.1177/1464420715606168>

## Conferences/Presentations/Workshops/FDPs:

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1. Presented a Paper on “Microstructure evolution as a function of annealing temperature in a cold rolled magnesium alloy Mg - 6 wt% Al - 3 wt % Sn (AT63) alloy” at BITS Pilani, K. K. Birla Goa Campus, Goa, India on 4-6<sup>th</sup> July 2018.
2. Presented a poster on “Quantitative analysis of recrystallized volume fraction and microstructure evolution of annealed cold rolled magnesium alloy” at ICME conference, held at IIT Kanpur; June 2017.
3. Short Term Course in “Crystallography and Defects” by Prof. Kevin Knowles of University of Cambridge held on 12-16 December 2016 at IIT Delhi.
4. NRC-M Workshop on “Texture of Materials” held on 15-19 February 2015 at IISC Bangalore.
5. Presented a paper “Magnesium Based Alloy system –A Review” in Indian Society for Technical Education (ISTE), DTU, Delhi September 5-6, 2013
6. Presented a paper in National seminar at BRCM College of Engg & Tech, Bahal, Bhiwani (Haryana) in Feb,2010 on "Rheocasting- a new advanced manufacturing technology"
7. Kartik Ruhela, **Gaurav**, Navish Chandra, Rahul Rawal, Siddharth Sharma, Age hardening behaviour of AZ61 alloy; Volume 64, Part 3, 2022, Pages 1333-1338; Materials today: Proceedings; 2<sup>nd</sup> International Conference, Innovative Technologies in Mechanical Engineering; ITME-2021; <https://doi.org/10.1016/j.matpr.2022.04.211>
8. **Gaurav**, Purnashis Chakraborty, S.B.Prasad Vejendla, Deformation and Annealing of Brass; Volume 64, Part 3, 2022, Pages 1380-1383; Materials today: Proceedings; 2<sup>nd</sup> International Conference, Innovative Technologies in Mechanical Engineering; ITME-2021; <https://doi.org/10.1016/j.matpr.2022.04.502>
9. **Gaurav Gaurav**, Purnashis Chakraborty, Effect of annealing on the microstructure evolution of a cold rolled Mg-6Al-3Sn alloy;\_Volume 64, Part 3, 2022, Pages 1318-1321, Materials today: Proceedings; 2<sup>nd</sup> International Conference, Innovative Technologies in Mechanical Engineering; ITME-2021; <https://doi.org/10.1016/j.matpr.2022.04.200>
10. Workshop on Universal Human Value on the theme “Inculcating Universal Human Values in Technical Education” during 23-27, July 2020 as organized by All India Council for Technical Education (AICTE) at KIET Group of Institutions, Ghaziabad.
11. Successfully participated in the IP Awareness and Training Program under the National Intellectual Property Awareness Mission (NIPAM), organized by the Intellectual Property Office, India, on 31<sup>st</sup> January, 2022.
12. 5 Days FDP on “Trends and Advances in Mechanical Engineering”, Organized by Department of Mechanical Engineering, SS college of Engineering, Kota from 07-11<sup>th</sup> February, 2022.
13. National Webinar Series on “Aerospace Materials & Applications” Organized by Department of Mechanical Engineering, Shiv Nadar University, Delhi NCR on 25-27<sup>th</sup> February, 2022.

14. Faculty Development & Executive Program (FDEP) on “Emerging Trends in Mechanical Engineering (ETME)” organized by Department of Mechanical Engineering, Zakir Husain College of Engineering & Technology, AMU, Aligarh from 07- 11<sup>th</sup> March, 2022.
15. One Week Faculty & Executive Development Programme (FEDP) on “Application of Optimization Techniques in Engineering (AOTE)” Organized by Department of Mechanical Engineering, Zakir Husain College of Engineering and Technology, Aligarh Muslim University, Aligarh from 28<sup>th</sup> March to 1<sup>st</sup> April, 2022.
16. IP Awareness and Training Program under the National Intellectual Property Awareness Mission (NIPAM), organized by the Intellectual Property Office, India, on 5<sup>th</sup> January, 2023.
17. Faculty Development Program (FDP) on “8-day Face-to-Face UHV-II FDP organized by All India Council for Technical Education (AICTE) at KIET Group of Institutions, Ghaziabad from 31<sup>st</sup> July to 7<sup>th</sup> August 2023.
18. Successfully completed the one-week institutional Training Programme at the Bihar Institute of Public Administration and Rural Development (BIPARD), Gaya from 09- 14<sup>th</sup> December, 2024.
19. One Week Comprehensive Workshop titled “Innovations & Applications in Engineering Materials” in collaboration with Defence Research and Development Organization (DRDO) organized by Department of Mechanical Engineering, KIET Ghaziabad from 03 to 07 February, 2025.

### **Book Chapter:**

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**Gaurav.** "Advanced Welding Techniques Current Trends and Future Perspectives." Various Advanced Welding Methods: A Brief Overview (pp. 22-37), 2024. Edited by Himanshu Vashishtha, Deepak Kumar and Ravindra V. Taiwade. Taylor & Francis; CRC Press; eBook ISBN: 9781003435884; <https://doi.org/10.1201/9781003435884>.

### **Reviewer:**

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- Peer reviewing a Book Chapter entitled “Experimental evaluation of MHD modeling of EMS during continuous casting” (December, 2023).
- Review a Book Chapter entitled “Effect of Zinc and Severe Plastic Deformation on Mechanical Properties of AZ61 Magnesium Alloy” (July, 2024).
- Review a Book Chapter entitled “Defect Evolution in EBM Additively Manufactured Ti-6Al-4V via In Situ Investigations” (September, 2024).

### **Academic Awards and Achievements:**

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- Secured 98.7 percentile in Graduate Aptitude Test Examination (GATE) 2009 in Mechanical Engineering conducted by IISc Bangalore and IITs.
- Selected as Junior Research fellow (JRF-GATE) in CSIR-NML, Jamshedpur.

- Awarded JRF- GATE fellowship from Human Resource Development Group (HRDG), Govt. of India, from August, 2009 to August, 2012.
- Awarded Ph.D fellowship (Jan. 2013 to Dec.2018) from MHRD, Govt. of India at IIT Delhi.
- Interview call from many PSU'S and Research organization (Damodar Valley Corporation (DVC), 2009 at Kolkata; ISRO- 2009 at Kolkata; ISRO – 2010 at Delhi; CSHPCL- 2011 at Raipur; SAIL- 2012 at Delhi; GAIL-2012 at Delhi; ISRO-2012 at Bangalore).
- Secured 8<sup>th</sup> Position at Bihar Public Service Commission (BPSC) for the post of Assistant Professor (Mechanical Engineering) in 2017.
- Selected as a “Research Faculty Professor” at KIET Group of Institution in August, 2022.

## References:

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- Prof. Rajesh Prasad; Materials Science Dept., IIT Delhi, Hauz Khas, New Delhi – 110016; Mob: 9818538085; email: [rajesh@iitd.ac.in](mailto:rajesh@iitd.ac.in), [rajesh.prasad.iitd@gmail.com](mailto:rajesh.prasad.iitd@gmail.com)
- Dr. K. L. Sahoo; Principal Scientist, CSIR-NML, Burmahmamines, Jamshedpur- 831007; Mob: 7488192403; email: [klseh@nmlindia.org](mailto:klseh@nmlindia.org), [klsehoo@gmail.com](mailto:klsehoo@gmail.com)
- Prof. Vikrant Tiwari; Applied Mechanics Dept., IIT Delhi, Hauz Khas, New Delhi – 110016; Mob: 9650276197; email: [tiwariv@am.iitd.ac.in](mailto:tiwariv@am.iitd.ac.in)

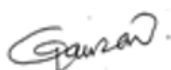
## Personal profile:

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<b>Date/Place of Birth:</b>	14.02.1984/Patna
<b>Father's Name :</b>	Devendra Prasad Singh
<b>Address :</b>	At+P.O- Khajurar, P.S- Bhadaur, Dist.- Patna, Bihar- 803213

I hereby declare that the information given herewith is correct to my knowledge and I will be responsible for any discrepancy.

Date: 26-Feb-2025



Dr. Gaurav