Inderdeep Singh, ***PhD***
Dean (Infrastructure)

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Educational Details:

School/Institute	Board	Degree	Year
Indian Institute of Technology	IIT Delhi	**Doctor of Philosophy**	2004
Indian Institute of Technology	IIT Delhi	**Master of Technology**	2000
National Institute of Technology	NIT Hamirpur	**Bachelor of Technology**	1998

Work Experience:

	Designation	Institute/University	From	To
1.	Professor	Indian Institute of Technology Roorkee	December, 2019	Till date
2.	Associate Professor	Indian Institute of Technology Roorkee	October, 2012	December, 2019
3.	Assistant Professor	Indian Institute of Technology Roorkee	May, 2008	October, 2012
4.	Lecturer	Indian Institute of Technology Roorkee	Dec., 2005	May, 2008
5.	Lecturer	Punjab Engineering College, Chandigarh	August, 2005	December, 2005
6.	Lecturer	Institute of Technology, BHU, Varanasi	October, 2004	July, 2005

Important Achievements

a) **"Outstanding Teacher Award – 2013'** by Indian Institute of Technology Roorkee on Teachers Day, September 05, 2013
b) *Foundation for Innovation and Technology Transfer (FITT) Award* for **Best Industry Relevant PhD Thesis** of the Year 2004-2005 by IIT Delhi
c) **1st Position** in the Class of Mechanical Engineering of 1998 at REC (NIT) Hamirpur (H.P)
d) **'Outstanding Sportsperson of the Year - 2000'** by Board of Sports Activities, IIT Delhi
e) **'Roll of Honor - 2004'** by Vindhyachal House, IIT Delhi
f) **'Institute Blazer'** for Outstanding Performance in Field Hockey at Inter-IIT Sports Meet Held at IIT Bombay.
g) **2 Gold, 6 Silver and 2 Bronze Medals** at Inter IIT Sports Meet in Hockey and Football (1998-2003).
h) Delivered more than 100 Keynote/Expert/Invited Lectures during various conferences/ symposia/ workshops/FDPs at reputed Universities/Institutes in India including IITs, NITs and abroad.

Important Academic and Administrative Assignments

- **Dean Infrastructure**, IIT Roorkee (2024-till date)
- **Co-ordinator**, Design Innovation Center (2021-till date)
- **Head,** Department of Design (2021-2024) ***(Founding Head)***
- **Coordinator,** E-Learning Centre, IIT Roorkee (2019 – 2021)
- **Local Coordinator**, GIAN, IIT Roorkee (2019 – 2021)
- **Coordinator**, NPTEL, IIT Roorkee (2019 – 2021)
- **Coordinator, *Rethink-The Tinkering Lab,*** (2017 – 2019)

- **Associate Dean of Students' Welfare,** Indian Institute of Technology Roorkee (2013-2017)
- **Associate NCC Officer (ANO)** at 3 UK Composite Technical Regiment, NCC, IIT Roorkee
- **Nominated Member (Senate),** Indian Institute of Technology Roorkee (2014-2016)
- **Coordinator (Orientation Program for 1st Year Students)** (2013 – 2016)
- **Member** (Board of Studies, Mechanical Engineering) at Panjab University, Kurukshetra University, GEHU, Uttaranchal University, Guru Nanak Dev Engineering College (Ludhiana).

Various Conferences/Seminars conducted.

a. 2nd International Conference on Innovative Engineering Design (ICoIED-2026), NIT Uttarakhand & IIT Roorkee.
b. International Symposium on "Innovative Design for Excellence, Affordability and Sustainability (IDEAS) 2024, IIT Roorkee.
c. International Conference on Design and Manufacturing Technologies (ICDMT) – 2024, IIT Roorkee.
d. 1st International Conference on Innovative Engineering Design (ICoIED-2020), NIT Uttarakhand & IIT Roorkee.
e. 23rd International Symposium on Processing and Fabrication of Advanced Materials (PFAM XXIII-2014), IIT Roorkee.

Membership of International Conference Committee

International Advisory Committee, Asian-Australasian Conference on Composite Materials ACCM 11/ 2018- **Australia**, ACCM-10/ 2016- **South Korea**, ACCM-9/2014- **China.**

Teaching Engagement

Under-Graduate Courses		Post-Graduate Courses	
1.	Introduction to Mechanical Engineering	1.	Product Design and Development
2.	Introduction to Production and Industrial Engineering	2.	Design for Manufacturability
3.	Manufacturing Techniques	3.	Materials and Manufacturing
4.	Manufacturing Technology	4.	Process Innovation Management
5.	Production Planning and Control	5.	Design for Extreme Affordability
6.	Operations Management	6.	Industrial Disasters and Safety
7.	Work System Design	7.	Processing of Non-Metals
8.	Industrial Management		
9.	Value Engineering		
10.	Network Analysis		
11.	Polymer Composites		
12.	Quality Management		

Summary

Research Guidance	**Ph.D.**	**:**	**25 Completed (Annexure I)**
			12 in Progress
	M. Tech/M.Des	**:**	**66 Completed (Annexure II)**
			03 in Progress
Publications	**Journals**	**:**	**169 (Annexure III)**
	Conferences	**:**	**115 (Annexure IV)**
Projects	**Funded Projects (Annexure-V)**		
	Consultancy Projects (Annexure- VI)		
Review Work	**Reviewer** of more than **25** National and International Journals		

Short Term Courses (STC) Conducted as Coordinator/ Co-Coordinator

S.No.	Name of the Workshop	Participating Delegates/Institutes / Agencies / Organizations	Date
Sponsored by Ministry of MSME.			
1.	Awareness Programme on "MSME Innovative (Design) Scheme" Industry-Academia Interface	Roorkee Small Scale Industrial Association (RSSIA), Roorkee	March 02, 2024
2.	Awareness Programme on "MSME Innovative (Design) Scheme" Industry-Academia Interface	Bhagwanpur Industries Association, Bhagwanpur.	January 04, 2024
3.	Awareness Programme on "MSME Innovative (Design) Scheme" Industry-Academia Interface	Sidcul Manufacturing Association Uttarakhand (SMAU), Haridwar.	March 22, 2023
4.	Awareness Programme on "MSME Innovative (Design) Scheme" Industry-Academia Interface	Sidcul Manufacturing Association Uttarakhand (SMAU), Haridwar.	February 25, 2023
Sponsored by Design Innovation Center, NIDI, MOE			
1.	One Day Workshop on "Design Innovation Awareness (DIA)"	Guru Nanak Mission Public School, Paonta Sahib, Himachal Pradesh	June 26, 2025
2.	One Day Workshop on "Innovative Design: Ideation to Realization"	Haridwar University, Roorkee	April 25, 2025
3.	"4th Two Days Workshop for Sugarcane Farmers under the program of One District One Product (ODOP)"	Farmers of Gurdaspur District	March 28-29, 2025
4.	" 3rd Two Days Workshop for Sugarcane Farmers under the program of One District One Product (ODOP)"	Farmers of Ayodhya District	March 08-09, 2025
5.	One Day Workshop on "Innovative Design: Ideation to Realization"	Haridwar University, Roorkee	February 07, 2025
6.	Three Days International Workshop cum Conference on "Design Thinking and Advanced Engineering Materials for Extreme Environments"	Students, Manufacturers, Industry leaders, Government officials from Nepal, and Academicians from India, USA, South Korea, and Nepal.	December 11-13, 2024
7.	" 2nd Two Days Workshop for Sugarcane Farmers under the program of One District One Product (ODOP)"	Farmers of Muzaffarnagar District	December 05-06, 2024
8.	One Day Workshop on "Innovative Design: Ideation to Realization"	Graphic Era Hill University, Dehradun	October 09, 2024
9.	One Day Workshop on "Innovative Design: Ideation to Realization"	Shivalik College of Engineering, Dehradun	September 25, 2024; September 26, 2024; September 27, 2024
10.	" 1st Two Days Workshop for Sugarcane Farmers under the program of One District One Product (ODOP)"	Farmers of Haridwar District	September 06-07, 2024
11.	One Day Workshop on "Innovative Design: Ideation to Realization"	Quantum University, Roorkee	August 31, 2024
12.	Two Days Workshop on "Modern (Cleaner, Leaner and Greener) Manufacturing"	Shivalik College of Engineering, Dehradun.	Feb. 07-08, 2024
13.	One Day Workshop on "Design for Sustainability"	National Institute of Design, Haryana.	September 14, 2023
14.	Two Days Workshop on "Design Thinking and Product Detailing"	Punjab Engineering College (PEC), Chandigarh.	Aug 25-26, 2023
15.	Workshop on "Innovative Design: Ideation to Realization"	Roorkee College of Engineering, Roorkee.	May 25, 2023

16.	A Two Weeks National workshop on "Medical Device Design: Emerging Design, Innovation and Technology (EDIT)"	Across India	May 12-23, 2023
17.	Workshop on "Innovative Design: Ideation to Realization"	Shivalik College of Engineering, Dehradun.	September 30, 2022
18.	Workshop on "Innovative Design: Ideation to Realization"	Shivalik College of Engineering, Dehradun.	September 29, 2022
19.	Five Day Faculty Development Programme on "Product and Process Design for Sustainable Manufacturing"	Across India	Sept 23 – 27, 2022
20.	Five Days Workshop on "Pragmatic approach towards Innovations in Product Design and Manufacturing"	Across India	July 04-08, 2022
21.	Workshop on "Innovative Design: Ideation to Realization"	Graphic Era Hill University, Dehradun.	June 08, 2022
22.	Five Day Faculty Development Programme on "Design for Excellence: A Step Towards Innovation"	Across India	Sept 26 – 30, 2021
23.	Five Day Faculty Development Programme on "Product and Process Innovation: Concepts, Protection and Commercialization"	Across India	June 21 – 25, 2021
24.	Five Days Workshop on "Understanding Product Design : A Hands-on Approach"	Across India	June 17-21, 2019
Sponsored by AICTE, MOE.			
25.	Innovative Products: Conceptualization to Commercialization	Across India	25- 29 June, 2018
26.	Make in India: Dreams to Reality	Across India	3-14 Jan., 2017
27.	Finishing Machining: A State-of-the Art	Across India	2-6 Sept., 2013
28.	A Novel Approach to Processing of Green Composites	Across India	9 March, 2013
29.	Manufacturing Excellence Through Quality Assurance	Across India	09-13 July 2012
30.	Advanced Materials And Manufacturing	Across India	20-22 Jan. 2012
31.	Processing Challenges And Newer Manufacturing Methods	Across India	25-29 June 2011
32.	Advanced Materials and Manufacturing	Across India	14-18 June 2010
33.	Composites: Design and Manufacturing	Across India	07-11 July 2008
34.	Advanced Processing of Composite Materials	Across India	24-28 July 2006
Sponsored by EICT Academy, MEiTY			
35.	Computer Based Product Design and Manufacturing	Tula's Institute, The Engineering and Management College Dehradun	09-13 Dec, 2017
36.	Computer Based Product Design and Manufacturing	National Institute of Technology Uttarakhand	09-13, Feb, 2018

List of Annexure

Annexure I : Details of Ph.D Theses supervised
Annexure II : Details of M. Tech. Theses supervised
Annexure III : Details of Research Publications in Journals
Annexure IV : Details of Research Publications in Conferences
Annexure V : Details of Major Sponsored Projects
Annexure VI : Details of Major Consultancy Projects

Annexure I

Details of Doctoral Theses Supervised/Supervising

COMPLETED				
S. No.	**Name**	**Year**	**Topic**	**Co-Supervisor**
1	Rahul Sharma	2026	Study on PLA Based Bio Degradable Composite for Orthopedic Applications	Prof. Kaushik Pal
2	Pranjal Gupta	2025	Investigation on Drilling of Metallic Materials Using Microwave Energy	Prof. Apurbba Kumar Sharma
3	Karri Santhosh Kumar	2025	Environmental Aging and Biodegradability Study of Bio composites	-
4	Binaz V	2025	Experimental Investigation on Machinability of Sustainable Composites	-
5	Aditi Mahajan	2024	An Intelligent Model of Process Selection For Sustainable Composites	Prof. Navneet Arora
6	Deepak	2024	Experimental Investigation on Bolted Joints In Natural Fiber Based Composites	---
7	Tejas Pramod Naik	2024	Microwave Processing of Sustainable Natural Fiber Reinforced Thermoplastic Composites	Prof. Apurbba Kumar Sharma
8	Sandeep Gairola	2024	Development and Flammability Behavior of Forest/Crop Residue Based Polymeric Composites	Prof. Shishir Sinha
9	Ram Singh	2023	Fusion Welding of Natural Fiber Based Thermoplastic Composites	Prof. A.K. Sharma
10	Jayant Kumar	2022	Joining Behaviour of Natural Fiber Reinforced Thermoset and Thermoplastic Composites	---
11	Kassahun Gashu Melese	2021	Experimental Investigation on Joining of Natural Fibre-Based Composite Materials	---
12	Ujendra Kumar Komal	2020	Processing Techniques And Degradation Behavior of Sustainable Polymeric Composites	---
13	Manish Kumar Lila	2019	Processing of Short Natural Fiber Reinforced Polymer Composites	---
14	Ravinder Kumar	2018	Micro Electric Discharge Machining of Difficult-to- Machine Materials	---
15	Saurabh Chaitanya	2017	Studies on Short Fiber Reinforced Biocomposites	---
16	Temesgen Berhanu Yallew	2016	Characterization and Machinability Study of Natural Fiber Reinforced Composites	Prof. Pradeep Kumar
17	Harish Sharma Akkera	2015	Synthesis and Characterization of Ni-Mn-X (X: In, Sb) FSMA Thin Films	Prof. Davinder Kaur
18	Kishore Debnath	2015	Machining Behavior of Fiber-Reinforced Polymer Composites	Prof. Akshay Dvivedi
19	Abhishek Singh	2013	Investigation on Electro Discharge Drilling and Hole Grinding of Metal Matrix Composites	Prof. Pradeep Kumar
20	Pramendra Kumar Bajpai	2013	Development and Characterization of Natural Fiber Reinforced Composites	Prof. Jitendra Madaan
21	Sarbjit Singh	2013	Primary and Secondary Processing of Metal Matrix Composites	Prof. Akshay Dvivedi
22	Vikas Dhawan	2013	Development of Intelligent Knowledge Base for Machining of Composites	Prof. Sehijpal Singh
23	Pawan Kumar Rakesh	2012	Secondary Processing of Polymer Matrix Composites	Prof. Dinesh Kumar
24	Sant Ram Chauhan	2011	Development, Characterization, Friction and Sliding Wear Response of Vinylester Based Hybrid Composites	Prof. Anoop Kumar
25	Akshay Dvivedi	2008	Electric Discharge Machining Of Al 6063-SiC MMC Produced by Stir Casting Process	Prof. Pradeep Kumar

ONGOING				
S.No.	**Name of Student**	**Reg. Year**	**Broad Domain of Research Work**	**Co-Supervisor**
1.	Prabhash K. Jha	2019	Machining Behavior of Al-based in-situ Metal Matrix Composites	Prof. P.K. Jha
2.	Nipun Gupta	2021	Analysis of Low Velocity Impact Damage in Sandwich Composite Structure	--
3.	Pinki Kumari	2021	An Exploration on Natural Fiber For Eco-Friendly Product Development.	--
4.	Yashpal	2021	Joining of Natural Fiber Based Composite Materials	--
5.	Sandeep Kumar	2022	Development of Natural Fiber Based Composite Material For Electrical Insulation in High Voltage Electric Machines	--
6.	Anjali Kesarwani	2023	Processing of Sustainable Composites	--
7.	Chandraveer Singh	2023	Processing of Natural Fiber Reinforced Composites using Unconventional Energy Sources	--
8.	Sreehari S.	2023	Conceptualization, Design and Development of Harvesting Strategies for Coffee	Prof. Bibhuti Ranjan
9.	Satyendra Tiwari	2023	Additive Manufacturing / Composite Materials	Prof. Varun Sharma
10.	Raj Kumar	2024	Sustainable Product Design and Development	Prof. Apurbba Kumar Sharma
11.	Pankaj Phulara	2024	Completed Course Work	Prof Shishir Sinha
12.	Sappogu Muralidhar	2025	Completed Course Work	--

Annexure II

Details of Masters Theses Supervised

S. No.	Title	Year	Name	Co-supervisor
1	Experimental investigation of the effect of gamma irradiation on the sustainable composite joints	2025	Sappogu Muralidhar	---
2	App design for the Account payable invoice automation	2025	Aamir Azad	Prof.Manish Kumar Asthana
3	From Awareness to Action: A student Friendly Approach to Mental Health Awareness and Support for IIT Roorkee	2025	Rajat	Prof. Rajat Agarwal
4	Design and Analysis of Compression Mold for Developing Sustainable Composites	2025	Hemanth Kumar V P	Prof. V. Huzur Saran
5	Defect Detection in Wire Arc Additive Manufacturing Through Real Time Current Monitoring	2024	Sivaram N	Prof Varun Sharma
6	Design and Development of Auxetic Meta-Materials	2024	Shailesh Ravindra Bankar	Prof Varun Sharma
7	Development of Predictive Maintenance Strategy using Digital Twin	2024	Anant Om	Prof A.K. Sharma
8	Interactive Learning Platform for Fostering Creativity	2024	Manthan Vyas	Prof Saptarshi Kolay
9	Design of a Usability Framework: Female Focused Mobile Safety Applications	2024	Ritika Kiran Madne	Prof Sonal Atreya
10	Optimizing the DaaS User Interface with Visual Feedback	2024	Shikha Chourasia	Prof Smriti Saraswat
11	Menstrual Cycle Awareness through Board Game	2024	Kushagr Singh Chauhan	Prof Smriti Saraswat
12	Processing of Natural Fiber Polymer Matrix Composites	2023	Gajendra Singh	Prof. Sham Sundar Ravindranath
13	Conceptualizing and Designing a Space Capsule for Space Engineering	2023	Gaikwad Sanket Dnyandeo	Prof. Abinash Kumar Swain
14	Building Interactive Education, Communication and Information System for Community Interaction Towards Rural Sanitation, Hygiene and Well-Being.	2023	Alok Kachhap	Prof. Manish Kumar Asthana
15	Machine Learning Model for Predicting Mechanical Properties of Natural Fiber Composite Materials	2022	Sagar Kumar Ratre	--
16	Finite Element Analysis of Joints in Fiber Based Composites	2021	Kunal Ameta	--
17	Joining Behaviour of Natural Fiber Reinforced Recycled PP Composites	2020	Jaydip K. Vadhel	--
18	Conceptualization, Design and Development of Non-structural Composites with Waste Materials	2019	Anjali Kesarwani	Prof. N.K. Navani
19	Design and Development of Bamboo/ Jute/ PLA Biodegradable Composites	2019	Pawan Rajani	--
20	Microwave Welding of Polymer Matrix Composites	2019	Ravi Saukta	--
21	Recyclability Analysis of Green Composites	2018	Anubhav Kumar	--
22	Composting Behavior of Natural Fiber Reinforced Thermoplastic Composites	2018	Dharmendra Kumar	--

23	Effect of Ceramic Based Coatings on Steel Welds	2017	Sonu Kanwal	Prof. Manas Mohan Mahapatra
24	Micro Electric Discharge Drilling in Carbon Fiber Reinforced Polymer Composites	2017	Ankita Kumar	--
25	Mechanical Behavior of Green Composites used for Sustainable Structures	2017	Kartikeya	--
26	Cold Mould Processing and Characterization of Short Fiber Reinforced Composites	2017	Sandeep Chaudhary	Dr. Dinesh Kumar
27	Effect of Fiber Characterization on Mechanical Behavior of Composites	2017	Anurag Singh Kachhwaha	--
28	Micro-EDM of Hard to Cut Materials	2016	Pramod Kumar Agrawal	Dr. Akshay Dvivedi
29	Parametric Investigation and Optimization of Near Dry EDM	2016	Kuldeep Chaudhary	Dr. Akshay Dvivedi
30	Studies on Electric Discharge Machining of Metal Matrix Composites	2015	Kamaljit Singh	Dr. Akshay Dvivedi
31	Comparative Analysis of Polymer Matrix Composites Processed by Microwaves and Compression Molding, 2015,	2015	Prag Sharma	Dr. Apurbba Kumar Sharma
32	Experimental Investigation in Fabrication of Micro-Channels by using Electric Discharge Machining	2015	Vichare Jaychandra Chandrakant	Dr. Akshay Dvivedi
33	Machining of Hard to Cut Materials using ECDM	2015	Sachin Baghel	Dr. Apurbba Kumar Sharma
34	Advanced Composite Material for Earthquake Resistant URM Building	2014	Dipali Jindal	--
35	Conceptualization, Design and Development of Injection Molding Process for FRPs	2014	Manish Kumar Lila	--
36	Conceptualization and Development of Low Cost Natural Fiber Reinforced Polymer Composite	2014	Fanindra Kumar	Dr. Sanjay K. Sharma
37	Drilling of Metal Matrix Composite: A Finite Element Approach	2013	Vikas Kumar Doomra	Dr. Dinesh Kumar
38	Machinability Studies on Aluminum Based Metal Matrix Composites	2013	Rohit Singh	Dr. Pradeep Kumar Jha
39	Electric Discharge Hole Grinding in Metal Matrix Composites	2013	Ravinder Kumar	Dr. Dinesh Kumar
40	Development and Characterization of Natural Fiber Reinforced Composites	2013	Deepak Varshney	Dr. Dinesh Kumar
41	Development and Characterization of Sustainable Polymeric Composites using Microwaves	2013	Mali Akshay Atul	Prof. Apurbba Kumar Sharma
42	Design and Development of a Ultra-Light Weight Prosthetic Leg	2012	Gagandeep Singh Bedi	Prof. Dinesh Kumar
43	Prediction of Forces and Damage in Machining of Composites using Artificial Intelligence	2012	Hitesh Sharma	Prof. Dinesh Kumar
44	Development and Characterization of Natural Fiber Reinforced Thermoplastic Composites	2012	Anil Sharma	Prof. Apurbba Kumar Sharma
45	Microwave Processing of Partially and Fully Green Composites	2012	Sabir Ali	Prof. Apurbba Kumar Sharm
46	Development of Hybrid Process for Secondary Processing of Metal Matrix Composites	2012	Aditya Pal Yadav	Prof. Akshay Dvivedi

47	A Comparative Investigation of Adhesively Bonded and Temporarily Fastened C2omposite Joints	2011	Harpreet Singh	Prof. Pradeep Kumar
48	Microwave Joining of Polymeric Matrix Composites	2011	D. Malik	Prof. Pradeep Kumar
49	Mechanical Behavior of FRP Laminates with Drilled Holes	2011	Manish Kumar Niranjan	Prof. Jitender Madaan
50	Design and Development of Drill Point Geometry for Damage Free Holes in FRP Laminates	2011	Rahul Mahajan	Prof. Jitendra Madaan
51	Some Investigations on Joining of AA-6061 and Al Based MMC's	2011	Pawan Kumar	Prof. Navneet Arora
52	Behavior of Closed-Cell Aluminum Foam under Impact Loading as energy Absorber	2010	Vaidya Sudarshan Vishnurao	Prof. Apurbba Kumar Sharma
53	Investigation of the Mechanical Behavior of MMCs using Finite Element Method	2010	Tonge Pradeep Vasant	Prof. Pradeep Kumar
54	Drilling of Fiber Reinforced Plastics using FEM Approach	2010	Vikas Sharma	Prof. Jitendra Madaan
55	Forming of Polymer Matrix Composites: A Finite Element Approach	2010	Sutar Prasad Laxman	Prof. Jitender Madaan
56	Modeling and Simulation of the Deboning Behavior of Wire Reinforced Aluminum Matrix Composites	2009	Shashi Bhushan	Prof. Pradeep Kumar
57	Behavior of Polymer Matrix Composites under Ballistic Impact	2009	Sunil Kumar	Prof. Apurbba Kumar Sharma
58	Damage Behavior of Honeycomb under Impact Loading	2009	Gharge Milind Kumar M.	Prof. Apurbba Kumar Sharma
59	Investigation of the Adhesively Bonded Composite Joints using FEA	2009	P.L. Anand	Prof. Pradeep Kumar Jha
60	Analysis of Buckling Performance of Laminated Cylindrical Shell With Cutout	2008	Abhishek Pyasi	Prof. Pushparaj Mani Pathak
61	Investigation of the Effect of Interfacial Characteristics on the Mechanical Behavior of Metal Matrix Composites	2008	Pradeep Kumar	Prof. Pradeep Kumar
62	Numerical Simulation of Low Velocity and Ballistic Impact on Polymer Composite Laminated Structures	2008	D.S. Gupta	Prof. Apurbba Kumar Sharma
63	Investigation of the Effect of Process Parameters on the Surface Quality of High Speed Steel (T1) in Powder Mixed EDM	2008	Deepak Bora	Prof. Pradeep Kumar
64	Process Parametric Study of Machining of Metal Matrix Composite by EDM Process, 2007,	2007	Saurabh Kumar Singh	Prof. Pradeep Kumar
65	Process Parametric Study of Machining of Metal Matrix Composite by USM/D Process [Ultrasonic Machining/Drilling]	2007	Prateek Kala	Prof. Pradeep Kumar
66	Investigation of the Machining Characteristics of GFRP laminates	2007	A. Singh	Prof. S. Singh

Annexure-III

Details of Selected Research Publications in Journals

(for detailed list, visit: https://scholar.google.com/citations?hl=en&user=-O4pphgAAAAJ)

International Journals

[1] Gupta, N; **Singh, I**, "Functionally graded properties of PA6/recycled milled carbon fiber composites through filament design in fused filament fabrication (FFF) process", Journal of Manufacturing Processes, 165, 101–117, 2026

[2] Kesarwani, A; Singh, C; **Singh, I**, "Surface Compatibilization of PLA/PBS Blends With Bio-Based Itaconic Acid: Mechanical and Thermal Characterization", Journal of Applied Polymer Science, e70602, 2026

[3] Kumar, R; **Singh, I**; Sharma, A K, "Development and abrasive wear characterization of an eggshell-based biofriendly polymeric nanocomposite", Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, 14644207261417497, 2026

[4] Kumari, P; **Singh, I**; Bhattacharjya, B R, "Aquatic water hyacinth fibers: Extraction, eco-friendly treatment, characterization, and product development", Biomass and Bioenergy, 209, 108949, 2026

[5] Sharma, R; **Singh, I**; Pal, K, "Mechanical, Tribological, and Antibacterial Performance of Bio-Ceramic Reinforced PLA Hybrid Nanocomposites for Biomedical Applications: An Experimental and Machine Learning Approach", Tribology International, 217, 111626, 2026

[6] Singh, Y; Kumar, R; Chauhan, N; Naik, T P; **Singh, I**, "Sustainable pineapple fiber-based PLA-PBAT biocomposites: Development, characterization, and analysis", Express Polymer Letters, 20(1), 2026

[7] Sharma, A; Bisht, S S; Kumari, M; Yadav, M; Saini, H; Jaswal, S; **Singh, I**; Gaur, B, "Green by Design, Smart by Chemistry: Recent Advances in Bio-Based Vitrimers for Next-Generation Sustainable Materials", Materials Today Sustainability, 101275, 2025

[8] Jha, P K; **Singh, I**; Jha, P K, "Machinability characteristics of an aluminum alloy composite: a study and analysis", Materials and Manufacturing Processes, 1–15, 2025

[9] Kumar, K S; Swamynaidu, M; Singh, C; **Singh, I**, "Natural weathering and soil degradation characteristics of lignocellulosic sisal fiber based bio-PBS composites", International Journal of Biological Macromolecules, 148679, 2025

[10] Sharma, R; Mehrotra, N; **Singh, I**; Pal, K, "Bioceramic and Antimicrobial Metal Oxide Reinforced Nanocomposites for Maxillofacial Bone Fixation", ACS Applied Bio Materials, 2025

[11] Sharma, A; Kumari, M; Bisht, S S; Yadav, M; **Singh, I**; Gaur, B, "From oils to functional materials: Advancement in vegetable oils as precursors for Next-Generation vitrimers", European Polymer Journal, 114298, 2025

[12] Kumar, K S; Muralidhar, S; Kaushik, D; **Singh, I**, "Effect of thermal aging on the mechanical, thermal, and morphological characteristics of sisal fiber/bio PBS sustainable composites", Materials Chemistry and Physics, 131327, 2025

[13] Gupta, P; Sharma, A K; **Singh, I**, "Surface and subsurface characteristics of microwave-metal discharge machined nickel-based superalloy", Surfaces and Interfaces, 107165, 2025

[14] Riyadh, I; Jaafar, M; Hamid, Z A A; Shafiq, M D; Rusli, A; Kusmono; **Singh, I**; Teramoto, N; Todo, M, "Recycled polyvinyl chloride composites: Effect of kenaf and wood fibers on mechanical and flammability properties", Journal of Vinyl and Additive Technology, 2025

[15] Singh, C; Kaushik, D; Kumar, K S; **Singh, I**, "Eco-innovative processing of poly (butylene succinate)-Kenaf composite laminates: Solar energy integration and material characterization", Polymer Composites, 2025

[16] Sharma, A; Chand, A; **Singh, I**; Gaur, B, "Vitrimers for 3D Printing Technology: Current Status and Future Perspectives", Industrial & Engineering Chemistry Research, 2025

[17] Mahajan, A; **Singh, I**; Arora, N, "CompoCraft: An expert system for process selection in sustainable composites", Knowledge-Based Systems, 113032, 2025

[18] Kumar, K S; **Singh, I**, "Sustainable oxalic acid treatment of lignocellulosic fibers for ensuring improved performance of treated fibers based bio PBS composites", International Journal of Biological Macromolecules, 139507, 2025

[19] Debnath, K; Choudhury, M R; Chaitanya, S; **Singh, I**; Srivatsan, T S, "Drilling of injection moulded natural fibre-reinforced composites using different drill bits: analysis of force, temperature, and damage", International Journal of Sustainable Materials and Structural Systems, 6(2), 177–195, 2024

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Annexure-IV

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Edited Books / Book Chapters

S.No.	Title of the Book	Editor/Authors	Publisher	ISBN	Date
1.	Primary and Secondary Manufacturing of Polymer Matrix Composites.	Kishore Debnath, Inderdeep Singh	CRC Press	9780367884925	December 12, 2019
2.	Advances in materials engineering and manufacturing processes.	Inderdeep Singh, Pramendra Kumar Bajpai, Kuldeep Panwar	Springer Verlag, Singapore	978-9811543302	May 28, 2020
3.	Trends in Materials Engineering: Select Proceedings of ICFTMM 2018.	Inderdeep Singh, Pramendra Kumar Bajpai, Kuldeep Panwar	Springer Verlag, Singapore	978-9811390159	July 13, 2019
4.	Advances in Engineering Design: Select Proceedings of ICOIED 2020	Pawan K Rakesh Apurbba K Sharma Inderdeep Singh	Springer	-	February 4, 2021

Annexure V

Funded Research Projects				
Title	**Funding Agency**	**Project Duration**	**Budget (in Lacs)**	**Partner Institutes/ Investigators**
Craft Based Resource Centre (CBRC) - SANCHAY	National Handicrafts Development Programme (NHDP)	2 years	200	Prof. Smriti Saraswat Prof. Bibhuti Ranjan Bhattacharjya Prof. U. Lenka
Drudgery Reduction and Income Enhancement of the Handloom Weavers Through Technology Intervention in Tripura	SEED, DST	3 years	75.28	Prof. Bibhuti Ranjan Bhattacharjya
Design and Development of Thermally Efficient Walling Unit	NBCC India Limited	30 months	44.70	Prof. Avolokita Agarwal Prof. Manish Mishra
Design and Development of Coffee Harvesting Machine	Central Coffee Research Institute	2 years	24.73	Prof. Bibhuti Ranjan
Conceptualization, Design and Development of Forest –Waste based Sustainable Composite Materials	MoEF & CC (NMHS)	3 years	16.14	-
Investigation of Formation of MW Plasma During Drilling of Metallic Materials Through in-situ Monitoring	DST (SERB)	3 years	46.03	Dr. A. K. Sharma
A Resource Efficient Method for Producing Orthopedic Bone Plate using Microwave Energy	SPARC (MHRD)	2 years	67.22	Dr. A. K. Sharma
Investigation of Mechanical and Environmental Properties of Bamboo Fiber Reinforced Polymer Matrix Composites Fabricated by Compression Molding and Injection Molding	AICTE (TEQIP – III)	2 years	11.42	Mr. Anil Sharma
Project approved under *Design Innovation Centre, IIT Roorkee*				
DIC Ph.D. Fellowship (DIC-1267-MID)	Ministry of Human Resources Development	3 Years	11.64	Dr. A. K. Sharma

International Collaborative Projects				
Title	**Funding Agency**	**Project Duration**	**Budget**	**Partner Countries/Institutes/ Investigators**
Eco-Fire Resist Hybrid Composites (2018R1A6A1A03024509)	National Research Foundation of Korea, Korea	9 years	1.5 Million USD (for first 3 years)	India, USA, Sweden, Portugal, New Zealand, China and Japan
Research and Education Grant for University Consortium (RED-UC)	ASEAN University Network/SEED-Net	30 months	USD 38,000	India, Japan Malaysia, Indonesia

Annexure VI

Details of Major Consultancy Projects

S.No.	Title of the Project	Funding Agency	Amount (in Lacs)	Co-Investigators
1.	Advance Engineering Program for Employees of PCBL	PCBL, Kolkata	49.80	Prof Sandeep Garg Prof Vinay Sharma
2.	Design of Fire Fighting Kits	FRI, Dehradun	10 (Appro.)	Prof. Sonal Atreya
3.	Safety Audit of Aerial Ropeways in Himachal Pradesh	Engineer-In- Chief, HPPWD Shimla	10.62	Prof. M.K. Pathak Prof. N.P. Pathak Prof. P. Maheshwari
4.	Design Validation of 3-Phase Asynchronous Traction Motor	Titagarh Wagons Ltd. India	11.8	Prof. M.K. Pathak Dr. S. Upadhyay
5.	Training Program on Value Engineering and Analysis	Severn Glocon Valves Pvt. Ltd. Chennai	2.21	---
6.	Independent Engineer for Dharamshala-McLeodganj Passenger Ropeway Project	Government of Himachal Pradesh	17.7	---
7.	Development of Natural Fiber Reinforced Composites	Godrej and Boyce Mfg. Co. Ltd.	3.93	---
8.	Design Vetting of EOT Cranes	RCC Group of Companies Gurgaon	1.18	Dr. S. Upadhyay
9.	Development of Pipe Joints	Kanha Plastics Private Limited	1.06	---
10.	Feasibility Studies for Improvement of Overall Productivity of Fabrication and Painting Shops of Everest Industries Ltd	Everest Industries	5.00	Dr. J. Madan Dr. A. Dvivedi
11.	Independent Engineer for Construction of Palchan (Kothi)- Rohtang Ropeway	Government of Himachal Pradesh	35	

Summary of Projects Completed under NMEICT, MoE, Government of India

	Title	Status
a)	**Development of Suitable Pedagogy Tools for Courses**	
	I. Work System Design (PI)	Completed
	II. Principles of Industrial Engineering	Completed
b)	**Development of NPTEL Phase-1 Courses**	
	i) Manufacturing Processes – I	Completed
	ii) Industrial Engineering	Completed
	iii) Processing of Non-Metals (Web and Video)	Completed
c)	**Development and Execution of NPTEL Online Certification (MOOC) Courses**	
	i) Product Design and Development	Completed
	ii) Processing of Polymers and Polymer Composites	Completed
	iii) Operations Management	Completed
	iv) Work System Design	Completed
	v) Manufacturing Guidelines for Product Design	Completed
	vi) Product Design using Value Engineering	Completed

NPTEL Online Certification Courses (MOOCs) Completed / Running

Course Name	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1. Processing of Polymers and Polymer Composites	✓	✓		✓	✓				✓	✓
2. Product Design and Development	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3. Work System Design		✓	✓	✓	✓	✓	✓	✓	✓	
4. Operations Management		✓		✓	✓	✓	✓	✓	✓	✓
5. Manufacturing Guidelines For Product Design			✓			✓	✓	✓	✓	✓
6. Product Design Using Value Engineering			✓						✓	

Recorded a Series of Ten Lectures for Educational Multi-Media Research Centre on the Topic of Composite Materials. Lectures are being telecast on educational channels of Doordarshan