

CURRICULUM VITAE

Dr. PRADEEP SINGH

Assistant Professor, Department of Mechanical engineering

Address for Correspondence

EWS/09, Godavari Green, Puranpura, Vidisha, Madhya Pradesh (464001)

☎ (Mobile No.): +91 7987186738

✉ (Email): erpradeep3408@gmail.com, pradeepsingh.mech@satiengg.in

ORCID ID: 0000-0003-2864-3262

Google Scholar Link:

https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=cjxu6t0AAJ

Researchgate ID:

<https://www.researchgate.net/profile/Pradeep-Singh-69>



EDUCATION:

Integrated Direct PhD in Material Science/Manufacturing (Aug. 2014 – Feb. 2020) from AcSIR, CSIR-AMPRI Bhopal, India

- **Thesis Title:** *Ti alloy foam synthesized using mechanically alloyed powder through space holder technique: Study of compressive deformation and corrosion behaviour.*

Bachelor of Technology (B. Tech.)

- Mechanical Engineering (Aug 2008- July 2012) from Institute of Engineering and Technology, M.J.P. Rohilkhand University, Bareilly, Uttar Pradesh

Board of Secondary Education, Uttar Pradesh, India

- **H.S.S.C.** (12th Class) passed in 2008 with 69% from M.T. Inter College, Chandauli, Uttar Pradesh

SPECIALIZATION:

Powder Metallurgy, Biomaterials, Composite, Corrosion

ACADEMIC/INDUSTRIAL EXPERIENCE:

S.N	Employer	Position held	From	To	Experience (Year)
1	Samrat Ashok Technological Institute, Vidisha, Madhya Pradesh	Assistant Professor	27/02/2020	Continue	3

SUBJECTS TAUGHT:

Basic Mechanical Engineering, Material Science, Manufacturing Processes I & II, Unconventional Machining, Mechanics and Strength of Materials, Industrial Tribology

PUBLICATION:

- 1. Pradeep Singh**, Amit Abhash, Bishnu Nand Yadav, M. Shafeeq, I. B. Singh, D. P. Mondal, “Effect of milling time on powder characteristics and mechanical performance of Ti4wt%Al alloy” Powder Technology, 342 (2019) 275-287. <https://doi.org/10.1016/j.powtec.2018.09.075>
- 2. Pradeep Singh**, I.B. Singh, D. P. Mondal, “A comparative study on compressive deformation and corrosion behaviour of heat treated Ti4wt%Al foam of different porosity made of milled and unmilled powders”, Materials Science and Engineering: C, 98 (2019) 918-929. <https://doi.org/10.1016/j.msec.2019.01.054>
- 3. Pradeep Singh**, Amit Abhash, Prashant Nair, Anup Khare, I.B. Singh, D. P. Mondal “Effect of Space Holder Size on Microstructure, Deformation and Corrosion Response of Ti4Al4Co (wt%) Alloy Foam” Applied Innovative Research, Vol 1, No 1 (2019). <https://doi.org/10.56042/air.v1i1.24750>
- 4. Pradeep Singh**, Amit Abhash, Vikas Shrivastava, Bishnu Nand Yadav, I. B. Singh, D. P. Mondal, “Compressive deformation and Corrosion behaviour of moderate to highly porous Ti4Al4Co (wt%) alloy foam” Materials Chemistry and Physics, 257 (2021), 123718. <https://doi.org/10.1016/j.matchemphys.2020.123718>
- 5. Pradeep Singh**, Vikas Shrivastava, Shashank K Shrivastav, I. B. Singh, Pankaj Agarwal, D. P. Mondal, Microstructural evolution, compressive deformation and corrosion behaviour of thermally oxidized porous Ti4Al4Co alloy made of mechanically alloyed powder, Materials Chemistry and Physics, (2021), 124199. <https://doi.org/10.1016/j.matchemphys.2020.124191>
- 6. Pradeep Singh**, Vikas Shrivastava, I.B. Singh, D.P. Mondal, “Effect of mechanical alloying and sintering environment on the crystallographic evolution, microstructure, mechanical and corrosion properties of porous Ti4Al4Co alloy” Metals and Materials International, ISSN 2005-4149. <https://doi.org/10.1007/s12540-021-01033-3>
- 7. Pradeep Singh**, Pankaj Agarwal, JP Shakya, DP Mondal, “Effect of Ball Powder Ratio on microstructure and compressive behaviour of porous Ti-4wt %Al alloy”, IOP Conference series: Materials Science & Engineering ,1136. <https://doi.org/10.1088/1757-899X/1136/1/012065>
- 8. Pradeep Singh**, Pankaj Agarwal, I.B. Singh, D.P. Mondal, “An Overview of Human Bone, Biomaterials and Implant Manufacturing” Book Chapter: Manufacturing and Industrial Engineering: Theoretical and Advanced Technologies, CRC press, ISBN: 978-0-367-54174-3. <https://doi.org/10.1201/9781003088073>
- 9. Pradeep Singh**, AK Tuli, S.Das, D.P. Mondal, “Analysis of microstructural, mechanical and thermal behaviour of thixocast LM25-10wt%SiC composite at different processing temperatures” Accepted, Sadhana – Academy Proceedings in Engineering Science. <https://doi.org/10.1007/s12046-021-01757-3>

10. **Pradeep Singh**, Amit Abhash, Dilip Muchhala, Rajeev Kumar, Gaurav K. Gupta, DP Mondal, “Research into the change of macrostructure, microstructure and compressive deformation response of Ti6Al2Co foam with Sintering Temperatures and space holder contents”. *Materials Letters*, 261 (2020), 126997. <https://doi.org/10.1016/j.matlet.2019.126997>
11. Amit Abhash, **Pradeep Singh**, Dilip Muchhala, Rajeev Kumar, Gaurav K. Gupta, DP Mondal “ Effect of Al addition and Space Holder content on Microstructure and Mechanical properties of Ti2Co alloy foams for bone scaffold application” , *Materials Science and Engineering: C*, 109 (2020), 110600. <https://doi.org/10.1016/j.msec.2019.110600>
12. Amit Abhash, **Pradeep Singh**, Dilip Muchhala , Rajeev Kumar, Gaurav K. Gupta, DP Mondal “Study of newly developed Ti-Al-Co alloys foams for bio-implant application” , *Materials Science and Engineering: A*, 774 (2020), 138910. <https://doi.org/10.1016/j.msea.2020.138910>
13. Vikas Shrivastava, **Pradeep Singh**, Gaurav K Gupta, Shashank K Shrivastava, I.B. Singh, “Synergistic effect of heat treatment and reinforcement content on the microstructure and corrosion behavior of Al-7075 alloy based nanocomposites” *Journal of Alloys and Compounds*. <https://doi.org/10.1016/j.jallcom.2020.157590>
14. Vikas Shrivastava*, Gaurav K Gupta, Hemant Jain, D.V. Mangal, **Pradeep Singh***, I.B. Singh, “Novel synthesis approach of making efficient nanocomposite via powder metallurgy route: Study of microstructure and mechanical properties” *Manufacturing Letters*, ISSN: 2213-8463. <https://doi.org/10.1016/j.mfglet.2021.06.001>
15. B.N. Yadav, **Pradeep Singh**, Rajeev Kumar, Ashutosh Pandey, D.P. Mondal, “LM13-SiC-CNT Hybrid Composite Foam Through Stir Casting Technique” *Indian Foundry Journal*, 63 (2017) 17-22.
16. B.N. Yadav, Dileep Muchhala, **Pradeep Singh**, A.N.Ch. Venkat, D.P. Mondal, “Synergic effect of MWCNTs and SiC addition on microstructure and mechanical properties of closed-cell Al-SiC-MWCNTs HCFs” *Composites Part B: Engineering*, 172 (2019) 458-471. <https://doi.org/10.1016/j.compositesb.2019.05.041>
17. B. N. Yadav, Dilip Muchhala, **Pradeep Singh**, Gaurav Gupta, A. N. Ch. Venkat, D. P. Mondal “Compressive Deformation Behavior of Al-SiC-MWCNTs Hybrid Composite Foam Through Factorial Design of Experiments” *Trans Indian Inst Met*, 73 (2020), 223-234. <https://doi.org/10.1007/s12666-019-01825-7>
18. B. N. Yadav, Dilip Muchhala, **Pradeep Singh**, D. P. Mondal, Fabrication of ultra-light LM13 alloy hybrid foam reinforced by MWCNTs and SiC through stir casting technique, *Materials letter*, 279 (2020), 128271. <https://doi.org/10.1016/j.matlet.2020.128271>
19. **Pradeep Singh**, Shashank K Shrivastava, Vikas Shrivastava, D.P. Mondal, “Existence of advanced ceramic materials in human life” 2022/1/1, *Advanced Ceramics for Versatile Interdisciplinary Applications*, Elsevier, 1-14. <https://doi.org/10.1016/B978-0-323-89952-9.00013-0>

20. **Pradeep Singh**, JP Shakya, Pankaj Agarwal, Sanjay Jain, D.P. Mondal, Karan Singh Varma, “Synthesis of Lightweight Metallic foam and their applications in various engineering sectors” 2022/05, Lightweight Advanced Materials, Springer Nature. https://doi.org/10.1007/978-981-19-7146-4_3
21. **Pradeep Singh**, Surendra Kumar, J.P. Shakya, S.K. Panthi, “Effect of process parameters on springback, wrinkles and cracks in different flanging processes: A review, 2022, IOP Science, Advances in Mechanical Engineering 2022. <https://doi.org/10.1088/1757-899X/1259/1/012014>
22. **Pradeep Singh**, JP Shakya, Sunil Jamra, Nikhil Goyal, Shakuntala Chauhan “Compressive deformation and electrochemical analysis of Ti₄Al_xCo alloy” Materials Today Proceedings, Aug, 2022. <https://doi.org/10.1016/j.matpr.2022.07.436>
23. **Pradeep Singh**, RM Saxena, JP Shakya, “Troubleshooting on the sample preparation during Fused Deposition Modelling”, Forecasting the Future of Industry 4.0, 2, June-2023, <https://doi.org/10.1201/9781003333760>

Patent published/Granted:

1. Development of supervisory system for telemetry of a fluid pump using Arduino and express-PCB, Application no.202241054044

Conference presentation/participation:

1. **Pradeep Singh**, Bhupendra Raikwar, D. P. Mondal, “Effect of mechanical alloying on mechanical parameters of Ti-2Al foam synthesized through powder metallurgy route using space holder for replica of cancellous bone” oral presentation delivered at the International Conference on Materials Science & Technology (ICMTech), **University of Delhi**, 01-04 March, 2016.
2. **Pradeep Singh**, I. B. Singh, D. P. Mondal, “Compressive deformation response of Ti₄Al Foam prepared through powder metallurgy route using milled alloy powder, poster presentation delivered at 54th national metallurgist day and 70th annual technical meeting, **IIT Kanpur**, 11-14 November, 2016.
3. **Pradeep Singh**, Amit Abhash, Prashanth Nair, Anup Khare, I.B. Singh, D.P. Mondal, “Effect of Space Holder Size on microstructure, deformation and corrosion response of Ti₄Al₄Co alloy Foam” oral presentation delivered at National conference of Advanced Materials, Manufacturing and Metrology (NCAMMM-2018), **CSIR-CMERI, Durgapur**, February 16 -17, 2018.
4. **Pradeep Singh**, I.B. Singh, D.P. Mondal, “ Crystallographic and microstructural evolution of Ti-2Al-0.2 nano TiO₂ milled powder mixture with milling time and their effects on mechanical parameters of the foam made by the use of milled powder” oral presentation delivered at Advances in Smart and Functional Materials (ASFM), **CSIR-AMPRI, Bhopal**, January 13-14, 2017.

5. **Pradeep Singh**, Bhupendra Raikwar, D. P. Mondal, “Effect of process parameters for mechanical alloying on Ti4Al open cell foam” poster presentation delivered at **CSIR- Advanced Materials and Processes Research Institute**, Bhopal, 29-31 December, 2015.
6. **Pradeep Singh**, Pankaj Agarwal, I.B. Singh, D.P. Mondal, “An overview of human bone, biomaterials, and synthesis of porous bone implant”. Oral presentation delivered at International conference on Advances in Mechanical Engineering (ICAME), Samrat Ashok Technological Institute, Vidisha, July 9th- July 10th.
7. **Pradeep Singh**, JP Shakya, “Compressive deformation and electrochemical analysis of Ti4AlxCo alloy” oral presentation delivered at 4th ICASPCT International conference, OPJU, Raigarh, 26-27 May, 2022.
8. **Pradeep Singh**, Pankaj Agarwal, JP Shakya, D.P. Mondal “Effect of Ball Powder Ratio on microstructure and compressive behaviour of porous Ti-4wt %Al alloy” IC4M international conference held online mode at 6-7 March 2021.
9. **Pradeep Singh**, D.P. Mondal “Effect of nano-alumina particle addition on the mechanical and sliding wear behaviour of aluminium alloy” National Conference on Tribology: Energy Environment & Efficiency, , CSIR-AMPRI, Bhopal.
10. **Pradeep Singh**, **JP Shakya**, “Synthesis of porous Ti alloys through space holder technique and influence of various process parameters on mechanical properties: A review”, oral presentation delivered at 4th ICASPCT International conference, OPJU, Raigarh, 26-27 May, 2022

List of Workshops / Short Term Courses/Training Programs / Faculty Development Programs attended:

1. International Faculty Development Program (Online) on “**Research and Development in Materials Behaviour, Processing and Characterization Techniques (RDMBPCT-2020)**” Organized by Department of Mechanical Engineering, **GLA University, Mathura** and association with India Institute of Metals (IIM), Mathura Chapter and Panjab University, Chandigarh, India from 9th to 14th June 2020.
2. National Faculty Development Program (Online) on “**Recent Advances in 3 D Printing Technology**” Organized by the Department of Mechanical Engineering, **Dhanekula Institute of Engineering and Technology Ganguru Vijayawada**, Andhra Pradesh (A. P.), India from 4th to 8th June 2020.
3. Workshop on “**Application of MATLAB in Mechanical Engineering Analysis**” Organized by Department of Mechanical Engineering at **MANIT Bhopal**, M. P., India from 23rd to 27th December 2019.
4. Workshop on “**Recent Advancement of Lightweight Materials**” Organised by Oriental Institute of Science and Technology, Madhya Pradesh, Bhopal, India on Tuesday 30th June, 2020.

5. Webinar on “**Smart Manufacturing**” Organised by Department of Industrial and Production Engineering, Shri G.S. Institute of Science and Technology, Indore, India on 1st June, 2020.
6. One week International Faculty Development Program on “**Role of Materials and Processing in Additive Manufacturing: 3D printing to Industry-2020**”, organised by GLA University, Mathura, India, from 19th July to 24th July-2020.
7. Three days online faculty development program on “**Design for Advance Manufacturing**” Organised by Department of Mechanical Engineering, Oriental Institute of Science and Technology, Madhya Pradesh, Bhopal, India on 15th June to 17th June-2020.
8. Online Tech Web series 2020 on “**Excellence in Nano Technology**” Organised by Department of Nano Science and Technology, K.S. Rangasami College of Technology, Tiruchengode, India, from 26th May to 06th June 2020.
9. Three days online workshop on “**Education 4.0 Session II**” Organised by IQAC, Atharva College of Engineering, held on 28th to 30th May 2020.
10. Webinar on “**Transformation of Education: Challenges and Opportunity in post COVID-19 scenario**” Organised by IES University, Bhopal, India, on 18th June-2020.

INDUSTRIAL TRAINING/PROJECTS:

1. CSIR-800 Project Title: “**Energy audit of Nadore Village, Madhya Pradesh (GHGs) using Participatory Rural Appraisal (PRA) method**” under CSIR-800 Project in the year 2015 at AcSIR, CSIR-AMPRI, Bhopal, India.
2. Summer Vacation Training from 02/07/2010 to 31/07/2010 in Central Tool Room and Training Centre, Bhubaneswar, India on different manufacturing Process.
3. Advance Certificate course of “**CATIA**” from 01/07/2010 to 31/07/2010 in Central Tool Room and Training Centre, Bhubaneswar, India.
4. 41 days short term industrial training at BOX-N Training Centre, East Central Railway, Mughalsarai, Uttar Pradesh, India from 20/06/2011 to 30/07/2011.

NPTEL/SWYAM/MOOC

- “Python for Everyone”, Coursera, University of Michigan, Dec. 2022
- “Manufacturing Process I&II”, NPTEL, Dec 2021

- “Finite Elements Methods I”, NPTEL, Oct. 2022

ADMINISTRATIVE RESPONSIBILITY:

- Departmental representative of NAAC
- Member of IQAC
- Tutor Guardian of the Mechanical Engineering Students

AWARDS AND HONOURS:

- Qualified GATE in the years **2011, 2012, 2013, 2014 and 2015** with maximum percentile of 96.6.
- **Best paper presentation award** in ICASPCT international conference held on 25-26 June, 2022.
- **Best paper presentation award** in IC4M international Conference, 06-07 March 2021.
- **Best poster and oral presentation award** at CSIR-AMPRI, Bhopal at National Science Day.
- Received “**Best Researcher award**” on behalf of World Research Council
- Honoured for excellent performance in Ph.D. course work.
- TOPPER OF MANUFACTURING PROCESS I & II COURSE, NPTEL, 2022

KNOWLEDGE OF SOFTWARE/CHARACTERIZATION TECHNIQUES/TESTING MACHINES:

- **Software:** MS office, Origin, High Score Plus, abaqus
- **Operating of Testing Machine:** Universal Testing Machine (UTM), Double Acting Hydraulic Press Machine (30 kN + 20 kN = 50 kN), Field Emission Scanning Electron Microscopy (FESEM), High Temperature Vacuum Furnace, Potentiostat, High Energy Planetary ball Mill, Vickers Hardness Tester, Diffraction Scanning Calorimetry.

MEMBERSHIP OF PROFESSIONAL BODIES:

- Lifetime active member of Vigyan Bharati (VIBHA).
- Lifetime active member of Indian Institute of Metals (IIM), India
- Lifetime member of World Research Council

AREA OF INTEREST:

- Biomaterials

- Nanocomposite
- Graphene and Carbon Nano Tube (CNT)
- Additive manufacturing

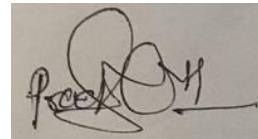
I consider myself as systematic, sincere, hardworking and motivated towards research and want to be part of global technology growth

REFERENCES:

1. **Dr. Dehi Pada Mondal**, Chief Scientist & HOD, Department of Light Weight Metallic Materials Group, CSIR-AMPRI, Bhopal, India
Email: mondaldp@ampri.res.in, mondaldp@yahoo.com
2. **Dr. I.B. Singh**, former Chief Scientist, Materials Characterization Department, CSIR-AMPRI, Bhopal, India
Email: ibsingh58@yahoo.com

DECLARATION:

I here solemnly declare that all information furnished above is true to the best of my knowledge.



(PRADEEP SINGH)

Place: Vidisha, India