

## Profile Page



Name : Dr Kapil Kumar

Designation : Associate Professor

Department : Industrial & Production Engg.

Qualification : Ph.D Optimization of Manufacturing Systems (IIT Roorkee)  
M.E. Manufacturing Technology (NITTTR, Chandigarh)  
B.E. (Hons) Mechanical Engineering (NIT Kurukshetra)

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### Research Interests :

1. Additive Manufacturing, Internet of Things (IoT) and Nature inspired optimization algorithms
2. Non conventional manufacturing processes
3. Design, Planning, Scheduling and Performance optimization of Manufacturing Systems (CMS, FMS, RMS)

### Other Profile Links :

#### Google Scholar Link :

Dr. Kapil Kumar Goyal [Click Here](#)Dr Kapil Kumar Goyal [Click Here](#)

### Journal Publications :

Year	Journal	Publication
2022	Polymer composites	Singh, J., Goyal, K. K., Kumar, R., & Gupta, V. (2022). Influence of process parameters on mechanical strength, build time, and material consumption of 3D printed polylactic acid parts. Polymer Composites, 43(9), 5908-5928.
2022	Polymer composites	Singh, J., Goyal, K. K., Kumar, R., & Gupta, V. (2022). Development of artificial intelligence?based neural network prediction model for responses of additive manufactured polylactic acid parts. Polymer Composites, 43(8), 5623-5639.
2022	Materials Today: Proceedings	Akula, V.S.R.P., Goyal, K.K., Verma, O.P. and Sharma, N., 2022. Low-cost azimuth and elevation antenna rotator for LEO satellite tracking. Materials Today: Proceedings. ( <a href="https://doi.org/10.1016/j.matpr.2022.02.292">https://doi.org/10.1016/j.matpr.2022.02.292</a> )

2022	Materials Today: Proceedings	Sharma, N., Sharma, A., Goyal, K.K., Gupta, S., Bahl, S. and Sharma, G.K., 2022. Transformation temperature and corrosion behavior of porous NiTi and NiTiCu shape memory alloy. Materials Today: Proceedings. ( <a href="https://doi.org/10.1016/j.matpr.2022.02.519">https://doi.org/10.1016/j.matpr.2022.02.519</a> )
2022	International Journal of Advanced Manufacturing Technology	Goyal, K.K., Sharma, N., Gupta, R.D., Gupta, S., Rani, D., Kumar, D. and Sharma, V.S., 2022. Measurement of performance characteristics of WEDM while processing AZ31 Mg-alloy using Levy flight MOGWO for orthopedic application. The International Journal of Advanced Manufacturing Technology, pp.1-23. ( <a href="https://doi.org/10.1007/s00170-021-08358-8">https://doi.org/10.1007/s00170-021-08358-8</a> )
2022	Materials	Goyal, K.K., Sharma, N., Dev Gupta, R., Singh, G., Rani, D., Banga, H.K., Kumar, R., Pimenov, D.Y. and Giasin, K., 2022. A Soft Computing-Based Analysis of Cutting Rate and Recast Layer Thickness for AZ31 Alloy on WEDM Using RSM-MOPSO. Materials, 15(2), p.635. ( <a href="https://doi.org/10.3390/ma15020635">https://doi.org/10.3390/ma15020635</a> )
2022	Journal of Electronic Materials	Kumar, S., Seth, R., Panwar, S., Goyal, K.K., Kumar, V. and Choubey, R.K., 2021. Morphological and Optical Studies of ZnO-Silica Nanocomposite Thin Films Synthesized by Time Dependent CBD. Journal of Electronic Materials, 50(6), pp.3462-3470. ( <a href="https://doi.org/10.1007/s11664-021-08863-2">https://doi.org/10.1007/s11664-021-08863-2</a> )
2022	Materials Today: Proceedings	Singh, J., Goyal, K.K., Kumar, R., 2022. Effect of filling percentage and raster style on tensile behaviour of FDM produced PLA parts at different build orientation. Materials Today: Proceedings, 63, 433-439. ( <a href="https://doi.org/10.1016/j.matpr.2022.03.444">https://doi.org/10.1016/j.matpr.2022.03.444</a> )
2022	Materials Today: Proceedings	Phanden, R. K., Sheokand, A., Goyal, K. K., Gahlot, P., & Demir, H. I. (2022). 8Ds method of problem solving within automotive industry: Tools used and comparison with DMAIC. Materials Today: Proceedings. ( <a href="https://doi.org/10.1016/j.matpr.2022.05.383">https://doi.org/10.1016/j.matpr.2022.05.383</a> )
2022	Materials Today: Proceedings	Kumar, S., Kumar, R., Goyal, K. K., Sharma, N., Development of aluminium based hybrid MMC and investigation of tribological properties. Materials Today: Proceedings. 63, 400-405.
2022	Materials Today: Proceedings	Kumar, S., Kumar, R., Goyal, K. K., Sharma, N., Experimental study on tensile strength of Al2024/SiC/FA/Graphite hybrid MMC prepared by stir casting. Materials Today: Proceedings. 63, 395-399.
2021	Journal of Physics: Conference Series, 1854(1)	Kumar, A., Goyal, K. K., Bhardwaj, A., & Sharma, N., “Development and Characterization of AA2024/SiC/Gr/Fly ash Hybrid Composite”
2021	Lecture Notes on Multidisciplinary Industrial Engineering - Recent Advances in Operations Management Applications (Springer)	Yadav M., Bhardwaj A., & Goyal K. K., (2021) “Data analytics for NIRF in case of Indian institutions to check the consistency and validity of ranking results”
2021	Advancements in Manufacturing Systems and its Optimization (CRC Press, Taylor & Francis)	Mandal A. K., Kumar R., Goyal K. K., & Jadoun R. S., “Effect of Electrode Geometry On Resistance Spot Welding Of Steel Sheets”
2021	Lecture Notes in Mechanical Engineering (Springer)	Gupta K., Goyal K. K., Kumar R., & Singh J., (2021, 1 June) “Artificial Intelligence based Neural Network prediction model for predicting multi-responses of Finishing Honing Process”
2021	Recent Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering, pp. 621-627 (Springer	Kumar, G., Goyal, K. K., & Batra, N. K., “Role of performance measures in the configuration selection of reconfigurable manufacturing system”

2021	OPSEARCH, (Springer)	Kumar, G., Goyal, K.K., Batra, N.K. and Rani, D., 2021. Single part reconfigurable flow line design using fuzzy best worst method. OPSEARCH, pp.1-29. ( <a href="https://doi.org/10.1007/s12597-021-00550-4">https://doi.org/10.1007/s12597-021-00550-4</a> )
2021	Journal of Electronic Materials, 50(6), 3462-3470. Springer (IF-1.93)	Kumar, S., Seth, R., Panwar, S., Goyal, K. K., Kumar, V., & Choubey, R. K. (2021) “Morphological and Optical Studies of ZnO-Silica Nanocomposite Thin Films Synthesized by Time Dependent CBD”
2019	Journal of Physics: Conference Series 1240(1)	Kumar, G., Goyal, K. K., & Batra, N. K., “Evolution, principles and recent trends in reconfigurable manufacturing system”
2017	Journal of Vibration Engineering & Technologies, 5(6), 547-556 (SCI, Springer, IF-0.615)	Improved Suspension Design of Indian Railway General Sleeper ICF Coach for Optimum Ride Comfort
2016	International Journal of Advanced Manufacturing Technology, 84(5), 1587-1600 (SCI, Springer, IF-2.6)	Design of reconfigurable flow lines using MOPSO and maximum deviation theory
2016	International Journal of Machining and Machinability of Materials, 18(4), 392-411 (Scopus, Inderscience)	Investigation of wire electrical discharge machining of ZrSiO <sub>4</sub> P/Al 6063 MMC
2013	Journal of Manufacturing Systems, 32(4), 724-730 (SCI, Elsevier, IF-3.69)	A Novel Methodology to Measure the Responsiveness of RMTs in Reconfigurable Manufacturing System
2013	International Journal of Production Research, 51(6), 1762-1776, (SCI, Taylor & Francis, IF-2.62)	A Comprehensive Approach to Operation Sequence Similarity Based Part Family Formation in the Reconfigurable Manufacturing System
2013	International Journal of Simulation Modelling, 12(1), 17-26 (SCI, IF-1.94)	Applying swarm intelligence to design the reconfigurable flow lines
2012	International Journal of Production Research, 50(15), 4175-4191 (SCI, Taylor & Francis, IF-2.62)	Optimal configuration selection for reconfigurable manufacturing system using NSGA II and TOPSIS

### Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
Book Chapter	Additive Manufacturing for the Development of Biological Implants, Scaffolds, and Prosthetics	Taylor and Francis Group	Atul Babbar, Vivek Jain, Dheeraj Gupta, Ankit Sharma, Chander Prakash, Vidyapati Kumar, Kapil Kumar Goyal	9781003217961	2022
Book Chapter	Metaheuristic Optimization for Three Dimensional Path Planning of UAV	Springer, Singapore	K. Sreelakshmy, Himanshu Gupta, Irshad Ahmad Ansari, Sachin Sharma, Kapil Kumar Goyal & Om Prakash Verma	978-981-19-0707-4	2022

Book Chapter	Experimental Analysis of Surface Integrity of Machined Stainless Steel (SS-304) by Taguchi Method Coupled with GRA Used in Electrical Grids	Taylor and Francis Group	Gaurav Kumar, Kapil Kumar Goyal, Mukesh Kumar, Krishan Arora	9781003242277	2022
Book Chapter	Role of performance measures in the configuration selection of reconfigurable manufacturing system	Recent Advances in Mechanical Engineering, Lecture Notes in Mechanical Engineering (pp. 621-627). (Springer)	Kumar, G., Goyal, K. K., & Batra, N. K.	978-981-15-8704-7_76	2021
Book Chapter	Optimal Design of Reconfigurable Flow Lines	DAAAM International Scientific Book 2012	Goyal, K. K., Jain, P. K. and Jain, M.	ISBN 978-3-901509-86-5, ISSN 1726-9687	2012

### Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
Principal Investigator	Consultancy	Skill Mapping and Productivity improvement	GDPA Fasteners	11-7-2019	Till date	5 Lakhs	Ongoing	Dr L P Singh

### Events Organized :

Category	Type	Title	Venue	From	To	Designation
TEQIP-III Sponsored STC	National	Effective research proposal and paper writing	Dr. B R Ambedkar National Institute of Technology, Jalandhar	20th December, 2019	24th December, 2019	Course Coordinator
International Conference	International	17th International Conference on International Conference on Humanizing work and work Environment - HWWE-19	Dr. B R Ambedkar National Institute of Technology, Jalandhar	8th November, 2019	10th November, 2019	Convener
Conference	International	International Conference on Production and Industrial Engineering	Dr. B R Ambedkar National Institute of Technology, Jalandhar	8th June, 2019	10th June, 2019	Convener
TEQIP-III Sponsored STC	National	Industrial Engineering and Future Factory	Dr. B R Ambedkar National Institute of Technology, Jalandhar	14th August, 2019	18th August, 2019	Course Coordinator

TEQIP-III Sponsored STC	National	Recent tools and techniques for research	Dr. B R Ambedkar National Institute of Technology, Jalandhar	25th January, 2019	29th January, 2019	Course Coordinator
Workshop	National	Interview Skills	Dr. B R Ambedkar National Institute of Technology, Jalandhar	15-06-20	16-06-2020	Coordinator
STC (TEQIP-III sponsored)	National	Effective Communication Skills in the Digital Era	NIT Jalandhar	11-08-2020	15-08-2020	Course Coordinator
STC (TEQIP-III sponsored)	National	Optimization & Statistical Models and Tools	NIT Jalandhar	26-08-2020	30-08-2020	Course Coordinator
STC (TEQIP-III sponsored)	National	Machine learning using Python	NIT Jalandhar	11-09-2020	15-09-2020	Course Coordinator
Webinar	National	How to ACE Civil Services Examination (Expert talk)	NIT Jalandhar	20-09-2020	20-09-2020	Coordinator
Workshop	National	Scientific writing and reference management using Mendeley (Workshop)	Manav Rachna International Institute of Research and Technology.	10-10-2020	10-10-2020	Expert
Conference	International	Congress on Advances in Materials Science and Engineering (CAMSE)	Dr. B. R. Ambedkar National Institute of Technology Jalandhar	14-07-22	16-07-22	Co-Convenor (Organizing Secretary)
Conference	International	SoCTA (Soft Computing: Theories and Applications)	Himachal Pradesh University, Shimla	16-12-22	18-12-22	Organizing Secretary
Conference	International	SoCTA (Soft Computing: Theories and Applications)	Indian Institute of Information Technology (IIIT) Kota, Rajasthan (MNIT, Jaipur Campus)	25-12-2020	27-12-2020	Organizing Secretary

### Professional Affiliations :

Designation	Organization
Life Member (255705)	International Association of Engineers
Life Member (LM 130234)	The Indian Society for Technical Education
Senior Member (SMIIE-11232[99])	Indian Institution of Industrial Engineering
Fellow (F-1264768)	The Institution of Engineers (India)

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Mr Ashwani Sharma	Wire Additive Arc Manufacturing	Ongoing	2020	

Mr Awdhesh Kumar Bind	Optimizing transportation Problem using fuzzy logic and rough sets	Ongoing	2020	Dr Deepika Kumari
Karanbir Singh	Supply Chain Management	Ongoing	2019	Dr Rakesh Kumar
Mr Anand Kumar Mandal	Analysing Resistance Spot Welding in Joining Dissimilar Steel Alloys	Ongoing	2019	Dr Rakesh Kumar
Mr. Jatinder Singh	Additive Manufacturing using Recycled and Reinforced Thermoplastics: An Investigation	Ongoing	2019	Dr Rakesh Kumar
Mr Gaurav Kumar	Comprehensive Planning and Control in Reconfigurable Manufacturing System	Ongoing	2016	Dr N K Batra

## PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Shubham Sadhya (20205213)	Design and Fabrication of Low-cost Filament Extruder for 3D Printing	Ongoing	2022	Dr Gurraj Singh
Yatendera Pal Singh (20205218)	Smart Farming Scalable Solution through IOT	Ongoing	2022	Dr R K Bansal
Khanish Gupta (19205203)	ARTIFICIAL INTELLIGENCE BASED NEURAL NETWORK PREDICTION MODEL AND OPTIMIZATION OF THE WIRE ELECTRIC DISCHARGE	Completed	2021	
Anil Kumar (18205203)	FABRICATION AND TESTING OF ALUMINUM BASED HYBRID METAL MATRIX COMPOSITE	Completed	2020	Dr A. Bhardwaj
Mamta Yadav (18205211)	DATA ANALYTICS FOR NIRF IN CASE OF INDIAN INSTITUTIONS TO CHECK THE CONSISTENCY AND VALIDITY OF RANKING RESULTS	Completed	2020	A Bhardwaj
Alla D V S Prasad (18205202)	ESTIMATION OF LATTICE STRAIN AND ANALYSIS OF VARIOUS PARAMETERS ON WC-10CO-4CR COATED AISI-420 SUBSTRATE	Completed	2020	Dr Rajeev Verma
Mr Namendra Singh	Identification of critical parameters for FMS using multi criteria decision making approach	Completed	2019	Dr L P Singh

## Patents :

Name	Reg./Ref. No.	Date of Award/Filing	Organization	Status
Pickle Serving Jar (Set) [Inventors: Dr. Gourav Gupta (Chitkara University), Dr. Deepika Rani (NITJ) and Dr. Kapil Kumar (NITJ)]	C.B.R. No. 212624; Application No. 357436-001	28th January, 2022 (Filed)	Intellectual Property India, Patent Office, Govt. of India	Filed
Salt Dispenser [Inventors: Dr. Kapil Kumar (NITJ), Akula VSRP (NITJ), Dr K S Nagla (NITJ) and Dr Deepika Rani (NITJ)]	C.B.R. No. 201715; Application No. 364380-001	18th May, 2022 (Filed)	Intellectual Property India, Patent Office, Govt. of India	Filed
Table Salt Dispenser [Kapil Kumar, VSRP Akula, K S Nagla, O P Verma]	202211030367	26th May, 2022	Intellectual Property India, Patent Office, Govt. of India	Filed

**Admin. Responsibilities :**

<b>Position Held</b>	<b>Organization</b>	<b>From</b>	<b>To</b>
Deputy Chief Warden	Dr. B R Ambedkar National Institute of Technology, Jalandhar	13-08-2019	13-01-2021
Warden (Boys Hostel-1)	Dr. B R Ambedkar National Institute of Technology, Jalandhar	29-01-2019	13-01-2021
Nodal Officer (Buddy Program-Anti Drug Campaign)	Dr. B R Ambedkar National Institute of Technology, Jalandhar	16-10-2018	till date
NSS Group Coordinator	Dr. B R Ambedkar National Institute of Technology, Jalandhar	25-10-2018	02-03-2021
Assistant Training Officer	Dr. B R Ambedkar National Institute of Technology, Jalandhar	30-05-2019	till date
IQAC Cell, Co-coordinator	Dr. B R Ambedkar National Institute of Technology, Jalandhar	02-03-2021	till date