



Apurbba Kumar Sharma, Ph.D.

**Associate Professor,
Mechanical and Industrial Engineering
Indian Institute of Technology Roorkee
Roorkee – 247 667**



General

Apurbba Kumar Sharma, currently an Associate Professor in the Department of Mechanical and Industrial Engineering at the Indian Institute of Technology Roorkee, Roorkee – 247 667, Uttarakhand, India, can be reached at +91-1332-285421, 9411100286 (e-mail: akshafme@iitr.ac.in, akshafme@gmail.com). Presently, he is also Associate Dean, Academic Studies.

Born to **Smt. Bidhu Bala Devi** and **Shri Rajat Chandra Sharma** in Nalbari district of Assam, India, Shri Sharma possesses a simple personality and has deep interest in teaching and research. Trained in the Laboratory of **Professor R. Krishnamurthy** of IIT Madras, Shri Sharma adores nature and is a firm believer of human values. Apurbba Kumar Sharma resides in the A-101, Shivalik Apartments, I I T Roorkee campus with lovely daughters- **Natasha** (17), **Ruchira** (10) and wife **Dr. Himadri** who is working as an Assistant Professor in the School of Management, COER, Roorkee.

Education

Degree/ Dip.	Discipline / Specialisation	Division / Grade	Year	University/ Institute
B.E.	Mechanical Engg.	First	1988	Dibrugarh University
P.G.DIP.	Instrumentation	First	1989	Gauhati University
M. Tech.	Computer Integrated Manufacturing (CIM)	8.27 (CGPA)	1996	IIT Madras
Ph. D.	Manufacturing (Surface Engg.)	--	2003	IIT Madras

BRIEF RESUME

Dr. Apurbba Kumar Sharma is currently an Associate Professor in the Department of Mechanical and Industrial Engineering at IIT Roorkee, India. Currently, he was also holding the posts of Associate Dean, Academic Studies in this Institute and Chairman, Institute Academic Performance Evaluation Committee, IIT Roorkee during July 2013 to April, 2017.

He has obtained his Bachelor degree from Dibrugarh University, Assam. He has subsequently obtained his Masters and Ph D degrees from I I T Madras.

Research interests of Dr Sharma include:

1. Advance Manufacturing Methods, Hybrid Processes
2. Microwave Material Processing (in particular - Microwave Drilling, Microwave Casting, Microwave joining, Microwave Cladding)
3. Surface Engineering

Dr. Sharma has EIGHT Indian Patents to his credit.

He has published more than 100 research papers in International Journals. He has also presented/published more than 110 research papers in various International and National Conferences. He has contributed a Chapter in the McGraw-Hill Education Handbook on Invitation.

Dr. Sharma is also a reviewer of several reputed international journals including – Journal of Microwave Power and Electromagnetic Energy, Journal of Manufacturing Processes, Journal of Advanced Manufacturing Technology, Proceedings of the IMechE Part B: Journal of Engineering Manufacture, Proceedings of the IMechE Part E: Journal of Process Mechanical Engineering, Surface and Coatings Technology, Precision Engineering, Surface Engineering, Tribology International, Tribology Transactions, Tribology Letters and *Kovové Materiály*-Metallic Materials. He has also edited one International Conference Proceedings.

He has developed a Full Web-based Video Course on “Advanced Manufacturing Processes” under the NPTEL Programme of the Government of India. He has also developed a course as the Principal Developer on “Principles of Industrial Engineering” for undergraduate students under the Pilot Phase of the National Mission Project on Pedagogic Development, Sponsored by the Ministry of Human Resources Development (MHRD), Govt. of India.

Dr. Sharma has advised/supervised **ELEVEN** Ph. D. programs and FIVE others are in-progress. He has also supervised Forty Four Masters Dissertations and Twenty Eight Bachelor Dissertations.

He was working as a DAAD (Germany) Fellow in the Pulsed Power and Microwave Technique (IHM), Karlsruhe Institute of Technology (KIT), Germany.

He has completed five funded research projects, and two other projects funded by CSIR, and BRNS, Govt of India are in progress. He has also completed few consultancy works.

Dr. Sharma is associated with several professional bodies which include- Fellow of the Institution of Engineers (India), Member of American Society of Mechanical Engineers, USA, Member of Society of Manufacturing Engineers (SME), USA, Member of Global Science and Technology Forum (GSTF), Singapore, Member of Materials Research Society of India, Member of the Indian Institute of Industrial Engineers and a member of ISTE, New Delhi.

He has organized EIGHT AICTE (QIP) sponsored Short Term Courses, Four AICTE Sponsored Workshops, THREE MHRD courses and Two self-sponsored Courses.

Dr. Sharma is also representing IIT Roorkee as the Principal Member in the Pneumatic Tools Sectional Committee, PGD08 of Production and General Engineering Department at the Bureau of Indian Standards, New Delhi.

In addition to his normal duties, Dr. Sharma is currently holding the position of Associate Dean, Academic Studies and Chairman, Institute Academic Performance Evaluation Committee of IIT Roorkee and is instrumental in formulating and implementing the new Programme Structures for UG and PG Programmes at IIT Roorkee. He is also a member of Board of Studies of other universities as well.

Dr. Sharma has chaired several Technical Sessions in prestigious International Conferences including in ASME sponsored Manufacturing Science and Engineering Conference (MSEC) in the USA.

Dr. Sharma has delivered several Expert / Invited Lectures in several institutions of repute.

Patent Obtained

Sl No	Title of the Patent	Investigators	Patent Number and Year	Brief Description
1.	Articles of Glazed Ceramic Composites on Metal Substrates and Method of Manufacture Thereof.	Apurbba Kumar Sharma and R. Krishnamurthy	Indian Patent No.199106 (563/MAS/2001) Year: 2006	A new technique for glazing of plasma sprayed ceramic composite surfaces by controlled exposure of microwave radiation. Glazed surfaces reveal annihilation of spraying defects and improvement in functional properties of the deposits. The technique is considerably fast and considered as a green material processing technique.
2.	A method of joining of bulk metallic materials by microwave hybrid heating.	Dr A K Sharma M S Srinath Dr Pradeep Kumar	Indian Patent Application No. 1994/DEL/2009 Year: 2009	A new technique for joining of bulk metallic materials by controlled exposure of microwave radiation.
3.	A method of developing metallic cladding/ coating on metallic substrates by microwave irradiation.	Dr A K Sharma Dheeraj Gupta	Indian Patent Application No. 527/DEL/2010 Date: 09.03.2010	A new technique for developing cladding / coating of metallic / non-metallic materials on metallic surfaces by controlled exposure of microwave radiation.
4.	A natural polymer abrasive media for the abrasive flow machining and a process for preparation thereof	Dr. A K Sharma Rajesha S G Venkatesh Dr Pradeep Kumar	Indian Patent Application No. 1349/DEL/2011 Date: 09.05.2011	A new product in the form of semi-solid natural polymer, which will be used as an abrasive carrier for Abrasive Flow Machining Process. It acts as a deformable stone and has good thermal stability.
5.	An improved ultrasonic abrasive flow machining and a device therefor	Dr. A. K. Sharma Dr Pradeep Kumar Rajesha S	Indian Patent Application No. 3578/Del/2011 Date: 09.12.2011	This invention relates to a development of new hybrid process. The developed process is capable of enhancing the performance many folds while compared with traditional AFM process. Developed process is capable of finishing advance materials efficiently and yields reduction in the process cost.
6.	A method of micro-drilling with microwaves through metallic concentrator	Apurbba Kumar Sharma , Shantanu Das, Nitin Kumar Lautre, Titto John George, Rajesh Kumar and Pradeep Kumar,	Application No.: 201621004759, February 10, 2016.	A new technology for micro-hole drilling with microwave energy. A metallic concentrator is used as the tool. The process is fast (a 02 mm thick glass plate can be drilled within 4 seconds, suitable for micro-fabrication.
7.	A device for in-situ microwave casting of metals and alloys	Dr. A. K. Sharma Radha Raman Mishra Mohit Choudhury Saurabh Puri	Application No.: 201611037834, November 05, 2016.	A new technology for casting process inside the Microwave applicator that has higher yield per unit processing time and less defects.
8.	A flexible device for multiple ultrasonic machining operations	Akshay Dvivedi, Manjot Singh Cheema and Apurbba Kumar Sharma	Application No.: 201611041640, December 06, 2016.	A novel device that enables multiple operations like Turning, Drilling, Thread cutting in a conventional Ultrasonic Machine.

Fellowship/Scholarship Awarded

A. International

1. **DAAD Research Fellowship** under Faculty Exchange Programme 2011, Federal Republic of Germany.

B. National

1. **National Merit Scholarship**, Govt. of India.

Outline of the Self Ph. D. Work

Dr. Apurbba Kumar Sharma was involved in a Full-Time Research Program in the Mechanical Engineering Department of Indian Institute of Technology Madras, Chennai, leading to the Ph.D. Thesis on '**Microwave Glazing of Plasma Sprayed Ceramic Composite Coatings and Their Characterisation**'. The research is concerned with application of Microwave Energy for processing of ceramics/ ceramic composites. Two major aspects have been addressed- characterisation of plasma spray deposited alumina-titania ceramic composites including defects characterisation, and microwave glazing of plasma sprayed ceramic composites for defect annihilation and performance enhancement. A new approach, called MICROWAVE GLAZING has been proposed for post processing of plasma sprayed coatings. Multidisciplinary characterisation techniques have been used to characterize the coatings. Both Materials and Mechanical aspects have been explored during characterization through Structural, Chemical, Mechanical, Physical and Functional evaluation techniques. Structure-property correlation has been highlighted. The research work yielded the following:

- | | | |
|--|---|-----------|
| a. Indian Patent | : | One |
| b. Paper published in Journals | : | Eight |
| c. Papers presented/published in Conferences | : | Eighteen. |

Research Interests

1. Advanced Manufacturing Methods, Hybrid Finishing Processes
2. Microwave Material Processing (Microwave Casting, Microwave Drilling, Microwave Joining of Similar/Dissimilar Materials, Microwave Cladding/ Coating)
3. Surface Engineering
4. Micromachining.

Contribution in McGraw-Hill Education Handbook (International Edition)

Contributed a Chapter (Chapter 3.10) Titled “**Electrochemical Discharge Machining**” (pp. 277–290) on Invitation in the McGraw-Hill Education Handbook with following details:

Editor: LaRoux Gillespie *Dr. Eng., FSME, PE, CMfgE, Former President SME*
 Publisher: McGraw Hill Education; 1 edition (March 13 2017)
 Language: English
 ISBN10: 1259587452
 ISBN13: 9781259587450
 Hardcover: 624 pages

Summary of Research Publications ([Details on page 22](#))

SI No	Patent	Total	Present Status	
			Awarded	Registered
1.	Indian Patent	08	01	07

SI No	Journal / Conference	Total	Present Status	
			Published	In-press / Accepted
2.	Journal Papers	99	99	--
3.	International Conferences	76	76	--
4.	National Conferences	34	34	--

Publication Metrics

1.	Citations (Google Scholar)	939
2.	h-index (Google Scholar)	19
3.	i10-index (Google Scholar)	31
4.	RG Score (Research Gate)	31.27
5.	Impact Points (Research Gate)	94.09

Research Guidance

[A] Ph. D. Thesis Supervision (11+05)

SI No	Title/Area of research	Name of scholar	Co supervisor, if any	Status
1.	Development of superhard coatings using microwave energy	Anurag Singh (July, 2015 -)	--	In-progress
2.	Microwave drilling of metal-	Gaurav Kumar (July, 2015 -)	--	In-progress

	based materials			
3.	An Ultrasonic Micro Machining Approach to Fabricate Microchannels on Glass/Si	Dungali Sreehari (January, 2015 -)	--	In-progress
4.	Investigations on Retreading Tyre Supply Chain	Lokesh Saxena (March, 2015 -)	Dr. P K Jain	In-progress
5.	Development and characterisation of in-situ microwave casting process	Radha Raman Mishra (July, 2014 -)	--	In-progress
6.	Performance analysis of ECDM process while machining glass and alumina	Mudimallana Goud (July, 2013 - Dec, 2016)	--	Defended (Dec 12, 2016)
7.	Development of nano cladding for wear resistance	Sunny Zafar (July, 2013 – Aug, 2016)	--	Defended (Aug 12, 2016)
8.	Investigations on Microwave drilling of Characteristically different materials	Nitin Kumar Lautre (July, 2012 – Sept, 2015)	Dr. Pradeep Kumar	Defended (Sept 20, 2016)
9.	Performance Analysis of Ultrasonic Assisted Abrasive Flow Machining Process	Gudipadu Venkatesh (Jan, 2012 – May, 2015)	Dr. Pradeep Kumar	Defended (Sept 11, 2015)
10.	An Ultrasonic Micro Machining Approach to Fabricate Microchannels on Glass	Manjot Singh Cheema (July, 2011 – June, 2015)	Dr. Akshay Dvivedi	Defended (Sept 08, 2015)
11.	Fusion Joining of Advanced Materials using Microwave Hybrid Heating	Amit Bansal (July, 2011 – Dec, 2014)	Dr. Pradeep Kumar	Defended (May 04, 2015)
12.	Parametric studies on Micro ECDM of Optical glass and Ceramics	C. S. Jawalkar (July, 2010 – July, 2013)	Dr. Pradeep Kumar	Defended (January 31, 2014)
13.	Some Studies on Development of Microchannels Using Micro Ultrasonic Machining	Vivek Jain (July, 2010 – April, 2012)	Dr. Pradeep Kumar	Defended (June 09, 2012)
14.	Microwave Cladding of Metal-based Materials and their Characterisation	Dheeraj Gupta (Jan, 2009 – Jan, 2012)	--	Defended (May 22, 2012)
15.	Joining and Characterisation of Metallic Materials through Microwave Hybrid Heating	M S Srinath (July, 2009 – May, 2011)	Dr. Pradeep Kumar	Defended (Oct. 17, 2011)
16.	Some Studies to Enhance the Capabilities of Abrasive Flow Machining Process	Rajasha S (July, 2009 – Feb, 2011)	Dr. Pradeep Kumar	Defended (May 27, 2011)

[B] Masters Thesis Supervision (Total : 44 + 01)

SI No	Title /Area of research	Name of scholar	Co supervisor, if any	Status
1.	A New Design and Fabrication of Flute	Dhruv Narayan	Dr. Akshay Dvivedi	In-Progress (2016–17)
2.	Joining of pipes by Microwave Energy	Dheerendra Gamit	--	Awarded (2015–16)

3.	Studies on Machining of Composite Material using ECDM Process.	Debabrata Naskar	Dr. Akshay Dvivedi	Awarded (2015–16)
4.	Study of Concentrator in Microwave Machining of Materials	Parvej	--	Awarded (2015–16)
5.	Machining of Silicon Wafers using Ultrasonic Machining	Shailesh Kumar Gupta	--	Awarded (2015–16)
6.	Microwave curing of Natural fiber reinforced PMCs	Gaurav Kumar	Dr. Inderdeep Singh	In-Progress (2015–16)
7.	Machiining of hard to cut materials using ECDM	Sachin Baghel	Dr. Inderdeep Singh	Awarded (2014–15)
8.	Comparative Analysis of Polymer Matrix Composites Processed by Microwaves and Compression Molding	Prag Sharma	Dr. Inderdeep Singh	Awarded (2014–15)
9.	Parametric Investigations on Electrochemical Discharge Form Machining	Khandelwal Gaurav Prakash	Dr. Akshay Dvivedi	Awarded (2014–15)
10.	Some Studies on Weldability Aspects of Nitronic Steels	Naveen Kumar	Dr. Navneet Arora	Awarded (2014–15)
11.	Fabrication of closed microchannel using USM	Saurav Acharya	--	Awarded (2013–14)
12.	Processing of industrial wastes using microwaves	Vaibhav Bist	Dr. Pradeep Kumar	Awarded (2013–14)
13.	Machining of Al-alloy using USM	Dungali Sreehari	Dr. Akshay Dvivedi	Awarded (2013–14)
14.	Microwave joining of MMCs	Jeevan Bist	Dr. Akshay Dvivedi	Awarded (2013–14)
15.	Some studies in Rotary ECDM	Faraz Ansari	Dr. D B Karunakar	Awarded (2013–14)
16.	Investigation on effect of process parameters for enhancing capabilities of micro USM	Sunil Kumar Maddeshia	Dr. Pradeep Kumar	Awarded (2012–13)
17.	Investigation on Finishing of External surfaces using abrasive Flow Machining	Tarlochan Singh	Dr. Akshay Dvivedi	Awarded (2012–13)
18.	Characterisation of MMCs developed using different moulding materials	Ramesh Babu Ningala	Dr. P K Jha	Awarded (2012–13)
19.	Investigations on dry-sliding and erosion wear of microwave induced wear resistant surfaces	Sunny Zafar	Dr. Navneet Arora	Awarded (2012–13)
20.	Development and characterisation of sustainable polymeric composites using microwaves	Mali Akshay Atul	Dr. Inderdeep Singh	Awarded (2012–13)
21.	Studies on Fabrication of Microchannels	Saurabh Swain	Dr. Pradeep Kumar	Awarded (2011–12)
22.	Modeling and simulation of Ultrasonic Assisted AFM process	Gaurav Arora	Dr. Pradeep Kumar	Awarded (2011–12)
23.	Modeling and simulation of Microwave Joining process	John George Tito	Dr. Pradeep Kumar	Awarded (2011–12)

24.	Development of Green Composites using Microwave energy	Sabir Ali	Dr. Inderdeep Singh	Awarded (2011–12)
25.	Characterisation of sustainable composites	Anil Sharma	Dr. Inderdeep Singh	Awarded (2011–12)
26.	Finishing of ED Med Inconel 718 Surface through Abrasive Flow Machining	Pramod Kumar Patnaik	Dr. Pradeep Kumar	Awarded (2010–11)
27.	Experimental Investigation of Various Process Parameters While Machining Glass Through Micro- USM	Vineet Chak	Dr. Pradeep Kumar	Awarded (2010–11)
28.	Modeling and Simulation of Microwave Metal Interaction and its Validation	P. Suryanarayana Murthy	Dr. Pradeep Kumar	Awarded (2010–11)
29.	Development and Characterization of Jet Slurry Erosion Resistant Metallic Cladding on Austenitic Stainless Steel	Prabhakar M. Bhovi	Dr. Sushanta Dutta	Awarded (2010–11)
30.	Development of New Polymer Media for Abrasive Flow Machining	G Venkatesh	Dr. Pradeep Kumar	Awarded (2009–10)
31.	Optimization of Process Parameters in Microwave Joining of Metallic Materials in a Multimode Microwave Applicator	Chintam Suresh Kumar	Dr. Pradeep Kumar	Awarded (2009–10)
32.	Theoretical Studies on the Material Grain Development during Severe Plastic Deformation (SPD) Process	Venkata Subbarayudu Pesala	--	Awarded (2009–10)
33.	Behaviour of Closed-Cell Aluminium Foam under Impact Loading as Energy Absorber	Vaidya Sudarshan Vishnurao	Dr. Inderdeep Singh	Awarded (2009–10)
34.	Investigation on Influence of Process Parameters of Electro Discharge Machining of Al 7075 SiC Composite	Kunal Nawasagare	Dr. D B Karunakar	Awarded (2009–11)
35.	Numerical Simulation of ballistic impact on polymer matrix composite material	Sunil Kumar	Dr. Inderdeep Singh	Awarded (2008-09)
36.	Maintenance prevention Design and equipment planning for OEE implementation	Sanjit Singh	Dr. Dinesh Kumar	Awarded (2008-09)
37.	Electrochemical honing of helical gears	Joy Prakash Mishra	Dr. N. K. Jain	Awarded (2008-09)
38.	FE analysis of honeycomb structures	Milind Garge	Dr. Inderdeep Singh	Awarded (2008-09)
39.	Numerical simulation of low velocity and Ballistic impact on polymer composite Laminated structures	Durga Shankar Gupta	Dr. Inderdeep Singh	Awarded (2007-08)
40.	Design and analysis of Insertion mechanism and trajectory control for in-vivo robot for stomach biopsy	Sreenath Reddy	Dr. P. M. Pathak	Awarded (2007-08)

41.	Development of Electrochemical Honing for finish machining of spur gears	Ramlal Naik	Dr. N. K. Jain	Awarded (2007-08)
42.	Maintenance strategy selection	Uday Devekar	Dr. Dinesh Kumar	Awarded (2007-08)
43.	Modeling and dynamic analysis of biocompatible robotic arm	Chandekar Bhupendra Gopal	Dr. P. M. Pathak	Awarded (2006-07)
44.	Diamond grinding of Thermal spray deposits	L. Deshpandulal	--	Awarded (2006-07)
45.	Some studies on effect of process parameters on process performance in hybrid abrasive flow machining	K. Malla Reddy	Dr. Pradeep Kumar	Awarded (2006-07)

[C] Undergraduate (B. Tech.) Dissertation Supervision (Total : 28 + 01)

Sl. No.	Degree	Title of Dissertation	Name of student	Co supervisor, if any	Year
1.	B.Tech. (Indl. &Prod. Engg.)	Development of a customer-bid based model for pricing cab fare.	Apurv Maheshwari Utkarsh Narayan Yash Gupta	--	In-progress 2016–17
2.	-do-	Analysis of Manufacturing Systems using Predictive Decision Model	Tanmay Jain Nikhil Guria Diksha Meena	--	2015–16
3.	-do-	Analysis of Facilities in the MIED, IIT Roorkee	Varun Pallav Jain	--	2015–16
4.	-do-	DSS for Site Selection	Ashish Taneja Mohit Hemrajani Rohit Pathak	--	2014–15
5.	-do-	Processing of Materials with Microwaves for Joining Applications	Akash Chaudhury Mahipat Shahi Rahul Jain	--	2014–15
6.	- Do -	Characterisation of microwave cast.	Revti Raman Suman Kumar Suman Manu Mrinal	--	2013–14
7.	- Do -	Development of microwave casting.	Mohit Chaudhary Sourabh Puri	--	2012–13
8.	- Do -	Characterisation of microwave sintered mechanical elements.	Abhay Jain Anuj Gang Bhartendu Sirohi	--	2012–13
9.	- Do -	Microwave processing of green composites	Aniket Modi Himanshu Sharma	Dr. Inderdeep Singh	2012–13
10.	- Do -	Development and characterisation of Microwave cladding of Inconel on stainless steel.	Archana Singh Manisha Rana	--	2011–12
11.	- Do -	Modeling and Simulation of Hybrid Abrasive Flow Machining (AFM)	Prateek Rai	--	2010–11
12.	- Do -	Automation of motion control system for Micro USM	Anant Saxena Lalit Mohan Singh Meena Lokesh Gulati Manoj Meena	--	2010–11
13.	- Do -	Design and Fabrication of Abrasive Jet Machine with emphasis on Nozzle Design	Rohit Srivastava Sharwan Ram Kumhar Shashank Shekhar	--	2009–10
14.	- Do -	Development of Copper Coating on Graphite using Microwave Field	Anshul Meshram Sameer Kumar Mandal Satya Pal Singh	--	2009–10

15.	- Do -	Assessment of HAZ in EDMed surface	Samrat Maji Tuhin Harit Rohitash Kumar (M.E.)	--	2008-09
16.	- Do -	Index of Agility in Indian Two Wheeler Manufacturing Industry	V. Chabra, V. Jain	--	2006-07
17.	- Do -	Fabrication and Testing of thin CFRP	Kumar Pritom S. Sharma A. Agarwal	Dr. I. Singh	2006-07
18.	B. E. (Mech. Engg.)	Adaptive Slicing for Effective Rapid Prototyping	S. Mohan N. Chakravarthy B. Das	--	2005
19.	- Do -	PC-Based Automatic Check Gate Operation System	D.Nath P.P. Bora P.P. Dutta	--	2005
20.	- Do -	Design of a Bamboo Shoot Peeling Cutter	Indra Mohan Das Ekbal Hussain Prodhani Saurabh Bikas Borah Pallab Kumar Kalita	Dr. Plabon Kakoti	2005
21.	- Do -	A Study on Rapid Prototyping Processes With Special Emphasis on Three-Dimensional Deposition Method	B. Goswami B. Sharma P. P. Maut	--	2004
22.	- Do -	Study of CNC Systems and development of a CNC Integrated Software	K. Churanjit B. Gogoi A. Chakraborty	--	2004
23.	- Do -	Design and Fabrication of a Low Cost Solar Electric Hybrid Dryer for Mushroom	Rajib Kr. Singh	--	1999
24.	- Do -	Design and Fabrication of a Mechanised Device for Surface Finishing	A. K. Sharma M. K. Agarwal	--	1998
25.	- Do -	Design and Fabrication of a Walking Robot	Rana Saikia	--	1998
26.	- Do -	Development of a Computerised Parts coding System : A Group Technology Approach	I. Haque D. Singh T. Deka Agha J. Khan	--	1997
27.	- Do -	Microstructure Study of a few Common Mechanical Elements Subjected to Dynamic Thermal Load	J. Devi L.Rajkhowa	--	1997
28.	- Do -	Robotic Engineering : An Overview with Solution of Direct Kinematics Problem involved in Robot	Mohan K. Teye B. Deka P. Deori	Dr S M Hazarika	1994

		Manipulator			
29.	- Do -	Design Considerations of an Orifice Meter	D. Chetri	--	1993

Ph. D. Examiner

SI No	Title of the Thesis	Name of scholar (Date of Exam)	Supervisor(s)	Institute/ University
1.	Performance Assessment of Vegetable Oil based Nano Cutting Fluids in Turning AISI 1040 Steel	Smt. Padmini R (11.07.2016)	Dr. P. Vamsi Krishna (NIT, Warangal) & Dr. K G Krishna Rao (JNTU)	Jawaharlal Technological University, Hyderabad
2.	Investigations on Tribological and Machining Characteristics of Aluminium Rice Husk Ash Composite	S D Saravanan (05.12.2015)	Dr. Senthil Kumar (PSG College, Coimbatore)	Anna University, TN
3.	Improving the surface properties of superalloys by electrical discharge machining process.	Anoop Kumar Singh (24.09.2015)	Dr. Sanjiv Kumar Dr. V P Singh	PEC University of Technology Chandigarh, India
4.	Surface alloying by electrical discharge machining process using powder metallurgy electrodes	Amoljit Singh Gill (24.09.2015)	Dr. Sanjiv Kumar	PEC University of Technology Chandigarh, India
5.	A Study on Tribological Behaviour of Composite Materials	Sudarashanrao K (26.08.2015)	Dr. Y S Varadarajan (NIE, Mysuru)	VTU, Belgaum
6.	Studies on Grindability of Inconel 751 with various Cooling Strategies	A S S Balan (11.07.2014)	Professor L. Vijayaraghavan	I.I.T. Madras
7.	Parametric Investigations in ECDM	S. Sathisha (07.11.2014)	Dr. Somashekhar Hiremath (IITM)	VTU, Belgaum
8.	Study of Machinability properties of Zinc-Aluminium (ZA43) alloy reinforced with SiC particulate metal matrix composites	Rajaneesh N. Marigoudar	Professor K Sadashivappa	Visveswaraya Technological University, Belgaum, Karnataka. (Bapuji Institute of Technology, Karnataka)
9.	Analysis of Bidirectional Fiber Reinforced Composites	V V Sridhara Raju (Thesis Evaluated)	Dr. V Bala Krishna Murthy Dr. J. Suresh Kumar	JNTU, Hyderabad
10.	Analysis of composite	T. Dharma Raju	Dr. V Bala	JNTU, Hyderabad

	laminated plates using higher order theories with zig-zag function	(Thesis Evaluated)	Krishna Murthy Dr. J. Suresh Kumar	
11.	Tribo-performance Evaluation of Fiber Reinforced and Nano filled Composites Friction Materials	Tej Singh (Thesis Evaluated)	Dr. Amar Patnaik and Dr. B.K. Satapathy	NIT, Hamirpur
12.	Some investigations into Cylindrical Electrochemical Abrasive Machining Process	Judal Kesarabhai Bhikhabhai (29.08.2013)	Professor Vinod Yadava	NIT, Allahabad.
13.	Optimization of welding parameters for chromium base hardfacing alloy using various processes and some comparative studies on wear characteristics	K.M. KENCHI REDDY (21.06.2013)	Dr. C. T. Jayadeva	Visveswaraya Technological University, Belgaum, Karnataka. (Adichunchanagiri Institute of Technology Chikmagalur -577102, Karnataka, India)
14.	Optimal path planning for mobile robots in off-line & on-line situations	P. Raja (02.10.2012)	Dr. S. Pugazhenth	SASTRA University, Thanjavur, Tamil Nadu – 613 401, India
15.	Optimization of operation sequencing in computer aided process planning using hybrid S-GENSAT algorithm	Nallakumarasamy G. (03.01.2012)	Dr. P. S. Srinivasan	Anna University, Chennai, Tamil Nadu – 613 401, India
16.	Optimization of work piece location and machining parameters for hexapod machine tool	S. Muruganandam (21.09.2009)	Dr. S. Pugazhenth	SASTRA University, Thanjavur, Tamil Nadu – 613 401, India

International Journal Reviewer / Editorial Board Member

A.	Reviewer (Journal)
1.	Journal of Microwave Power and Electromagnetic Energy
2.	Applied Surface Science
3.	Journal of Manufacturing Processes, SME
4.	Tribology International
5.	Tribology Transactions
6.	Tribology Letters
7.	Precision Engineering
8.	Kovové Materiály - Metallic Materials
9.	Surface Engineering
10.	Proceedings of the IMechE Part B: Journal of Engineering Manufacture

11.	Proceedings of the IMechE Part E: Journal of Process Mechanical Engineering
12.	International Journal of Advanced Manufacturing Technology
13.	Surface & Coatings Technology
14.	Indian Journal of Engineering & Material Sciences
15.	Sadhna
B.	Editorial Board Member (International Conference Proceedings)
1.	Jointly Edited the Proceedings of the First International and 22 nd AIMTDR Conference held at IIT Roorkee, 2006

Other International Recognition

A.	Who's Who
1.	Selected as one of the Biographees of The Marquis Who's Who in the World in the 27 th Edition (2010).

Session Chair

1.	Chaired a Technical Session on Non-Traditional Processing of Advanced Material Processing Track in the ASME 2013 International Manufacturing Science and Engineering Conference (MSEC2013) , June 10-14, 2013, Madison, Wisconsin, USA.
2.	Chaired a Parallel Technical Session in the International Conference on Processing and Fabrication of Advanced Materials (PFAM-2014) organised by the Department of Mechanical and Industrial Engineering, IIT Roorkee, Roorkee, India on December 05, 2015.
3.	Co-chaired a Plenary session in the International Conference on Advanced Materials and Processing (ICAMP – 2011) held at the R M K Engineering College, Chennai (TN) with Professor L. Vijayaraghavan, Mechanical Engineering Department, IIT Madras, Chennai, India on December 19, 2011.
4.	Chaired a Parallel Session in the National Conference on Emerging Challenges for Sustainable Business – 2012 organised by the Department of Management Studies, IIT Roorkee, Roorkee, India on June 01, 2012.

Research Papers Presented Outside India

Sl No.	Title of the Research Paper	Programme	Date (Duration)	Venue
1.	An ANN Approach for Prediction of Wear Behaviour of WC-12Co Nanostructured Microwave Clad	International Tribology Conference (ITC 2015)	Sept. 16 – 20, 2015	Tokyo University of Science, Tokyo, Japan
2.	Experimental investigations on micro channeling through ECDM using different electrolytes	ASME 2013 International Manufacturing Science and Engineering Conference (MSEC2013)	June 10-14, 2013	Madison Convention Centre, Wisconsin, organized by University of Wisconsin at Madison, USA.
3.	Investigations on microstructural characterization of microwave composite clads on austenitic stainless steel	2 nd Annual International Conference on Materials Science, Metal & Manufacturing (M3 2012)	November 19-20, 2012	Hotel Fort Canning, Singapore
4.	Micromachining with ECDM: Research potentials and experimental investigations	International Conference on Mechanical, Industrial, and Manufacturing Engineering (ICMIME 2012)	January 15-17, 2012	Geroldswil Swiss Hotel, Geroldswil, Zurich, Switzerland.
5.	Investigation on Sliding Wear Performance of WC10Co2Ni Cladding Developed Through Microwave Irradiation	International Conference on Wear of Materials (WOM 2011)	05.04.2011 (April 03 – 07, 2011)	Sheraton Society Hill, One Dock St, Philadelphia, PA 19106, United States of America (USA).
6.	Some Aspects of Surface Integrity Study of Electro Discharge Machined Inconel 718	International Conference (MATADOR 2010)	14.07.2010 (July 14 – 16, 2010)	The University of Manchester, Barnes Wallis Building Sackville Street Manchester M60 1QD, UK.

Sponsored Project Handled/Proposed

Title of the Project	Name of the Funding Agency	Amounts (Rs.)	Status
Materials Joining and Drilling with Microwaves	BRNS, Mumbai (DAE, Govt. of India).	31,73,025.00	Completed
Parametric studies during machining of Glass and Metal Matrix Composite (Al-7075) using Electrochemical Discharge Machining (ECDM)	Council of Scientific and Industrial Research, New Delhi, India.	28,84,000.00	Completed
Development and Parametric Study of Ultrasonically Assisted Abrasive Flow Machining (UAAFAM) for Precision Finishing	DST, New Delhi	20,40,000.00	Completed
Parametric studies during machining of microchannels on silicon wafer using micro ultrasonic machining.	Council of Scientific and Industrial Research (CSIR), New Delhi, India.	13,00,000.00	Completed
Microwave joining of Metals	IIT Roorkee, Roorkee – 247 667.	1,00,000.00	Completed
Solar Electric Hybrid Mushroom Dryer	Assam Science Technology and Environment Council (ASTEAC), Silpukhuri, Guwahati–781 003.	Rs.6000.00	Completed

Academic Administration / Reform

1. Member, TIDES, Business Incubator, IIT Roorkee : March, 2017 onwards.
2. Associate Dean, Academic Studies, July 19, 2013 – April 26, 2017.
3. Member, Senate, IIT Roorkee : July 19, 2013 – April 26, 2017.
4. Member, Executive Committee on Senate (ECS), IIT Roorkee : July, 2013 – April, 2017.
5. Member, Institute Academic Programme Committee (IAPC) : July, 2013 – April, 2017.
6. Member, Academic Restructuring Committee, IIT Roorkee, 2013.
7. Member Secretary, Post Graduate Programme Review Committee, 2013.

8. Chairman, Institute Academic Performance Evaluation Committee, IIT Roorkee, : February, 2013 – April 26, 2017.
9. Member, Intellectual Property Right Cell, IIT Roorkee, 2012 onwards.
10. Member, Department Administrative Committee (DAC), MIED, July 2014 – February, 2016.
11. Member, Departmental Academic Studies Committee (DASC), MIED, July 2012 – June 2014.
12. External Member, Board of Studies for Mechanical Engineering, Graphic Era Hill University, Dehradun, Uttarakhand.
13. Member, Departmental Research Committee (DRC), July 2010-June 2012.

Representation in National Committee

1. Principal Member in the Pneumatic Tools Sectional Committee, PGD08 of Production and General Engineering Department at the Bureau of Indian Standards, New Delhi.

Courses Organised

SI No.	Title of the Course	Sponsored By	Duration	Date
1.	Make in India : Dreams to Reality	QIP, IIT Roorkee	Two Weeks	Jan 04 -14, 2017
2.	Ishan Vikas	MHRD, Govt. of India	11 Days	Dec 5-Dec 15, 2016
3.	Ishan Vikas	MHRD, Govt. of India	12 Days	June 22-Jul 03, 2016
4.	Ishan Vikas	MHRD, Govt. of India	09 Days	June 11-19, 2015
5.	Applied Research: Design and Execution	QIP, IIT Roorkee	One Day	June 15-19, 2015
6.	Microwaves in Material Processing	QIP, IIT Roorkee	One Day	June 20, 2014
7.	Finish Machining: A State-of-the-Art	QIP, IIT Roorkee	One Week	September 02-09, 2013
8.	Ultrasonic machining approach to fabrication of microchannels (One-Day Workshop)	QIP, IIT Roorkee	One Day	March 13, 2013
9.	A Novel Approach to Processing of Green Composites	QIP, IIT Roorkee	One Day	March 09, 2013
10.	Manufacturing Excellence through Quality Assurance	QIP, IIT Roorkee	One Week	July 09 – 13, 2012
11.	Advances in Surface Finishing Technologies with Special	QIP, IIT Roorkee	One Day	February 19, 2012

	reference to Abrasive Flow Machining			
12.	Processing Challenges and Newer Manufacturing Methods	QIP, IIT Roorkee	One Week	June 25 – 29, 2011
13.	Advanced Materials and Manufacturing	AICTE, New Delhi	One Week	June 14– 18, 2010
14.	Composites: Design and Manufacturing	AICTE, New Delhi	One Week	July 7 – 11, 2008
15.	Controlling Abrasion and Erosion in Cement Plants	Self Sponsored under CEC, IIT Roorkee	Four days	May 7 – 11, 2008
16.	Combating Wear	Self Sponsored under CEC, IIT Roorkee	One week	May 29 – June 02, 2007
17.	Advanced Processing of Composite Materials	AICTE, New Delhi	One Week	July 24 – 28, 2006

Invited Talk

SI No.	Title of the Lecture	Programme	Year	Institution
1.	What is Advanced in Advance Manufacturing ? A case of Finish Machining through Ultrasonically Assisted Abrasive Flow Machining (UAAFMM)	Expert Lecture in the TEQIP Program	October 18, 2016	NIT, Kurukshetra
2.	Microwave Drilling : A Novel Micro-drilling Technique using Domestic Microwave Applicator	Key-Note Lecture in the National Seminar on “Advance Materials and Manufacturing Technologies”	March 30, 2016	Graphic Era Hill University, Dehradun
3.	Advanced Manufacturing with Special Reference to Hybrid Manufacturing	Key-Note Lecture in the National Workshop on : Recent Trends in Quality, Design and Production”	February 26, 2016.	Future Institute of Engineering and Technology, Bareilly, Uttar Pradesh.
4.	Intellectual Property Right and a few Patents of IIT Roorkee	Faculty Development Program	June 01, 2015	College of Engineering, Pune (CoEP)
5.	Applications of 2.45 GHz Microwaves in Micro-Drilling	Faculty Development Program	June 01, 2015	College of Engineering, Pune (CoEP)
6.	Processing Challenges of Ceramic Composites and a Newer Processing Route	Quality Improvement Program for Faculty	2015 (28.02.2015)	ITS Engineering College, Greater Noida
7.	Processing of metal-	Invited Talk,	2014	IIT Guwahati,

	based materials using 2.45 GHz microwaves with applications in joining and cladding	5th International and 26th AIMTDR -2014	(13.12.2014)	Guwahati
8.	Advanced Manufacturing with Special Reference to Hybrid Manufacturing	Expert Lecture	2014 (29.11.2014)	Graphic Era Hill University, Dehradun
9.	Microwaves in Material Processing	Quality Improvement Program for Faculty	2014 (31.07.2014)	GNDEC, Ludhiana
10.	Some aspects of Ultrasonic based Micromachining	Invited lecture under TEQIP	2014 (05.06.2014)	PEC University, Chandigarh.
11.	A Green approach to Processing of Green Composites	Quality Improvement Programme for Faculty	2014 (14.05.2014)	Noida Institute of Engineering and Technology (NIET), Greater Noida, India.
12.	Processing of metal-based materials using 2.45 GHz microwaves	International Colloquium Veda-Kolleg 2013	2013 (20.10.2013)	IIT Roorkee, Roorkee
13.	Processing of metal-based materials using 2.45 GHz microwaves with applications in joining and cladding	Quality Improvement Programme for Faculty	2013 (18.09.2013)	Indian Institute of Technology Kanpur (IITK), Kanpur.
14.	Micromachining: Fundamentals and developments in USM and ECDM based Techniques	Invited lecture under TEQIP	2013 (14.09.2013)	PEC University, Chandigarh.
15.	Micromachining : Concepts and Enabling Technologies with cases in Fabrication of Microchannels	Expert Lecture in the Faculty development Programme under TEQIP	2013 (06.06.2013)	PEC University, Chandigarh.
16.	Microwave Cladding: Challenges, Developments and Possibilities	Quality Improvement Programme for Faculty	2013 (08.01.2013)	Noida Institute of Engineering and Technology (NIET), Greater Noida, India.
17.	Micromachining: Developments and Possibilities	Faculty Development Programme sponsored by Punjab Technical University (PTU)	2013 (04.01.2013)	Amritsar College of Technology and Engineering, Amritsar.
18.	Advanced Manufacturing: Need, Growth and Applications	Expert Lecture Series in the Mechanical Engineering Department	2011 (11.03.2011)	Seth Jai Parkash Mukand Lal Institute of Engg. and Tech. (JMIT), Radaur-135133 (Jamuna Nagar) Haryana, India
19.	Electromagnetic Energy in Material Processing: An Approach to Green Manufacturing	Plenary Speaker in the National Conference at the Ganapati Institute of Technology & Management, 2010.	2010 (12.11.2010)	Ganapati Institute of Technology & Management, Bilaspur, Haryana, India.

20.	New Paradigms in Advanced Manufacturing	Invited Talk Series in the Mechanical Engineering Department	2010 (29.10.2010)	College of Engineering and Rural Technology, Meerut, India
21.	Microwave Processing of Materials – A New Paradigm in Processing of Advanced Materials	Key Speaker in AICTE sponsored National Seminar on Advanced Manufacturing Processes	2010 (21.02.2010)	Noida Institute of Engineering and Technology (NIET), Greater Noida, India.
22.	Microwave Processing of Materials – A New Paradigm in Processing of Engineering Materials	Special Talk Series in the Mechanical Engineering Society	2009 (21.09.2009)	SASTRA University, Thanjavur, TN, India.
23.	Microwave Processing of Materials – A New Paradigm in Processing of Engineering Materials	Community Development Programme	2008 (23.05.2008)	NIT Jalandhar, India.
24.	Designing Advance Engineering Materials – Ceramics and Ceramic Composites	Community Development Programme	2008 (23.05.2008)	NIT Jalandhar, India.

Special Seminar / Lectures Delivered

Sl No.	Title of the Lecture	Colloquium / Course	Year	Institution
1.	Knowing Yourself	Ishan Vikas Program	June 23, 2016	IIT Roorkee
2.	Express Yourself	Ishan Vikas Program	June 13, 2015	IIT Roorkee
3.	Research Publication	AICTE Sponsored Short Term Course	June 19, 2015	IIT Roorkee
4.	Resource Generation and Research Funding	AICTE Sponsored Short Term Course	June 17, 2015	IIT Roorkee
5.	Quality in Research	AICTE Sponsored Short Term Course	June 16, 2015	IIT Roorkee
6.	Research and Doing Research	AICTE Sponsored Short Term Course	June 16, 2015	IIT Roorkee
7.	Microwave Processing of Materials	AICTE Sponsored Short Term Course	July 08, 2014	IIT Roorkee
8.	Microwave Joining of Materials	One-Day QIP Workshop	June 20, 2014	IIT Roorkee, Roorkee
9.	Significance of Microwaves in Material Processing	One-Day QIP Workshop	June 20, 2014	IIT Roorkee, Roorkee
10.	Advanced Manufacturing with Special Reference to Hybrid Manufacturing	Expert Lecture	November 29, 2014	Graphic Era Hill University, Dehradun
11.	Processing of metal-based materials using 2.45 GHz microwaves	International Colloquium Veda-Kolleg 2013	October 20, 2013	IIT Roorkee, Roorkee
12.	Processing of metal-based materials using 2.45 GHz microwaves with applications in joining and cladding	Quality Improvement Programme for Faculty	September 18, 2013	Indian Institute of Technology Kanpur (IITK), Kanpur
13.	Micromachining: Fundamentals	Invited lecture under	September	PEC University,

	and developments in USM and ECDM based Techniques	TEQIP	09, 2013	Chandigarh
14.	A State-of-the-art in Finish Machining : Concepts and Technologies	AICTE Sponsored Short Term Course	September 02, 2013	IIT Roorkee
15.	Micromachining : Concepts and Enabling Technologies with cases in Fabrication of Microchannels	Faculty Development Programme under TEQIP	June 06, 2013	PEC University, Chandigarh
16.	Enabling Micromachining Technologies in Fabrication of Microchannels	QIP-sponsored Workshop	13 March, 2013	I.I.T. Roorkee
17.	Microwave Heating Approach to Processing of Green Composites	QIP-sponsored Workshop	09 March, 2013	I.I.T. Roorkee
18.	Manufacturing Excellence and Quality	AICTE Sponsored Short Term Course	09 July, 2012	I.I.T. Roorkee
19.	Advanced Material Removal Processes – I	AICTE Sponsored Short Term Course	13 July, 2012	I.I.T. Roorkee
20.	Advanced Material Removal Processes – II	AICTE Sponsored Short Term Course	13 July, 2012	I.I.T. Roorkee
21.	Developments in Surface Finishing Technologies	QIP-sponsored Workshop	Feb 19, 2012	I.I.T. Roorkee
22.	Microwave Processing of Metal-based Materials: A Sustainable Approach for Development of Metallic Joints and Wear Resistant Composite Cladding	IHM-Colloquium	June 30, 2011	Institute of Pulsed Power and Microwave Tech, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
23.	Developments in Materials Research and Emergence of Micromachining	AICTE Sponsored Short Term Course	14 th June, 2010	I.I.T. Roorkee
24.	Processing of Ceramic composites	AICTE Sponsored Short Term Course	15 th June, 2010	I.I.T. Roorkee
25.	Materials Processing using Electromagnetic Energy	AICTE Sponsored Short Term Course	18 th June, 2010	I.I.T. Roorkee
26.	Materials and Metallurgical Characterisation Techniques : An Overview	Continuing Education Programme	25 th May, 2010	I.I.T. Roorkee
27.	Quality in Design and Manufacturing	QIP Sponsored Short Term Course	2008	I.I.T. Roorkee
28.	Mechanical and metallurgical aspects in controlling abrasion and erosion wear	Continuing Education Programme	2008	I.I.T. Roorkee
29.	Plasma spraying and microwave glazing for performance enhancement	Continuing Education Programme	2008	I.I.T. Roorkee
30.	Characterisation of engineered surfaces	Continuing Education Program	2008	I.I.T. Roorkee
31.	Characterisation of engineered surfaces	Continuing Education Program	2007	I.I.T. Roorkee

32.	Plasma spray deposits in controlling erosion wear	Continuing Education Programme	2007	I.I.T. Roorkee
33.	An Overview of Composite Materials	QIP Sponsored Short Term Course	2006	I.I.T. Roorkee
34.	Processing of Ceramic Composites	QIP Sponsored Short Term Course	2006	I.I.T. Roorkee
35.	Ceramics and Ceramic Composites	QIP Sponsored Short Term Course	2004	I.I.T. Guwahati
36.	Tools for Intelligent Manufacturing	AICTE Sponsored Short Term Course	2001	Sri Venkateshwara College of Engineering, Chennai

Membership of Professional Bodies

1. Fellow, Institution of Engineers (India) (Membership No. F – 1214035).
2. Member, ASME, USA (Membership No. 100154747).
3. Member, Society of Manufacturing Engineers (SME), USA (Membership No.15716656).
4. Life Member, Indian Institution of Industrial Engineering, Mumbai (Membership No. LM9198 (99)).
5. Member, Global Science and Technology Forum, Australia.
6. Life Member, Materials Research Society of India, Bangalore, (Membership No. LMB 1621).
7. Life Member, Indian Society for Technical Education, New Delhi, (Membership No.LM25634).
8. e-Member, TMS, USA.

Courses Developed

[A]	National Programme on Technology Enhanced Learning (NPTEL)
1.	Apurbba Kumar Sharma and Pradeep Kumar, “Advanced Manufacturing Processes”, 2014.
[B]	National Mission Project on Pedagogic Development (Sponsored by the MHRD)
2.	Apurbba Kumar Sharma , Inderdeep Singh, Pradeep Kumar, “Principles of Industrial Engineering”, 2010.
[C]	For Post Graduate Students at IIT Roorkee (M. Tech./Pre-Ph.D.)
3.	Friction and Wear
[D]	For Undergraduate students (B.tech./ B.E.)
4.	Computer Numerical Control

DETAILS OF RESEARCH PUBLICATIONS

(Name: Dr. Apurbba Kumar Sharma)

List of Patents

	<u>Indian Patent</u>
1.	Apurbba Kumar Sharma and R. Krishnamurthy, Articles of Glazed Ceramic Composites on Metal Substrates and Method of Manufacture Thereof, Indian Patent No.199106 (563/MAS/2001), Year: 2006.
2.	A K Sharma , M S Srinath and Pradeep Kumar, A method of joining of bulk metallic materials by microwave hybrid heating, Indian Patent Application No. 1994/DEL/2009, Year: 2009.
3.	A K Sharma and Dheeraj Gupta, A method of developing metallic cladding/coating on metallic substrates by microwave irradiation, Indian Patent Application No. 527/DEL/2010, Year: 2010.
4.	A K Sharma , S Rajesha, G Venkatesh and Pradeep Kumar, A natural polymer abrasive media for the abrasive flow machining and a process for preparation thereof, Indian Patent Application no. 1349/Del/2011 (dt. 09.05.2011).
5.	Apurbba Kumar Sharma , Pradeep Kumar and Rajesha S, An improved ultrasonic abrasive flow machining and a device therefor, Indian Patent Application No. 3578/Del/2011 (Date: 09.12.2011).
6.	Apurbba Kumar Sharma , Shantanu Das, Nitin Kumar Lautre, Titto John George, Rajesh Kumar and Pradeep Kumar, A Method of Micro-drilling with Microwaves through Metallic Concentrator, (Application No.: 201621004759, February 10, 2016). (IIT Roorkee and DAE, Govt. of India
7.	Apurbba Kumar Sharma , Radha Raman Mishra, Mohit Choudhury and Saurabh Puri, A Device for in-situ microwave casting of metals and alloys. (Registered, 2016)
8.	Akshay Dvivedi, Manjot Singh Cheema and Apurbba Kumar Sharma , A Flexible Device for Multiple Ultrasonic Machining Operations. (Registered, 2016)

List of Publications

A.	Journal (Total = 99)
1.	Dheerendra Gamit, Radha Raman Mishra and Apurbba Kumar Sharma , “Joining of mild steel pipes using microwave hybrid heating at 2.45 GHz and joint characterisation”, <i>Journal of Manufacturing Processes</i> , 27, June (2017), pp. 158-168. (https://doi.org/10.1016/j.jmapro.2017.04.028).
2.	Sunny Zafar and Apurbba Kumar Sharma , “Microstructure and mechanical properties of microwave post processed Ni coating”. <i>Journal of Materials Engineering and Performance</i> , (2017), (DOI:10.1007/s11665-017-2540-y), (IMPACT FACTOR: 1.094 (2015)).
3.	Goud, M. and Apurbba Kumar Sharma , “On performance studies during micromachining of quartz glass using electrochemical discharge machining”, <i>Journal of Mechanical Science and Technology</i> , 31 (3) (2017), pp.1365-1372, (DOI 10.1007/s12206-017-0236-8). (IMPACT FACTOR: 0.761 (2015))
4.	Amit Bansal, Apurbba Kumar Sharma , Pradeep Kumar, “Galvanic corrosion behaviour of microwave welded and post-weld heat treated Inconel-718 joints”, <i>Journal of Materials Engineering and Performance</i> , April (2017), (DOI: 10.1007/s11665-017-2665-z)
5.	Radha Raman Mishra and Apurbba Kumar Sharma , “Structure-property correlation in Al-Zn-Mg alloy cast developed through in-situ microwave casting”, <i>Materials Science and Engineering A</i> , (DOI: http://dx.doi.org/10.1016/j.msea.2017.02.021), (2017). (IMPACT FACTOR: 2.647, 5-Year Impact Factor: 2.959)
6.	Radha Raman Mishra and Apurbba Kumar Sharma , “On melting characteristics of bulk Al-7039 alloy during in-situ microwave casting”, <i>Applied Thermal Engineering</i> , 111, (2017), pp. 670–685. (DOI: dx.doi.org/10.1016/j.applthermaleng.2016.09.122) (IMPACT FACTOR: 3.043, 5-Year Impact Factor: 3.269)
7.	Radha Raman Mishra and Apurbba Kumar Sharma , “On mechanism of in-situ microwave casting of aluminium alloy 7039 and cast microstructure”, <i>Materials and Design</i> , Vol. 112, (2016), pp. 97–106. (DOI:10.1016/j.matdes.2016.09.041) (IMPACT FACTOR: 3.997, 5-Year Impact Factor: 4.023)
8.	Sunny Zafar, Apurbba Kumar Sharma , “Microstructure and wear performance of heat treated Wc-12Co microwave clad”, <i>Vacuum</i> , (2016), vol. 291, pp.413–422 (DOI: 10.1016/j.vacuum.2016.06.021) (IMPACT FACTOR: 1.558, 5-Year Impact Factor: 1.615)
9.	Sunny Zafar and Apurbba Kumar Sharma , “Investigations on flexural performance and residual stresses in nanometric WC-12Co microwave clads”, <i>Surface & Coatings Technology</i> (2016), vol. 291, pp.413–422 (DOI: 10.1016/j.surfcoat.2016.03.009) (IMPACT FACTOR: 1.998, 5-Year Impact Factor: 2.374)

10.	Goud, M. and Apurbba Kumar Sharma , “A Three-dimensional Finite Element Simulation Approach to Analyse material Removal in Electrochemical Discharge Machining”, <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , (2016, pp.1-12, (DOI: 10.1177/0954406216636167).
11.	Sunny Zafar and Apurbba Kumar Sharma , “Structure-property correlation in nanostructured WC–12Co microwave clad”, <i>Applied Surface Science</i> , (2016), (DOI:10.1016/j.apsusc.2016.02.114). (IMPACT FACTOR: 2.71).
12.	Goud, M., Apurbba Kumar Sharma and Chandrashekhar Jawalkar, ‘A Review on Material Removal Mechanism in Electrochemical Discharge Machining (ECDM) and Possibilities to Enhance the Material Removal Rate’, <i>Precision Engineering</i> , 45 (2016), pp. 1-17. (doi.org/10.1016/j.precisioneng.2016.01.007) (IMPACT FACTOR: 1.517, 5-YEAR IMPACT FACTOR= 1.856)
13.	Radha Raman Mishra and Apurbba Kumar Sharma, ‘A Review of Research Trends in Microwave Processing of Metal Based Materials and Opportunities in Microwave Metal Casting’, <i>Critical Reviews in Solid State and Materials Sciences</i> , 41(3), (2016), pp.217-255. (DOI:doi.org/10.1080/10408436.2016.1142421). (IMPACT FACTOR: 6.450)
14.	M.S. Cheema, P.K. Singh, O. Tyagi, A. Dviwedi, A.K. Sharma , ‘Tool wear and form accuracy in ultrasonically machined microchannels’, <i>Measurement</i> , 81, pp.85–94, (2015), doi: http://dx.doi.org/10.1016/j.measurement.2015.12.005 . (IMPACT FACTOR: 1.484, 5-YEAR IMPACT FACTOR= 1.424)
15.	Sunny Zafar and Apurbba Kumar Sharma , ‘Abrasive and erosive wear behaviour of nanometric WC-12Co Microwave clad’, <i>Wear</i> , Vol.346-347, (2016), pp.29-45, http://dx.doi.org/10.1016/j.wear.2015.11.003 . (IMPACT FACTOR: 1.913, 5-YEAR IMPACT FACTOR= 2.109)
16.	Radha Raman Mishra and Apurbba Kumar Sharma , ‘Microwave-material interaction phenomena: heating mechanisms, challenges and opportunities in material processing’, <i>Composites Part A: Applied Science and Manufacturing</i> , Vol.81 (2016), pp.78-97. (doi:10.1016/j.compositesa.2015.10.035) (IMPACT FACTOR: 3.071, 5-YEAR IMPACT FACTOR= 4.045)
17.	Amit Bansal, Sunny Zafar and Apurbba Kumar Sharma , Microstructure and Abrasive Wear Performance of Ni-WC Composite Microwave Clad, <i>Journal of Materials Engineering and Performance</i> , (DOI: 10.1007/s11665-015-1657-0), 2015. (IMPACT FACTOR: 0.998)
18.	Sunny Zafar and Apurbba Kumar Sharma , Dry sliding wear performance of nanostructured WC–12Co deposited through microwave cladding, <i>Tribology International</i> , 91 (2015) 14–22, (DOI:10.1016/j.triboint.2015.06.023). (IMPACT FACTOR: 2.12).

19.	Nitin Kumar Lautre, Apurbba Kumar Sharma , Pradeep Kumar and Shantanu Das, "A simulation approach to material removal in microwave drilling of soda lime glass at 2.45 GHz", <i>Appl. Phys. A</i> (DOI 10.1007/s00339-015-9370-2), 2015. (IMPACT FACTOR: 1.704).
20.	Nitin Kumar Lautre, Apurbba Kumar Sharma , Shantanu Das and Pradeep Kumar, "A photoelasticity Approach for Characterisation of defects in microwave drilling of soda lime glass", <i>J. Mater. Process. Technol.</i> , 225, 2015, 151–161. (IMPACT FACTOR: 2.236).
21.	Nitin Kumar Lautre, Apurbba Kumar Sharma , Shantanu Das and Pradeep Kumar, "On crack control strategy in near field microwave drilling of soda lime glass using precursors", <i>J. Thermal Sci. Eng. Appl.</i> , 7(4), 2015, 1–15. (IMPACT FACTOR: 1.5), (DOI: 10.1115/1.4030478).
22.	Amit Bansal, Apurbba Kumar Sharma , Pradeep Kumar, Shantanu Das, "Structure–Property Correlations in Microwave Joining of Inconel 718", <i>Journal of Metals</i> , 76 (9), (2015), pp.2087-2098, (DOI: 10.1007/s11837-015-1523-4) (IMPACT FACTOR: 1.757)
23.	Amit Bansal, Apurbba Kumar Sharma , Pradeep Kumar, Shantanu Das, "On Microstructure and Strength Properties of Microwave Welded Inconel 718/ Stainless Steel (SS – 316L)", <i>Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications</i> , June, 2015, (DOI: 10.1177/1464420715589206)
24.	S., Zafar and Apurbba Kumar Sharma , "On Friction and Wear Behaviour of WC-12Co Microwave Clad", <i>Tribology Transactions</i> , 584-691. (DOI:10.1080/10402004.2014.996310)
25.	Apurbba Kumar Sharma , G Venkatesh, S Rajesha, P Kumar, Experimental investigations into ultrasonic-assisted abrasive flow machining (UAAFMM) process, <i>The International Journal of Advanced Manufacturing Technology</i> , 1-17, (DOI: 10.1007/s00170-015-7009-2).
26.	Gudipadu, Venkatesh, Apurbba Kumar Sharma , and Nitish Singh, "Simulation of media behaviour in vibration assisted abrasive flow machining", <i>Simulation Modelling Practice and Theory</i> , 51, 2015, 1-13 (http://dx.doi.org/10.1016/j.simpat.2014.10.009). (IMPACT FACTOR: 1.05)
27.	Manjot S. Cheema, Akshay Dvivedi, Apurbba K. Sharma , Tool wear studies in fabrication of microchannels in ultrasonic Micromachining", <i>Ultrasonics</i> , 57 2015, 57–64, (http://dx.doi.org/10.1016/j.ultras.2014.10.018). (FIVE YEAR IMPACT FACTOR: 1.948).
28.	Satnam Singh, Dheeraj Gupta, Vivek Jain, Apurbba K. Sharma , "Microwave Processing of Materials and Applications in Manufacturing Industries: A Review", <i>Materials and Manufacturing Processes</i> , 30(1), 2015, 1-29. (DOI:10.1080/10426914.2014.952028). (2013 IMPACT FACTOR: 1.486).
29.	Amit Bansal, Apurbba Kumar Sharma , Pradeep Kumar, Shantanu Das, "On

	microstructural and strength characterisation of microwave welded Inconel 718 joints at 2.45 GHz frequency”, <i>KOVOVÉ MATERIÁLY</i> , (Accepted). (IMPACT FACTOR: 0.546).
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