

CURRICULUM VITAE

Dr. Ajay Kumar Maurya

Assistant Professor, Dr. Ambedkar Institute of Tech. for Divyangjan
Kanpur-208024, UP. (www.aith.ac.in)

Mob.: +91-7633841849

Email (M): maurya.me16@nitp.ac.in

LinkedIn Id: <https://www.linkedin.com/in/ajay-kr-maurya-737540232/>



CAREER OBJECTIVE

To obtain a challenging position in a high-quality engineering environment where my resourceful experience and academic skills will add value to organizational operation and research. I aspire to pursue a career in the education sector in various teaching, research as well as administrative positions to contribute to the improvement of the education system with the best of my knowledge and to enhance my skills.

PROFESSIONAL QUALIFICATION

Ph.D. in Mechanical Engineering (Specialization: Additive Manufacturing) from the National Institute of Technology, Patna (NIT Patna), Bihar [NIT Patna, NIRF ranking 55 in the year 2024](#)

EDUCATIONAL QUALIFICATIONS

(a) From SSLC/Matriculation up to PG

Exam Passed	Specialization	College/ Institute	University/ Board	Passing Year	Class/ Div.
High-school	Science	MLAP-IC Prayagraj, UP	UP Board	2004	1 st class
Intermediate (10+2)	PCM	IS-IC Prayagraj, UP	UP Board	2006	1 st class
B. Tech	Industrial & Prod. Engg.	IERT_Prayagraj, UP	APJ-AKTU Lucknow	2011	1 st class
M. Tech	Mechanical Engineering	MMMUT Gorakhpur, UP	APJ-AKTU Lucknow	2015	1 st class

(b) Doctoral Degree

Course	Institute/ University	From	To Submit	CGPA	Date of Defence (VIVA) / Degree Awarded Date
Ph.D. (ME)	NIT Patna	29.03.2017	19.09.2022	9.0	15.04.2023 / 24.12.2023
Thesis Title: Laser Additive Manufacturing of Inconel 718 Alloy: Microstructure, Physical and Mechanical Properties.					

DETAILS OF EMPLOYMENT/ EXPERIENCE

About 3.5 years' experience in teaching/research and industry

S. No.	Name and Address of Employer/ Organization	Designation	From	To	Duration
1.	Global Innov Source Solutions Pvt. Ltd. Delhi-110084, India	Supervisor	16.08.2011	23.06.2012	10 Months
2.	PMKVY Through Innovision Pvt. Ltd. Jhansi-284001, UP, India	Skilled Trainer	13.07.2015	29.07.2016	12 Months
3.	Madan Mohan Malaviya Univ. of Tech. (MMMUT) Gorakhpur-273010, UP, India	Assistant Professor	04.08.2016	13.04.2017	08 Months
4.	Government Polytechnic Sheohar-843329, Bihar, India	Lecturer	02.01.2023	10.10.2023	09 Months
5.	Dr. Ambedkar Institute of Technology for Divyangjan Kanpur-208024, UP, India	Assistant Professor	11.10.2023	Till Date	-----

INTERNSHIP

1. **Training in Bharat Pumps & Compressors Limited (BPCL), Naini, Prayagraj, UP (4 WEEKS)** (15 June – 14 July 2010)

The training was on pumps and compressors, how they are made, working principles, and their use in different industries like petroleum refineries, natural gas processing plants, petrochemical and chemical plants, and similar large industrial plants.

2. **Training on Lathe machine in the workshop of Mechanical Engineering Department MNNIT Allahabad, Prayagraj, UP (5 WEEKS)** (09 June – 16 July 2009)

The training was regarding the repair of mechanical parts of different lathe machines and understanding how they work.

PROJECTS

Ph.D. Thesis (April 2017 – April 2023)

National Institute of Technology Patna (NIT Patna)

Thesis title “**Laser Additive Manufacturing of Inconel 718 Alloy, Microstructure, Physical and Mechanical Properties**”

Under the Supervision of **Prof. Amit Kumar**, Dept. of Mech. Engg., NIT Patna, Bihar, India.

My doctoral dissertation is based on the microstructure, physical, and mechanical properties characterization of Inconel 718 alloy fabricated by powder bed fusion-based direct metal laser sintering (DMLS) and powder feed-based laser-directed energy deposition (LDED) techniques. In this study, the anisotropy behaviour of fabricated material has been studied in an as-built and

heat-treated state. The defect-free Inconel 718 single tracks, thin walls, and bulk structures were fabricated, and their behaviour was experimentally investigated at various process parameters. Investigations on the single track, the basic building unit in LDED, were carried out to evaluate the effect of process parameters on geometry and build quality. A simple analytical model has been developed for faster predictions of track geometry, and it found a good match with the experimental results. A geometrical, macrostructural, and mechanical characterization was performed on wall structures. Further, four different scan strategies have been used for depositing the bulk structure for microstructural and mechanical property analysis. It was observed mechanical and physical properties depend on the scanning strategy. In the end, sequential layer-by-layer remelting (SLLR) on LDED-built bulk structure was performed, and a significant reduction in surface roughness, porosity, and an increase in microhardness due to reduction in dendrite size is observed in SLLR samples as compared to LDED samples.

M. Tech Dissertation (July 2014 – May 2015)

Madan Mohan Malaviya University of Technology (MMMUT) Gorakhpur, UP

Dissertation title “**Modeling and Simulation of Flexible Manufacturing System using Petri-Nets**”

Under the Guidance of **Prof. S. C. Jayswal**, Mech. Engg. Dept., MMMUT Gorakhpur, UP, India.

My M. Tech. dissertation is based on modeling and simulation of flexible manufacturing systems (FMS) using Petri-Nets. The Petri-Net technique is a mathematical tool that converts any existing system into a mathematical model. In my project, the complicated flexible manufacturing system and the industrial data related to the scheduling of jobs were analyzed with the help of Petri-Net. The FMS system is converted into a mathematical model, and then, with the help of the Petri-Net tool, the system is simulated for optimal scheduling of the job. Petri-net-based FMS simulation helps reduce job completion time by eliminating or minimizing job loading and unloading time, tool change time, and ideal time, which increases the efficiency of the system and the organization's productivity.

B. Tech Project (July 2010 – May 2011)

Institute of Engineering and Rural Technology (IERT), Prayagraj, UP

Project title “**Layout Design in Cellular Manufacturing System**”

Under the Supervision of **Dr. Vikas Choubey***, Industrial & Production Engineering Department, IERT Prayagraj, UP. (*Currently an assistant professor at NIT Patna)

In this project, a team worked on designing the layout for a cellular manufacturing system. The team worked together to find a solution for different machines and different jobs to be placed so that the productivity of the machine could be increased. We took different jobs and machines and designed an analytical model that worked together to obtain a possible solution for different machines and different jobs.

RESEARCH PUBLICATIONS

Google

Scholar

Citations:

<https://scholar.google.com/citations?user=VDb2RMgAAAAJ&hl=en>

Citations: 34

h-index: 03

i10-index: 00

S. No.	Title of the Paper	Authors(s)	Name of the Journal (Q1/Q2/Q3/Q4) & IF	Vol./ Issue/ Year	Pages
1.	The influence of building direction and conventional heat treatment on the microstructure, physical, and mechanical characteristics of a DMLS Inconel 718 alloy	Ajay Kumar Maurya & Amit Kumar	Advances in Materials and Processing Technologies IF: 4.73 https://doi.org/10.1080/2374068X.2022.2081296	Vol. 9, No. 3, 2022	703-727
2.	Effect of building orientation & heat-treatment on microhardness & surface roughness of additive manufactured IN718 alloy	Ajay Kumar Maurya & Amit Kumar	Materials Today: Proceedings IF: 2.59 https://doi.org/10.1016/j.matpr.2021.12.180	Vol. 59, No. 1, 2022	628-635
3.	Synthesis of Inconel 718 Superalloy using Laser Directed Energy Deposition	Ajay Kumar Maurya , A. Kumar , S.K. Saini & C.P. Paul	Materials Today: Proceedings IF: 2.59 https://doi.org/10.1016/j.matpr.2024.07.008	Vol. xx, No. xx, 2024	xx-xx
4.	Optimization of Track Height of LDED Inconel Alloy-718	Ajay Kumar Maurya , A. Kumar , S.K. Saini & C.P. Paul	NanoWorld Journal IF: 1.53 https://doi.org/10.17756/nwj.2023-s1-038	Vol. 9, No. S1, 2023	88-91
5.	Thermal Analysis of Laser Trepan Drilling of ZTA Plate	S.K. Saini , Ajay Kumar Maurya & A.K. Dubey	NanoWorld Journal IF: 1.53 https://doi.org/10.17756/nwj.2023-s1-084	Vol. 9, No. S1, 2023	440-443
6.	Defect and Distortion in Powder-Bed Fusion of Metal Additive Manufacturing Parts	Ajay Kumar Maurya & Amit Kumar	ASEAN Journal on Science & Tech. for Devel. IF: 1.16 https://doi.org/10.29037/ajstd.852	Vol. 39, No. 2, 2022	85-103
7.	Study of Microstructure and Mechanical Properties of As-built and Heat-treated Additive Manufactured Inconel 718 Alloy	Ajay Kumar Maurya & Amit Kumar	ASEAN Journal on Science & Tech. for Devel. IF: 1.16 https://doi.org/10.29037/ajstd.724	Vol. 38, No. 3, 2021	109-115

8.	Effect of Scanning Strategy on Surface Roughness of Directed Energy Deposited Inconel 718 Alloy	Ajay Kumar Maurya , A. Kumar, S.K. Saini & R.K. Gupta	Journal of Mines, Metals and Fuels IF: 0.11 https://doi.org/10.18311/jmmf/2023/35437	Vol. 71, No. 9, 2023	1205-1214
----	---	--	---	-----------------------------------	-----------

Published in UGC Care listed Journals

S. No.	Title of the Paper	Authors(s)	Name of the Journal	Vol./ Issue/ Year	Pages
1.	Study of Build Rate in Laser-Directed Energy Deposition	A.K. Maurya , A. Kumar, S.K. Saini & C.P. Paul	Manufacturing Technology Today (0972-7396) (Journal No. 3830) https://doi.org/10.58368/MTT.22.1.2023.39-44	Vol. 22, No. 1 2023	41-46

Paper Presented at International Conferences

S. No.	Title of the Paper	Authors(s)	Name of the Conference	Date & Venue
1.	Optimization of Material Characteristics in LTD of ZTA Composite	S. K. Saini, A. K. Maurya & S. I. Hango	Int. Conf. on Composites: Design, Processing, Mfg. and Health Monitoring (CDPMHM-2024)	20 th & 21 st June 2024 , IIT Mandi , HP
2.	Porosity Analysis of Laser-Directed Energy Deposited Inconel 718 Alloy	A.K. Maurya , S.K. Saini & R.K. Gupta	International Conference On Additive Manufacturing (ICAM-2024)	4 th - 6 th March 2024 , NIT Warangal , TS
3.	Study of Aspect Ratio of Laser Directed Energy Deposition of Inconel 718 Alloy	A.K. Maurya , A. Kumar, S.K. Saini & C.P. Paul	All India Manufacturing Technology, Design and Research Conference (AIMTDR-2023)	8 th -10 th Dec. 2023 , IIT BHU , UP
4.	Study of Build Rate in Laser-Directed Energy Deposition	A.K. Maurya , A. Kumar, S.K. Saini & C.P. Paul	International Conference on Precision, Micro, Meso and Nano Eng. (COPEN-2022)	8 th -10 th Dec. 2022 , IIT Kanpur , UP

5.	Synthesis of Inconel 718 Superalloy using Laser Directed Energy Deposition	A.K. Maurya, A. Kumar, S.K. Saini & C.P. Paul	International Conference on Frontiers in Materials Engineering (ICFME-2022)	14 th -16 th Dec. 2022, IIT Indore , MP
6.	Optimization of Track Height of LDED Inconel Alloy-718	A.K. Maurya, A. Kumar, S.K. Saini & C.P. Paul	International Conference on Innovations in Mechanical and Materials Engg. (IMME-2022)	4 th -6 th Nov. 2022, MNNIT Allahabad , Prayagraj, UP
7.	Thermal Analysis of Laser Trepan Drilling of ZTA Plate	S.K. Saini, A.K. Dubey & A.K. Maurya	International Conference on Innovations in Mechanical and Materials Engg. (IMME-2022)	4 th -6 th Nov. 2022, MNNIT Allahabad , Prayagraj, UP
8.	Effect of scanning strategy on surface roughness of directed energy deposited Inconel 718 alloy	A.K. Maurya, A. Kumar, S.K. Saini & R.K. Gupta	Int. Conf. on Recent Advances in Modeling and Simulations Techniques in Engg. and Sciences (RAMSTES-22)	9 th -11 th Nov. 2022, Manipal University Jaipur , RJ
9.	Effect of Build Orientation on Tensile Properties and Fractography of AM-ed Inconel 718 Alloy	A.K. Maurya & A. Kumar	International Conference on Progressive Research in Industrial & Mechanical Engineering (PRIME-2021)	5 th -7 th Aug. 2021, NIT Patna , Bihar
10.	Modeling analysis and Performance Measurement of FMS using Petri-Net	A.K. Maurya & A. Kumar	Int. Conf. on Advances and Soft Computing Applications in Design and Mfg. (ASCADM-2018), pp. 107-112	4 th -6 th Jun. 2018, NIT Patna , Bihar
11.	Multiple Product Scheduling for Max. Utilization of Resources of FMS using Petri Net	A.K. Maurya & S.C. Jayswal	International conference on advanced and agile manufacturing systems (ICAM-2015)	28 th -29 th Dec. 2015, KNIT Sultanpur , UP.

Paper Presented at National Conferences

S. No.	Title of the Paper	Authors(s)	Name of the Conference	Date & Venue
1.	Current State, Challenges and Future	A.K. Maurya & A. Kumar	National Conference on Futuristics in Mech. Eng. (FME), (ELK Asia Pacific	28 th -29 th Mar. 2019,

	Needs of Additive Manufacturing		Journal of Mech. Eng. and Research), pp. 398-410	<u>MMMUT GKP.</u> , UP
2.	Modeling and Performance Evaluation of Flexible Mfg. System Using Petri-Net	<u>A.K. Maurya</u> S.K. Singh & S.C. Jayswal	National Conference on Futuristics in Mech. Eng. (FME-2017), pp. 242-248	24 th -25 th Feb. 2017 , <u>MMMUT GKP.</u> , UP

Book Chapter in the Book, Published by Reputed International Publisher/SCOPUS

S. No.	Book Title	Book Chapter	Authors(s)	Publisher/ Year	Page range	ISBN No.
1.	Lecture Notes in Mechanical Engineering	The Impact of Building Orientation on Microhardness & Surface Roughness of DMLS Inconel Alloy	<u>A.K. Maurya</u> & A. Kumar	Springer Nature Singapore 2021 IF: 0.19 https://doi.org/10.1007/978-981-15-3639-7_74	619-628	987-981-15-3639-7 (e-book)

Publication Under Review

S. No.	Title of the Paper	Authors(s)	Name of the Journal	Paper status
1.	Parametric Study on Synthesis of Inconel 718 Superalloy using Laser Directed Energy Deposition	<u>Ajay Kumar Maurya</u> , Amit Kumar, Surendra Kumar Saini	Advanced Engineering Materials IF: 4.08 (SCIE)	Under Review Since Feb 2024
2.	Modeling of Laser Directed Energy Deposited Track Width Using Artificial Neural Network	<u>Ajay Kumar Maurya</u> , Surendra Kumar Saini, Amit Kumar	Scientific Bulletin Series D: Mechanical Engineering IF: 0.30 (Scopus)	Under Review Since Jun 2024
3.	Effect of Build Orientation on Tensile Properties and Fractography of Additive Manufactured Inconel 718 Alloy	<u>Ajay Kumar Maurya</u> , Amit Kumar, Swarnambuj Suman	<u>ASEAN</u> Journal on Science & Tech. for Devel. IF: 1.16 (Scopus)	Under Review Since Dec 2023

SEMINARS/ CONFERENCES/ STTP/ FDP ATTENDED

S. No.	Duration	Institute/ Organization	Sponsored By	Name of the Course
1.	01 – 10 May 2023	NIT Patna	NIT Patna	Two-week short-term course on “Recent Advances in Mechanical Engg. (RAME)”
02	04 – 06 Nov 2022	MNNIT Allahabad, Prayagraj, UP	DRDO	International Conference on Innovations in Mechanical and Materials Engineering.
03	08 – 12 Feb 2021	NIT Patna, Bihar, India	ATAL	One-week Online FDP on “Novel Materials”
04	01 – 05 Feb 2021	IIT Ropar, Punjab, India	ATAL	One-week Online FDP on “3D Printing & Design”
05	14 – 18 Dec 2020	GMR Inst. of Tech., Rajam, AP, India	ATAL	One-week Online FDP on “3D Printing & Design”
06	07 – 11 Dec 2020	NIT Patna, Bihar, India	ATAL	One-week Online FDP on “3D Printing & Design”
07	19 – 23 Oct 2020	Dr. N.G.P. Inst. of Tech., Tamil Nadu, India	ATAL	One-week Online FDP on “3D Printing & Design”
08	14 – 18 Sep 2020	NIT Patna, Bihar, India	NIT Patna	5-day Online FDP on “Solar Energy Utilization”
09	17 – 23 Dec 2018	Madan Mohan Malaviya Univ. of Tech. GKP., UP	TEQIP-III	One-week short-term course on “Advancements in Mechanical Engineering
10	12 – 16 Oct 2018	MNNIT Prayagraj, UP	TEQIP-III	One-week short-term course on “Advances in Materials and Manufacturing”
11	23 – 29 Mar 2017	Madan Mohan Malaviya Univ. of Tech. GKP., UP	TEQIP-II	One-week short-term course on “Emerging Trends in Materials Science”
12	27 Feb – 03 Mar 2017	Madan Mohan Malaviya Univ. of Tech. GKP., UP	TEQIP-II	One-week short-term course on “Emerging Trends in Thermal Engineering”

WORKSHOPS ATTENDED

S. No.	From	To	Institute/ Organization	Sponsored By	Name of the Course
1.	24 Nov 2022		KIPM College of Engg. & Tech., Gorakhpur, UP	KIPM & InDA	One-day National Workshop on “Sustainable Tech. Devel. for Energy & Water Sector (STDEWS-2022)”
2.	23 – 29 Jun 2022		NIT Meghalaya, India	SERB	One-week online workshop on “Green Materials and Mfg.: Concepts, and Needs”
3.	21 – 25 Mar 2022		Maturi Venkata Subba Rao (MVSR) Engineering College, Telangana, India	Matrusri Education Society, Estd. 1980	One-week online workshop on “Innovative Methods in Finite Element Analysis Using ANSYS & ABAQUS”
4.	20 – 24 Jul 2020		NIT Patna, Bihar, India	TEQIP-III	One-week online workshop on “Recent Trends in Mechanical Engineering”
5.	08 – 12 Oct 2018		Raja Ramanna Centre for Advanced Tech. (RRCAT), Indore, MP, India	RRCAT	One-week DAE-BRNS Workshop on “Laser Additive Mfg. & Allied Technologies” (LAMAT)
6.	11 – 22 Jun 2018		IIT Gandhinagar, Gujrat, India	GIAN	Two-week workshop on “Aerospace Materials Microstructure Fracture and Fatigue”
7.	17 – 19 Mar 2017		Madan Mohan Malaviya Univ. of Tech. Gorakhpur, UP	MMMUT	Three-day “Hands-on Training Cum Workshop on Soft Computing Skill for Scientists & Engineers”

ACHIEVEMENTS/ CERTIFICATE/ FELLOWSHIP RECEIVED

S. No.	Name of Award	Awarding Agency	Year
1.	Best research paper (RAMSTES-2022)	Manipal University Jaipur	2022
2.	Fellowship (Ph.D.)	Ministry of Education, Govt. of India	2017-2022
3.	Appreciation certificate for contribution as a “volunteer” at the International	NIT Patna	2021

	Conference on Progressive Research in Industrial & Mechanical Engineering.		
4.	Course on Computer Concepts-Grade “C”	NIELIT-Delhi	22-10-2016
5.	Fellowship (M. Tech)	Ministry of Education, Govt. of India	2013-2015
6.	GATE Qualified (ME)	Organizing Chairman GATE, on behalf of MHRD	2012 (355), 2013 (380), 2014 (397), 2015 (447)
7.	Enrolment Agency Supervisor	Sify Technologies Limited	28.07.2011
8.	Appreciation certificate for organizing “mobile quiz” in Technovation during 27 th – 30 th Mar. 2010.	Inst. of Eng. and Rural Tech. (IERT) Prayagraj	30-03-2010

EXPERT TALK

1. Five days Short Term Training Programme (STTP) on “Advancements in Energy and Manufacturing Engineering (AEME)” Organized by the Department of Mechanical Engineering, [Poornima College of Engineering, Jaipur](#), from 25th-29th September 2023. Expert Lecture on “**Laser Directed Energy Deposition (L-DED): An Advanced Additive Manufacturing Process**”. 29.09.2023.
2. Ten days Short Term Training Programme (STTP) on “Recent Advances in Mechanical Engineering (RAME)” Organized by the Department of Mechanical Engineering, [National Institute of Technology Patna](#), from 1st-10th May 2023. Expert Talk on “**Additive Manufacturing**”. 06.05.2023.

TECHNICAL SKILLS

- Application Software: **MS Office**
- Design Software: **Google Sketchup Pro, AutoCAD**
- Graph Analysis Software: **Origin Pro**
- Video Editing Software: **Wondershare Filmora**
- Image Processing Software: **ImageJ**
- Programming Software: Learning **Python**

SUBJECT TAUGHT

S. No.	Name of Course	Whether UG/PG	Single/ Shared Instruction	Class Strength	No. of times taught
1.	Engineering Materials	UG	Single	150	Once (Jul-2016)
2.	Fluid Mechanics	UG	Single	60	Once (Jan-2022)

3.	Measurement and Metrology	UG	Single	60	Once (Jan-2022)
4.	Material Science	UG	Single	60	Once (Jul-2022)
5.	Strength of Materials	UG	Single	60	Once (Jan-2023)
6.	Engineering Drawing	UG	Single	75	Twice (Jul-2023)
7.	Fundamentals of Mechanical Engineering	UG	Single	75	Twice (Jul-2023)
8.	Workshop Technology	UG	Single	75	Once (Jan 2024)

PERSONAL SKILLS

Ability to deal with people diplomatically comprehensive problem-solving abilities, willingness to learn, a team facilitator, and a hard worker. I am naturally shy and stay cool in every situation.

HOBBIES & INTEREST

- Listening music
- Learning New Skills and Technology

NAME AND ADDRESS OF REFEREES

S. No.	Name and Designation	Department	Institute	Email and Mob.
1.	Prof. Amit Kumar (PhD Supervisor)	Department of Mechanical Engg.	NIT Patna	amit@nitp.ac.in +91-9934067691
2.	Dr. C P Paul, Associate Professor (co-author)	Head, Additive M. Technology Lab	RRCAT Indore	paulcp@rrcat.gov.in +91-9425666596
3.	Dr. Abhishek Singh, Associate Professor (co-author)	Department of Mechanical Engg.	NIT Patna	abhishek.singh@nitp.ac.in +91-7488323257

PERSONAL INFORMATION

Father's Name: Shri Kamla Prasad Maurya (Senior Technical, ECE, MNNIT Prayagraj)
 Mother's Name: Smt. Sita Devi (Housewife)
 Sex: Male
 Nationality: Indian
 Marital Status: Single
 Hobbies: Reading, Teaching
 Languages Known: Hindi (S/R/W) & English (S/R/W)
 Permanent Address: Malak Chaturi, Post Shivgarh, Soraon, Prayagraj- 212502

DECLARATION

I hereby declare that the information given above is true and correct to the best of my knowledge. In case any error or omission is found at a later date. I shall be liable for the consequence.

Date: 12.02.2024

Place: Prayagraj



Ajay Kumar Maurya