



Dr Manish Oraon
Associate Professor

Centre/School/Special Centre: School of Studies, Engineering & Technology, GGV, Bilaspur, C.G. 495009

Department: Department of Industrial and Production Engineering

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Google Scholar Link:

<https://scholar.google.com/citations?user=wcAsDrkAAAAJ&hl=hi>

Qualifications

PhD, Production Engineering, Birla Institute of Technology, Mesra, Ranchi, Jharkhand, 2019.

MBA, Marketing Management, Indira Gandhi National Open University (IGNOU), 2013.

ME, Automated Manufacturing system, B.I.T. Mesra, Ranchi, Jharkhand, 2005.

B.Tech, Manufacturing Engineering, National Institute of forge and foundry Technology, Ranchi, 2003.

Area of Interest/Specialization

Manufacturing Processes, Design of Machine Element, Operation Research, Metallurgy, Statistical Quality Control, Material Deformation Processes, Competitive Manufacturing Strategy,

Experience

1. School of Studies in Engineering and Technology, Guru Ghasidas Vishwavidyalaya (Central University), Bilaspur
Designation: **Associate Professor**
Department: Industrial & Production Engineering
Period: 01st April 2024 to till date
 2. Birla Institute of Technology, Mesra, Ranchi
Designation: **Assistant Professor**
Department: Production and Industrial Engineering
Period: 22nd March-2007 to 31st March 2024
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Awards and Honors

- [1] **Research Leadership Award of the Year 2020 (Distinguished Researcher-EMR in Precision Forming)**, International Journal for Research under Literal Access (IJRULA) in association with **World Research Council** in the fascinating ceremony on **Jan 26, 2020**.
- [2] **International Best Research award of the year 2022 (Remarkable Researcher- An evolutionary anthropometric study and its impact on strength)**, ISSN International Research Awards (**IIRA-2022**) in association with **World Research Council** in the fascinating ceremony on **June 4, 2022**.
- [3] **Best research Paper Award, An evolutionary anthropometric study and its impact on strength**, *International Conference on Applied Research and Engineering (ICARAE 2021)*, Department of Mechanical Engineering, Cape Peninsula University of Technology, Cape Town, Western Cape on the 26-28 November 2021
- [4] **Best research Paper Award, Schematic Approach to Measure Tool Wear in the Incremental Sheet Forming**, *International Conference on Industrial Engineering and Management (ICIEM-2021)*, Department of Mechanical Engineering, MNIT Jaipur on the 17th – 19th December 2021
- [5] Manish Oraon, **Predicting the deformation force in the incremental sheet forming of AA3003**, *International Conference on Aspects of Materials of Materials Science and Engineering (ICAMSE 2021)*, PTU Chandigarh, Dec. 05th-06th, 2021

Research Projects:

Title: Investigation of the forming behaviour of high strength thermal resistant (HSTR) Metals/alloys through incremental sheet metal forming (File: EEQ/2021/000665)

Role: Principal Investigator(PI)

Funding Agency: SERB, DST

Term: 36 months

Amount: 5254194/- Lacs

Patent:

Workstation Furniture (Patent Registration: 2021103041, Australian Government)

Member of Editorial Board

- [1] Frontiers in Ocean Engineering, <http://www.frontiersin.org>

Member of Professional Bodies

- [1] Associate Member, Institution of Engineers, India (AM100067-8)
[2] Life Member, Indian Society for Technical education (LM 100336)

PhD Supervision

- [1] Anulal Mahto, *Work Design for Competitive Advantages in Manufacturing Environment*, Department of Production Engineering, BIT Mesra. (2022) (Completed)
[2] Ranjeet Prasad, *Investigation of forming behaviour of high strength thermal resistant (HSTR) metals and alloys in Incremental sheet metal forming*, Department of Production and Industrial Engineering, BIT Mesra. (Pursuing)

PG Dissertation

- [1] Bittu Toppo, *Integration of sun tracking system to solar powered stirling engine for improving efficiency*, Department of Mechanical Engineering, Cambridge Institute of Technology, Tatisilwai, Ranchi, (2016)

UG Project

- [1] Rakhi Kumari, *Investigation Into The Process Parameters of WEDM*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2016)
[2] Archana and Neha Raj, *Prediction of Material Removal Rate in End Milling Process using Artificial Neural Network*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2017)
[3] Nikhil Piyush, Nitish Kumar and Kishan Kumar, *Analytical Study of Turning Operation for the Optimization of Surface Roughness*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2017)
[4] Fanee Bhushan Kumar and Aayush Kumar, *Analysis for Stress Prediction In Hot Rolling By Finite Element Method*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2018)
[5] Sanjeet Kumar, *Optimization of Extrusion Process of Aluminum Grade AA3003-O*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2018)

- [6] Shubham Verma and Pranoy kr Das, *Optimization of Machining Parameters in Turning of Aluminum 6063 (H9) By Taguchi Technique*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2019)
- [7] Aprajita Rashmi and Aryan Raj, *Implementation of Internet of Things (IoT) in Human Sensing Fan*, Department of Production Engineering, BIT Mesra Off Campus Patna (2019)
- [8] Aditya Shekhar and Shubham Kumar, *Analysis for Stress Prediction in Rolling of Rail Tracks By Finite Element Method*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2020)
- [9] Snigdha Kumar and Aditi Priya, *Automated Irrigation System Using Solar Power*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2021)
- [10] Jyoti Prakash and Aditya Kr Singh, *Investigation of the effect of the Input Parameters on Plain Turning of Aluminum Al6061*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2021)
- [11] Vivek Aaryan and Ahijeet Kumar, *Prediction of Surface Roughness of Plain Turned AA6061 Through Artificial Neural Network*, Department of Production Engineering, BIT Mesra Off-Campus Patna (2021)
- [12] Duggana Sanjana, Deepti Soren, *Artificial Intelligence Based Multi-Objective Optimization of Manufacturing Processes*, Department of Production and Industrial Engineering, BIT Mesra (2023)

Best Peer Reviewed Publication:

- [1] **Manish Oraon**, Ranjeet Prasad and Vinay Sharma, **Investigating the effect of input parameters on tool wear in incremental sheet metal forming**, Int. J. Mater. Res. 2023; Vol. 114, Issue 10–11, PP. 1006–1011, <https://doi.org/10.1515/ijmr-2022-0223>
- [2] **Manish Oraon**, Vinay Sharma, **Deriving the Functional Relation of input parameters in single-point incremental forming through Dimensional Analysis**, Frontiers in Mechanical Engineering, Vol. 8, pp 1-10, <https://doi.org/10.3389/fmech.2022.1003456>. IF 4.528
- [3] **Manish Oraon**, Anulal Mahto, **Statistical Analysis on the Body Flexibility of the Laborer of the Indian Service Sector**, International Journal of Ambient Computing and Intelligence, Vol. 13 (1), pp 1-9, (2022), ISSN: 1941-6237, IF: 3.87(Scopus)
- [4] **Manish Oraon**, **An Approach to Measure Tool Wear through Image Processing in Incremental Sheet Metal Forming**, Applied Mechanics and Materials, Vol. 908, pp 157-167, (2022), ISSN: 1662-7482, (Scopus)IF 0.3

- [5] **Manish Oraon, Tool wear in the single point incremental forming**, Materials Today Proceedings, , Vol. 56, pp 1738-1742, [\(2022\)](#), ISSN: 2214-7853, IF: 1.24(**Scopus**)
- [6] Anulal Mahto, **Manish Oraon, An evolutionary anthropometric study and its impact on strength**, Materials Today Proceedings, , Vol. 56, pp 1853-1857, [\(2022\)](#), ISSN: 2214-7853, <https://doi.org/10.1016/j.matpr.2021.11.038>,(**Scopus**)
- [7] **Manish Oraon, Vinay Sharma, Application of Artificial Neural Network: A Case of Single Point Incremental Forming (SPIF) of Cu67Zn33 Alloy**, Management and Production Engineering Review, Vol. 12, No.14, pp17-23, [\(2021\)](#), ISSN: **2080-8208**, DOI: 10.24425/mper.2021.136868 , **IF: 1.45(SCI)**
- [8] **Manish Oraon, Soumen Mandal, Vinay Sharma, Predicting the deformation force in the incremental sheet forming of AA3003**, Materials Today Proceedings, , Vol. 45, no. 6, pp 5069-5073,<https://doi.org/10.1016/j.matpr.2021.01.578> [\(2020\)](#)(**Scopus**)
- [9] **Manish Oraon, Statistical analysis to predict the surface roughness in single point incremental forming of Cu67zn33 alloy**, International journal of productivity and quality management Vol. 31, No. 4, pp 593-604([2021](#)), ISSN 1746-6482, <https://dx.doi.org/10.1504/IJPQM.2020.10031822>, IF: 1.39 (**Scopus**)
- [10] **Manish Oraon, Soumen Mandal, Vinay Sharma, Investigation into the process parameter of single point incremental forming (SPIF)**, Materials Today Proceedings, , Vol. 33, no. 8, pp 5218-5221, <https://doi.org/10.1016/j.matpr.2020.02.922> [\(2020\)](#) (**Scopus**)
- [11] **Manish Oraon, Vinay Sharma, Measurement of electromagnetic radiation in the single point incremental forming of AA3003-O**, International Journal of Lightweight Materials and Manufacture, Vol. 3,no. 2, pp. 113-119, (2020), <https://doi.org/10.1016/j.ijlmm.2019.09.006> IF: 4.19, ISSN 2588-8404 (**Scopus**)
- [12] Soumen Mandal, Subrata Kumar and **Manish Oraon, Process Parameter Effects over Bead Properties during Material, Deposition of PTAW Process**, Materials Science Forum, Vol. 978, pp 55-63, (2019), ISSN 1662-9752,<https://doi.org/10.4028/www.scientific.net/MSF.978.55>, IF: 0.55 (**Scopus**)
- [13] **Manish Oraon, Vinay Sharma, Investigation of Electromagnetic Radiation Emission during Sheet Metal Incremental Micro Forming**, Materials Research, Vol. 21, No.1, pp 1-7, (2018), ISSN 1980-5373 (Online), ISSN 1516-1439 (Print), <https://doi.org/10.1590/1980-5373-MR-2017-0623>, IF: 1.53 (**SCI**)

- [14] **Manish Oraon, Vinay Sharma, Predicting Force in Single Point Incremental Forming by Using Artificial Neural Network**, International Journal of Engineering TRANSACTIONS A: Basics, Vol. 31, No. 1, pp. 88-95(2018), ISSN – 1728-1431, (SCI), IF1.64
- [15] **Manish Oraon, Vinay Sharma, Prediction of Surface Roughness in Single Point Incremental Forming of AA3003-O Alloy Using Artificial Neural Network**, International journal of materials engineering Innovation, Vol. 9, No. 1, pp 1-19, (2018), ISSN 1757-2762, IF: 1.3(Scopus) <https://doi.org/10.1504/IJMATEI.2018.092181>
- [16] **Manish Oraon, Surface Roughness evaluation of AA3003 alloy in single point incremental forming technique**, International journal of scientific & engineering research , Vol. 9, No. 5, pp. 28-34, (2018), [ISSN 2229-5518](https://doi.org/10.1504/IJMATEI.2018.092181), IF: 4.2
- [17] **Manish Oraon; Vinay Sharma, Sheet Metal Micro Forming: Future Research Potentials**, Int. J. on Production and Industrial Engineering, Vol. 1, No. 1, pp. 31-35, (2010)

Book Chapters:

- [1] **Manish Oraon, Manish Kr. Roy, Vinay Sharma, Investigating the Effect of Process Parameters in Incremental Sheet Forming Process**, [Data-Driven Optimization of Manufacturing Processes](#), (2021), IGI global, DOI: 10.4018/978-1-7998-7206-1.ch003, ISBN13: 9781799872061
- [2] **Manish Kr. Roy, Partha Protim Das, Premchand Kumar Mahto, Ankit Kumar Singh, Manish Oraon, Non-Traditional Machining Process Selection: A Holistic Approach From a Customer Standpoint**, [Data-Driven Optimization of Manufacturing Processes](#), (2021), IGI global book, DOI: 10.4018/978-1-7998-7206-1.ch011, ISBN13: 9781799872061

Book Chapters (In Conference e-volume):

- [1] Bittu Toppo, **Manish Oraon, Manish Kr. Roy, Incremental Sheet Metal Forming: The State of Art and Its Future Prospects**, Recent Advances In Industrial Production, pp. 293-301, (2022), ISSN 2195-4356, 978-981-15-7710-9

- [2] **Manish Oraon**, Vinay Sharma, Soumen Mandal, **Predicting the Surface Roughness in Single Point Incremental Forming**, Recent Advances In Mechanical Engineering, pp. pp. 233–242, (2020), ISSN 2195-4356, 978-981-15-7710-9
- [3] **Manish Oraon**, Vinay Sharma, Soumen Mandal, **Performance Measurement in Incremental Deformation of Brass Cu67Zn33 Through Soft Computing Tool**, Advances In Materials and Manufacturing Engineering, pp. pp. 83–89, (2019), ISSN 2195-4356
- [4] **Manish Oraon**, Vinay Sharma, Soumen Mandal, **Tool Wear Measurement in Single Point Incremental Forming**, Advances In Manufacturing Engineering And Materials, pp. pp. 362–371, (2019)
- [5] Fanee Bhusan Kumar, Ayush Sharma, **Manish Oraon**; **Future Research Potential of Hot Rolling Process: A Review**, *Innovation in Material Science and Engineering*, pp. 27–33, (2017) ISBN 978-981-13-2943-2
- [6] Manish Oraon, Vinay Sharma, **Effectiveness of tool profile in sheet metal incremental forming**, TEAM 2013, Vol. 5, No.1, pp 55-59, (2013)

International Conferences:

- [1] Manish Oraon, Ranjeet Prasad, Vinay Sharma, **Application of Artificial intelligence in Single Point Incremental Forming for Surface Roughness Prediction**, 2nd *International Conference on Aspects of materials and mechanical Engineering (ICRMME 2023)*, Department of Mechanical Engineering, GLA University, Mathura, 13-14 Oct. 2023
- [2] Manish Oraon, **An Approach to Measure Tool Wear through Image Processing in Incremental Sheet Metal Forming**, *International Conference on Applied Research and Engineering (ICARAE 2021)*, Department of Mechanical Engineering, Cape Peninsula University of Technology, Cape Town, Western Cape on the 26-28 November 2021
- [3] Anulal Mahto, Manish Oraon, **An evolutionary anthropometric study and its impact on strength**, *International Conference on Applied Research and Engineering (ICARAE 2021)*, Department of Mechanical Engineering, Cape Peninsula University of Technology, Cape Town, Western Cape on the 26-28 November 2021

- [4] Manish Oraon, **Tool wear in the single point incremental forming**, *International Conference on Applied Research and Engineering (ICARAE 2021)*, Department of Mechanical Engineering, Cape Peninsula University of Technology, Cape Town, Western Cape on the 26-28 November 2021
- [5] Manish Oraon, **Schematic Approach to Measure Tool Wear in the Incremental Sheet Forming**, *International Conference on Industrial Engineering and Management (ICIEM-2021)*, Department of Mechanical Engineering, MNIT Jaipur on the 17th – 19th December 2021
- [6] Manish Oraon, **Predicting the deformation force in the incremental sheet forming of AA3003**, *International Conference on Aspects of Materials of Materials Science and Engineering (ICAMSE 2021)*, PTU Chandigarh, Dec. 05th-06th, 2021
- [7] Manish Oraon, Vinay Sharma, **A Schematic Approach for tool wear of 440C steel in Incremental Sheet metal Forming**, 2nd Virtual *International Tribology Research Symposium (ITRS-2021)*, SRM Institute of science and technology, 8-10 December 2021
- [8] **Manish Oraon**, Manish Kr. Roy, Vinay Sharma, **Analysis on surface roughness of Al-Mg alloy in single point incremental forming (SPIF)**, AIP Conference Proceedings **2273**, 050016 (2020); <https://doi.org/10.1063/5.0024552>
- [9] Aditya Shekhar, Shubham Kumar, Manish Oraon, and Manish Kr. Roy, **Revisiting the rolling process and its future research potentials**, AIP Conference Proceedings **2273**, 050031 (2020); <https://doi.org/10.1063/5.0024553>
- [10] Manish Oraon, Vinay Sharma, Soumen Mandal, **Predicting the Surface Roughness in Single point Incremental Forming**, *International Conference on Recent Advancements in Mechanical Engineering*, NIT Silchar, Feb. 07th-09th, 2020
- [11] Manish Oraon, Vinay Sharma, Soumen Mandal, , **Performance Measurement in Single Point Incremental Forming of Brass Cu67Zn33 through Soft Computing Tool**, *International Conference on Advances in Materials and Manufacturing Engineering*, KIIT Bhubaneswar, March. 15th-17th, 2019.
- [12] Manish Oraon, Soumen Mandal, Vinay Sharma, **Investigation into the Process Parameter of Single Point Incremental Forming (SPIF)**, *International Conference on Processing and characterization of Materials*, NIT Rourkela, Dec. 12th-14th, 2019.

- [13] Manish Oraon, Vinay Sharma, **Statistical analysis to predict the surface Roughness in single point incremental forming**, *International Conference on Role of Industrial Engineering in Industry 4.0 Paradigm*, IIIE chapter in collaboration with ITER Bhubaneswar (Siksha O Anusandhan) Bhubaneswar, Sept. 27th-30th, 2018.
- [14] Manish Oraon, Soumen Mandal, Vinay Sharma, **Statistical analysis of Single Point Incremental Forming for the Optimization of Force and Surface Roughness**, *International Conference on Processing and characterization of Materials*, NIT Rourkela, Dec. 6th-8th, 2018.
- [15] Manish Oraon, Vinay Sharma, **Effectiveness of tool profile in sheet metal incremental forming**, *TEAM 2013*, Nov. 4th-6th, 2013.
- [16] Manish Oraon; Vinay Sharma, **Tool design and Force Measurement to Optimization the surface profile in incremental forming**, *3rd International Conference on Production and Industrial Engineering*, CPIE-2013 Organized by Department of Production Engg., NIT Jalandhar, March 29th-31st, 2013
- [17] Manish Oraon; Vinay Sharma, **Sheet Metal Micro Forming: Future Research Potentials**, *International Conference on Advances in Mechanical Engineering*, Dec. 21-22, 2010

National Conferences:

- [1] Manish Oraon, V. Sharma **Micro forming: Present Status and Future Research Potentials**, *National workshop on Precision Forming*, Organized by Department of Production Engg., Birla Institute of Technology, Mesra Ranchi, 15-16 February 2010
- [2] Manish Oraon, V. Sharma **Strategies for tool path optimization in incremental sheet metal forming**, *National workshop on Precision Forming*, Organized by Department of Production Engg., Birla Institute of Technology, Mesra Ranchi, 21-22 February 2011
- [3] Manish Oraon, V. Sharma, S. Kumar **Optimization of tool path in incremental forming**, *National Conference on Competitive Manufacturing: Strategies & Decision Support Systems*, GLA University, Mathura, (UP), 05-06 November 2011
- [4] Manish Oraon, V. Sharma **Effect of tool geometry in sheet metal Incremental forming**, 27th *National Convention of Production Engineers And National Seminar on*

“Advancements In Manufacturing-Vision 2020” Organized by IEI (Ranchi) and Department of Production Engg., Birla Institute of Technology May 25 - 26, 2012

Short Term Courses:

- [1] **“Recent Innovative Developments in Thermal Engineering”** organized by Malla Rddy Engineering College (Autonomus), Hyderabad June 28-July 03, 2021
- [2] **“Internet of things (IoT) Based Green Energy Systems”** organized by B V Institute of Technology(UGC-Autonomus), Telangana 14-19 Sept. 2020
- [3] **“Reliability, Maintianbility, and Quality Issues in Process Industries”** organized by NIT Jalandhar, 04-08 Aug. 2020
- [4] **“Transforming Pedagogy in India”** organized by NIT Jamshedpur, 01-03 Aug. 2020
- [5] **“Internet of Things”** organized by BIT Patna, 08-18 May, 2019
- [6] **“NBA Accreditation”** organized by NITTTR, Ministry of MHRD, Govt. of India, 04-14 Feb. 2019
- [7] **“Pedagogy for online and blended teaching- learning process (FDP 201x)”** conducted by IIT Bombay, under mission on education through ICT (MHRD), 14 Sept.-12 Oct., 2017
- [8] **“Foundation Program In ICT for Education (FDP 101x)”**, conducted by IIT Bombay, under mission on education through ICT (MHRD), 03 Aug. 2017-07 Sept., 2017
- [9] **“Faculty Development program for Advanced Pedagogy”**, conducted by Swaasthya Consulting at BIT Patna, 14-19 Dec., 2015
- [10] **“Six Sigma Tools and Applications”**, conducted by Swaasthya Consulting at BIT Patna, 25-30 Aug., 2014
- [11] **“ISTE workshop on fluid mechanics”**, conducted by IIT Khargpur, under mission on education through ICT (MHRD), 20-30 May, 2014
- [12] **“ISTE workshop on Engg. Mechanics”** conducted by IIT Bombay, under mission on education through ICT (MHRD), 26 Nov.- 06 Dec., 2013
- [13] **“Research methodology & SPSS for management teachers”**, ISM, Pundag, Ranchi, 29 Oct.- 03 Nov., 2012
- [14] **“Training program on Finite Element Analysis with ANSYS”** under TEQIP from July 16-20, 2008 Organized by Department of Mechanical Engg., Birla Institute of Technology, Mesra Ranchi
- [15] **“Fourth SERC on micro fabrication and micromachining processes”**, Organized by production Engg. Department, Jadavpur University, Kolkata, April 5-10, 2010
- [16] **“A short term course on Micro Scale Engineering”**, Organized by mechanical Engg. Department, IIT Kanpur, January 3-8, 2011

Administrative Responsibilities

- [1] Member, SC/ST Cell, BIT Mesra
- [2] In charge, Scholarship Section, BIT Patna
- [3] In charge, workshop of Production Engineering department, BIT Patna
- [4] Member, SC/ST Cell, BIT Patna
- [5] Member, Library Committee, BIT Patna
- [6] Member of sports committee, BIT Patna