

: FACULTY DETAILED RESEARCH DATA:

Name of the Faculty: Dr. Ranjan Kumar

Designation: Associate Professor & HOD

Department: Mechanical Engineering

School: School of Engineering

Research Area: Solid mechanics, Life estimation and prognosis of machine components, Failure analysis, Vibration, Fatigue, Finite element simulation and analysis, Crack detection, Materials, Wind Turbine, Gas Turbine, Design thinking, Lithium batteries, Waste Management.

Details of research portfolio of faculty:

A. Researcher's ID details:

Google Scholar ID: X707xj0AAAAJ

Orchid ID: 0000-0002-2162-8476

Scopus ID: 57202998248

Vidwan ID: 161277

B. Publication details:

1. Conference proceedings/ Conference paper:

Sl. No.	Name of the Conference	Title of the paper	Month & Year of Publication	Author(s) Name	National/ International	doi number (if any)	ISSN/ISBN no.
1.	The 8th International Conference on Fracture Fatigue and Wear (FFW 2020, 26-27 August 2020	Mode shape based approach to identify the location of crack and the influence of crack on critical speed of gas turbine disc	2021	Ranjan Kumar, Vinayak Ranjan, Saikat Chatterjee, Sanjoy K. Ghoshal	International	https://doi.org/10.1007/978-981-15-9893-7_22	2195-4356
2.	International Conference on Recent Advances in Materials, Manufacturing	Experimental investigation for enhancing surface quality in 3D printing	2023	Mriganka Maity, Somnath Das, Ranjan Kumar	International	https://doi.org/10.1007/978-981-19-8517-1_14	2195-4356

	and Thermal Engineering	technology using non-planar layer method					
3.	International Conference on Mechanical & Materials Science Engineering: Innovation & Research, 5-6 July, 2018(ICMMS E-IR-2018)	Burst strength analysis of gas turbine disc based on deformation characteristics	2018	Ranjan Kumar, Vinayak Ranjan, Sanjoy K. Ghoshal, Bipin Kumar	International	https://doi.org/10.1063/1.5058253	0094-243X
4.	5th Nirma University International Conference on Engineering, 26-28 November, 2015(NUiCON E-2015)	Analytical and finite element analysis of dovetail joints in aeroengine disc	2015	Ranjan Kumar, Vinayak Ranjan, H. Nilesh Gupta	International	http://dx.doi.org/10.1201/b20013-71	9780367737108

2. Publications in SCI/Scopus indexed Journals:

Sl. No	Name of the Journal (mention SCI/Scopus)	Title of the paper	Month & Year of Publication	Author(s) Name (Highlight the corresponding and 1 st author in every article)	doi number	Issue No. & Volume No.	Page no.	ISSN of the journal
1.	Multidiscipline Modeling in Materials and Structures (SCI)	Simulation studies on combined effect of variable geometry, rotation and temperature gradient on critical speed of gas turbine disc	2023	Ranjan Kumar, Saikat Chatterjee, Vinayak Ranjan, Sanjoy K. Ghoshal	https://doi.org/10.1108/MMMS-07-2022-0139	Vol. 19 No. 2	277-291.	1573-6105
2.	Engineering Failure analysis (SCI)	Finite Element Modelling and Analysis of the Burst Margin of a Gas Turbine Disc Using an Area	2018	Ranjan Kumar, Vinayak Ranjan, Bipin Kumar, Sanjoy K Ghoshal	https://doi.org/10.1016/j.engfailanal.2017.12.014	Volume 90	425-433	1350-6307

		Weighted Mean Hoop Stress Method						
3.	Journal of vibration engineering & Technologies (SCI)	Acoustic Response of Thin Plate with Discrete Patches with Variable Thickness in Water Medium	2020	Bipin Kumar, Vinayak Ranjan, Ranjan Kumar	https://doi.org/10.1007/s42417-018-0046-z	Volume 8	27-34	2523-3920
4.	Journal of Molecular and Engineering Materials (ESCI)	Parametric Investigation on Laser Beam Welding of Aluminum Alloy 5052-H32 using Finite Element Analysis	2025	Samiran Samanta, , Ranjan Kumar et al.	https://doi.org/10.1142/S2251237325500078	Volume 1	2550007-1 to 2550007-14	2251-2373
5.	Journal of Vibroengineering (SCI)	Acoustic response of clamped isotropic plate with discrete patches and point masses having different thickness variation	2016	Bipin Kumar, Vinayak Ranjan, K.P. Ajit, Md Sikandar Azam, Ranjan Kumar	https://doi.org/10.21595/jve.2016.16620	Volume 18, Issue 4	2587-2600	1392-8716
6.	Journal of Plymer & Composites (ESCI)	Experimental Analysis of Cutting Forces Under Different Machining Parameters and Carbide inserts During Turning of Hardened AISI 4340 Steel	2023	Ranjan Kumar , Sumanta Jungli, Somnath Das, Arijit Mukherjee, Soumya Ghosh	https://journals.stmjournals.com/article/article=2023/view=95514/	Volume 10, Issue 1	S32-S43	2321–2810
7.	Journal of Mines, Metals and Fuels (SCOPUS)	Effect of Gap Ratio on flow influenced actions of two circular in side-by-side arrangement	2022	Sudip Chakraborty , Saikat Chatterjee, Ranjan Kumar	https://doi.org/10.18311/jmmf/2022/30662	70(3A)	15-20	0022-2755
8.	Journal of Systems Engineering and Electronics (SCOPUS)	Predicting Mosquito Repellent for Smart home system Utilizing Intelligent Machine Learning Model	2024	Dharmendra Kumar, Md Ershad , Ranjan Kumar, Sushma Kumari, Sandeep Gautam	DOI:20.14118.jsee.2024.V34I12.2048	Volume 34 Issue 12	402-415	1671-1793
9.	Journal of Systems Engineering and Electronics (SCOPUS)	Eco-friendly Ocean Power: Minimizing Environmental Impacts of Marine Energy Technologies	2024	Arnab Das , Ranjan Kumar, Bikash Panja, Md. Ershad	DOI:20.14118.jsee.2024.V34I12.2044	Volume 34 Issue 12	371-375	1671-1793
10.	Journal of Systems Engineering and Electronics (SCOPUS)	An Overview on Experimental Investigation on the Role of Hydrogen in Reducing Particulate Matter in Diesel Engines	2024	Sudipta Nath, Ranjan Kumar	DOI:20.14118.jsee.2024.V34I12.2041	Volume 34 Issue 12	351-354	1671-1793

11.	Journal of Systems Engineering and Electronics (SCOPUS)	Harnessing Wind Power: Challenges and Opportunities in Future Energy Systems	2024	Ranjan Kumar, Arnab Das	DOI:20.14118.jsee.2024.V34I12.2040	Volume 34 Issue 12	345-350	1671-1793
12.	Materials Today: Proceedings (SCOPUS)	Experimental study on FDM 3d printed object & position analysis using multicriteria decision-making process	2023	Joydip Kumar Mondal, Somnath Das, Ranjan Kumar, Mriganka Maity	https://doi.org/10.1016/j.matpr.2023.02.292	In Press	In Press	2214-7853
13.	Journal of Mines, Metals and Fuels (SCOPUS)	A Review on Compression-Ignition Engine Performance and Emissions with Hydrogen-Diesel Mixtures: Effect of Operational Parameters	2023	Sudipta Nath Ranjan Kumar, Shahanwaz Khan, Somnath Das and Vinayak Ranjan	http://dx.doi.org/10.18311/jmmf/2023/36095	71(11)	2056-2068	0022-2755
14.	Journal of Mines, Metals and Fuels (SCOPUS)	Experimental Investigation of Welding Parameters on Mild Steel Using Metal Active Gas Welding	2023	Ranjan Kumar, Sumana Biswas, Somnath Das and Md. Ershad	https://doi.org/10.18311/jmmf/2023/36094	71(11)	2078-2083	0022-2755
15.	Journal of Mines, Metals and Fuels (SCOPUS)	Identification of Different Features of the Reported Alternative Fuels using Exploratory Data Analysis (EDA)	2023	Sudip Chakraborty, Madhujit Deb, Ranjan Kumar and Sudipta Nath	http://dx.doi.org/10.18311/jmmf/2023/35864	71(10)	1657-1662	0022-2755
16.	Journal of Mines, Metals and Fuels (SCOPUS)	Optimization of Process Parameters of Gas Metal Arc Welding using Taguchi Method	2024	Ranjan Kumar, Bidyut Ghosh, Ravi Nigam, Arijit Mukherje and Somnath Das	http://dx.doi.org/10.18311/jmmf/2023/43787	71(12A)	6-14	0022-2755
17.	Journal of Mines, Metals and Fuels (SCOPUS)	Damage Localization in a Beam by Lifting Wavelet Scheme and Photographic based Experimentation	2024	Ravi Nigam, Ramnivas Kumar, Nisit Kumar Parida, Ranjan Kumar, Soumya Ghosh	https://doi.org/10.18311/jmmf/2023/43926	71(12A)	153-159	0022-2755
18.	Materials Today: Proceedings (SCOPUS)	Experimental investigation of cutting parameter during laser beam machining of aluminium alloy 7075	2024	Joydip Naskar, Ranjan Kumar, Somnath Das, N. Roy, Sayan Paul	http://dx.doi.org/10.1016/j.matpr.2023.03.194	In Press	In Press	2214-7853
19.	Journal of Mines, Metals and Fuels (SCOPUS)	A Review on the Approach Towards Cyber Physical Manufacturing System Architecture for Mining and Production Industries	2023	Atul, G. Divya Deepak and Ranjan Kumar	https://doi.org/10.18311/jmmf/2023/43064	71(12A)	21-29	0022-2755

20.	Journal of Mines, Metals and Fuels (SCOPUS)	Free Vibration Response of Functionally Graded Porous Metallic Plates Embedded with Piezoelectric Layers	2023	Prashant Kumar Choudhary, Ranjan Kumar and Subodh Kumar	http://dx.doi.org/10.18311/jmmf/2023/35867	71(10)	1645-1656	0022-2755
21.	Journal of Mines, Metals and Fuels (SCOPUS)	Comparative Study of Wear Behaviour of Heat Treated 304 Austenitic and 410 Martensitic Stainless Steel	2024	Arijit Mukherjee, Santosh Kumar, Ranjan Kumar, Sayan Paul, Soumak Bose, Suman Kumar Ghosh and Samrat Biswas	http://dx.doi.org/10.18311/jmmf/2023/36038	71(11)	2110-2115	0022-2755
22.	Journal of Mines, Metals and Fuels (SCOPUS)	TEM Analysis and Insights into the Physicomechanical Characteristics of CeLa-Substituted Bio-Glass Ceramics	2023	Md Ershad, Hrishikesh, Priyam Mondal and Ranjan Kumar	http://dx.doi.org/10.18311/jmmf/2023/45547	71(12B)	91-95	0022-2755
23.	Journal of Mines, Metals and Fuels (SCOPUS)	Examining the Performance Traits of a Rear-Supported V-Cone Flowmeter	2023	Hrishikesh, Md Ershad and Ranjan Kumar	http://dx.doi.org/10.18311/jmmf/2023/45541	71(12B)	139-142	0022-2755
24.	Journal of Mines, Metals and Fuels (SCOPUS)	Metallurgical Properties of CeLa Substituted Bio-Glass Ceramics	2023	Priyam Mondal, Md. Ershad and Ranjan Kumar	https://doi.org/10.18311/jmmf/2023/35871	71(10)	1639-1644	0022-2755
25.	Journal of Mines, Metals and Fuels (SCOPUS)	CoO Substituted Borate 1393B3 Glass Scaffold with Enhanced Metallurgical Performance	2023	Md Ershad, Ranjan Kumar, Neeraj Gupta, Arijit Mukherjee, Soumya Ghosh and Apurba Mandal	http://dx.doi.org/10.18311/jmmf/2023/43176	71(12A)	15-20	0022-2755
26.	Journal of Mines, Metals and Fuels (SCOPUS)	A Review of the Effects of Injection Strategy and Combustion Chamber Geometry Modification and a Single - Cylinder Diesel Engine,	2023	Sudipta Nath, Ranjan Kumar, Shahanwaz Khan and Somnath Das	http://dx.doi.org/10.18311/jmmf/2023/45540	71(12B)	131-138	0022-2755
27.	Journal of Mechanical Engineering Advancements	A Reduced Kinetic Model Approach to Quantifying Injector Spray Angle Influence on NG-Diesel Combustion	2023	Sudipta Nath, Ranjan Kumar, Shahanwaz Khan and Somnath Das	https://www.swamivivekanandauniversity.ac.in/jmea/img/pdf/Shahanwaz-Khan.pdf	1(2)	36-44	3048-5673

3. Book chapter:

Sl. No.	Title of the book Chapter	Publishers	Author(s) Name (Highlight the corresponding and 1 st author in every article)	Year	ISBN No.	doi no. (if applicable)
1.	Experimental Investigation for Enhancing Surface Quality in 3D Printing Process Using Non-planar Layer Method	Springer	Dr. Ranjan Kumar	2023	978-981-19-8516-4	http://dx.doi.org/10.1007/978-981-19-8517-1_14
2.	Mechanical Behavior of Bioglass Materials for Bone Implantation. Mechanical Engineering in Biomedical Applications	Wiley	Dr. Ranjan Kumar	2024	978-1-394-17452-2	http://dx.doi.org/10.1002/9781394175109.ch9
3.	Influence of Process Parameters on Mechanical Properties in Weld Cladding	CRC Press, Taylor & Francis	Dr. Ranjan Kumar	2025	9781032980362	https://doi.org/10.1201/9781003596745
4.	Solar Energy Utilization in Electric Vehicles: A Process	CRC Press, Taylor & Francis	Dr. Ranjan Kumar	2025	9781032980362	https://doi.org/10.1201/9781003596745
5.	Analysis of MRR and Surface Roughness Modeling in Stainless Steel Using Response Surface Methodology	CRC Press, Taylor & Francis	Dr. Ranjan Kumar	2025	9781032980362	https://doi.org/10.1201/9781003596745
6.	An ideal technique for solving linear and nonlinear Goursat problems	CRC Press, Taylor & Francis	Dr. Ranjan Kumar	2025	9781032980362	https://doi.org/10.1201/9781003596745
7.	Optimization of Hydrogen Injection Timing for Improved Efficiency in Dual-Fuel Diesel Engines	Bright Sky Publications	Dr. Ranjan Kumar	2024	978-93-6233-525-8	https://doi.org/10.62906/bs.book.210
8.	Mechanical Performance and Biocompatibility of Hydroxyapatite-Gadolinium Oxide (HA-Gd ₂ O ₃) Composites for Bone Regeneration Applications	Bright Sky Publications	Dr. Ranjan Kumar	2024	978-93-6233-525-8	https://doi.org/10.62906/bs.book.210
9.	Optimization of Process Parameters of Gas Metal Arc Welding Using Taguchi Method	Integrated Publications	Dr. Ranjan Kumar	2024	978-93-5834-191-1	https://doi.org/10.62778/int.book.478

10.	A Review on the Approach towards Cyber Physical Manufacturing Systems (CPMS) Architecture	Integrated Publications	Dr. Ranjan Kumar	2024	978-93-5834-191-1	https://doi.org/10.62778/int.book.478
11.	Experimental Investigation of Welding Parameters on Mild Steel Using Metal Active Gas Welding	Integrated Publications	Dr. Ranjan Kumar	2024	978-93-5834-191-1	https://doi.org/10.62778/int.book.478
12.	Performance and Emission Characteristics of a Hydrogen-Diesel Dual Fuel Engine under Variable Load Conditions	Integrated Publications	Dr. Ranjan Kumar	2024	978-93-5834-191-1	https://doi.org/10.62778/int.book.478
13.	Enhancing Mechanical Properties and Biocompatibility of Hydroxyapatite Composites through Gd ₂ O ₃ Doping: A Study for Biomedical Implants	Integrated Publications	Dr. Ranjan Kumar	2024	978-93-5834-191-1	https://doi.org/10.62778/int.book.478
14.	Impact of Hydrogen Substitution on Combustion Characteristics and NO _x Emissions in Dual Fuel Diesel Engines	Bright Sky Publications	Dr. Ranjan Kumar	2024	978-93-6233-705-4	https://doi.org/10.62906/bs.book.209
15.	Performance and Emission Characteristics of Compression Ignition Engines Fueled with Hydrogen-Diesel Mixtures	S Sharda Global Research Publications	Dr. Ranjan Kumar	2025	978-81-975037-1-9	https://doi.org/10.62823/SSGRP/2025/9788197503719
16.	Influence of Rare-Earth Oxides on the Mechanical and Tribological Properties of Functionally Graded Materials for Biomedical Applications	S Sharda Global Research Publications	Dr. Ranjan Kumar	2025	978-81-975037-1-9	https://doi.org/10.62823/SSGRP/2025/9788197503719
17.	Fluid Power in the Era of Sustainability: Advances in Ecofriendly Hydraulic and Pneumatic Systems	MGM Publishing House	Dr. Ranjan Kumar	2025	978-81-981913-8-0	https://doi.org/10.62823/MGM/2025/9788198191380
18.	Hydroelectric Energy in India: A Review	MGM Publishing House	Dr. Ranjan Kumar	2025	978-93-49468-95-5	https://doi.org/10.62823/MGM/2025/9789349468955

19.	Chromium Substituted 1393 Bioglass: Synthesis, Characterization, and Potential Biomedical Applications	MGM Publishing House	Dr. Ranjan Kumar	2025	978-93-49468-95-5	https://doi.org/10.62823/MGM/2025/9789349468955
20.	Green Fluid Power: Innovations in Renewable Energy Integration and Efficiency	MGM Publishing House	Dr. Ranjan Kumar	2025	978-93-49468-95-5	https://doi.org/10.62823/MGM/2025/9789349468955
21.	Harnessing Wind Energy: Emerging Challenges and Opportunities in Sustainable Power	Reyansh Global Research Foundation	Dr. Ranjan Kumar	2025	978-81-974962-9-5	https://doi.org/10.62823/RGRF/9788197496295
22.	Hydrogen's Role in Reducing Diesel Engine Particulate Matter: Experimental Insights	Reyansh Global Research Foundation	Dr. Ranjan Kumar	2025	978-81-974962-9-5	https://doi.org/10.62823/RGRF/9788197496295
23.	Harnessing Wind Power: Challenges and Opportunities in Future Energy Systems	Open Books Publisher	Dr. Ranjan Kumar	2025	978-81-952903-2-1	https://doi.org/10.37591/FIR
24.	3D Printing and Its Impacts on Sustainable Manufacturing Practices	Open Books Publisher	Dr. Ranjan Kumar	2025	978-81-952903-9-0	https://doi.org/10.37591/AMMR
25.	Impact of Hydrogen Substitution on Combustion Characteristics and NO _x Emissions in Dual Fuel Diesel Engines	Open Books Publisher	Dr. Ranjan Kumar	2025	978-81-952903-9-0	https://doi.org/10.37591/AMMR
26.	Synthesis of Gd ₂ O ₃ -Replaced 1393 Bioglass to Enhanced Mechanical Properties and Biocompatibility	Open Books Publisher	Dr. Ranjan Kumar	2025	978-81-952903-9-0	https://doi.org/10.37591/AMMR
27.	Experimental Investigation of Dual-Fuel Hydrogen-Diesel Combustion in Compression Ignition Engines	INSPIRA	Dr. Ranjan Kumar	2025	978-81-974427-1-1	https://doi.org/10.62823/Inspira/2025/9788197442711

4. Text/Reference book published from reputed national/international publishers:

Sl. No.	Title of the Text/Reference book	Publishers	Author(s) Name (Highlight the corresponding and 1 st author in every article)	Year	ISBN No.	doi no. (if applicable)
1.	Recent Advancements in Computational Intelligence and Design Engineering (SCOPUS)	CRC Press, Taylor & Francis	Dac-Nhuong Le, Abhishek Dhar, Ranjan Kumar , Saravanan Muthaiyah, Saurabh Adhikari	2025	9781003596745	https://doi.org/10.1201/9781003596745
2.	Mechanical Engineering in Biomedical Applications: Bio-Materials, Implant Design, Bio-3D Printing, Computational, Tissue & Biofluid Mechanics (SCOPUS)	Wiley Publication	Jay Prakash Srivastava, Drazan Kozak, Vinayak Ranjan, Pankaj Kumar, Ranjan Kumar , Shubham Tayal	2024	9781394174522	https://www.scribnerpublishing.com/cart/title.php?id=882
3.	Innovations Across Disciplines: Advancements in Engineering, Technology, and Sustainability	Inspira, Jaipur	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9788197442759	https://doi.org/10.62823/Inspira/2025/9788197442759
4.	Progress in Materials Manufacturing, and Energy Systems	Inspira, Jaipur	Dr. Ranjan Kumar & Dr. Arnab Das	2025	9788197442711	https://doi.org/10.62823/Inspira/2025/9788197442711
5.	Multidisciplinary Perspectives in Mechanical and Applied Sciences	S sharda global research publications	Dr. Ranjan Kumar & Dr. Arnab Das	2025	9788197503719	https://doi.org/10.62823/SSGRP/2025/9788197503719
6.	Innovations Across Disciplines: A Collection of Contemporary Research	S sharda global research publications	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9788197503726	https://doi.org/10.62823/SSGRP/2025/9788197503726
7.	Advanced Paradigms in Transdisciplinary Research	MGM publishing house	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9789349468955	https://doi.org/10.62823/MGM/2025/9789349468955
8.	Engineering For Sustainability Research, Innovation, and Impact	Reyansh global research foundation	Dr. Ranjan Kumar & Dr. Arnab Das	2025	9788197496295	https://doi.org/10.62823/RGRF/9788197496295
9.	Dynamic Approaches to Multidimensional Challenges	MGM publishing house	Dr. Ranjan Kumar	2025	9788198191380	https://doi.org/10.62823/MGM/2025/9788198191380
10.	Advances in Sustainable Technologies: Emerging Trends And Applications	Reyansh global research foundation	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9788197496226	https://doi.org/10.62823/RGRF/2025/9788197496226

11.	Insights in Applied Science and Engineering	Ideal Publication	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9788198818706	https://doi.org/10.71431/978-81-988187-0-6
12.	Advanced Methods for Multidisciplinary Research	Open Book Publisher	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9788195290390	https://doi.org/10.37591/AMMR
13.	Frontiers in Interdisciplinary Research	Open Book Publisher	Dr. Ranjan Kumar & Dr. Ashes Banerjee	2025	9788195290321	https://doi.org/10.37591/FIR
14.	Innovative Solutions And Sustainable Development: Bridging Technology and Science for a Greener Future	Scientific Publisher	Dr. Ranjan Kumar Mr. Abhishek Dhar Dr. Ashes Banerjee Dr. Arnab Das	2025	9789366747392	https://doi.org/10.5281/zenodo.14676942
15.	Advances in Computational Solutions Integrative Approaches and Applications	Integrated Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Ashes Banerjee and Arunima Mahapatra	2024	9789358346251	https://doi.org/10.62778/int.book.450
16.	Scientific Frontiers: Sustainable Practices and Technologies	AkiNik Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Ashes Banerjee and Dr. Subhabrata Mondal	2024	9789361354298	https://doi.org/10.22271/ed.book.2938
17.	Synergy in Science and Engineering: An Integrative Approach	AkiNik Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Ashes Banerjee and Arunima Mahapatra	2024	9789361350580	https://doi.org/10.22271/ed.book.2863
18.	Fusion of Minds Multidisciplinary Research in Emerging Technologies	AkiNik Publications	Dr. Ranjan Kumar, Abhishek Dhar, Sourav Saha and Dr. Ashes Banerjee	2024	9789361359620	https://doi.org/10.22271/ed.book.2972
19.	Innovative Approaches in Engineering Research	Bright Sky Publications	Dr. Ranjan Kumar, Abhishek Dhar and Sourav Saha	2024	9789362337610	https://doi.org/10.62906/bs.book.211
20.	Computational Techniques in Modern Engineering Research	Bright Sky Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Subhabrata Mondal and Sourav Saha	2024	9789362335258	https://doi.org/10.62906/bs.book.210
21.	Research Methodologies in Engineering and Applied Science	Bright Sky Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Ashes Banerjee and Dr. Arnab Das	2024	9789362337054	https://doi.org/10.62906/bs.book.209
22.	Interdisciplinary Research in Science and Engineering	Integrated Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Ashes Banerjee and Dr. Kazi Hasibur Rahman	2024	9789358341911	https://doi.org/10.62778/int.book.478
23.	Multidisciplinary Insights in Modern Engineering	AkiNik Publications	Dr. Ranjan Kumar, Abhishek Dhar, Dr. Ashes Banerjee and Dr. Arnab Das	2024	978-93-6135-956-9	https://doi.org/10.22271/ed.book.3064

24.	Digital Design and Engineering in the Age of AI	Bright Sky Publications	Ranjan Kumar, Arnab Das and Sourav Saha	2025	978-93-6233-668-2	https://doi.org/10.62906/bs.book.404
25.	Interdisciplinary Research Horizons in Science and Technology	AkiNik Publications	Ranjan Kumar and Arnab Das	2025	978-93-6135-225-6	https://doi.org/10.22271/ed.book.3288

5. Project granted:

Sl. No	Sponsoring Agency	Name of the project	Duration		Amount in Lakhs	PI/ CO-PI
			Starting Month & Year	Ending month & Year		

6. Consultancy Project Grant:

Sl No.	Project title	Funding Agency	Duration	Completed (yes/no)	Sanctioned amount (in Rs.)	PI and CO-PI (if any)
1	Development and Fabrication of Industrial Parts through CNC Milling	Efficient CNC	1 Year	Yes	1 lakhs	Dr. Ranjan Kumar, Mr. Arijit Mukherjee

7. Patent/IPR granted:

Sl. No.	Name of the patent	Name of the applicant	Name of the inventor	Date of File	Date of Publication	Whether Granted (yes/no); If yes, Date of Grant	Application No.
1.	A Method and A System for Estimating Burst Margin of Rotating Disc	Ranjan Kumar	Ranjan Kumar, Sanjoy K. Ghoshal, Vinayak Ranjan, Bipin Kumar	18/12/2018	19/06/2020	Yes, 20/12/2024	201831048014
2.	Hand Operated Oil Pump	Ranjan Kumar, Sujit Kumar, Hemant Kumar	Ranjan Kumar, Sujit Kumar, Hemant Kumar	08/03/2025	20/06/2025	Yes, 20/06/2025	450784-001
3.	Folding Mobile Stand With Charging Management	Swami Vivekananda University	Swami Vivekananda University Dr. Ranjan Kumar Dr. Arnab Das Mr. Saurabh Adhikari	17/01/2025	18/03/2025	Yes, 18/03/2025	444654-001
4.	Multipurpose Knife	Dr. Ranjan Kumar Dr. Arnab Das Mr. Saurabh Adhikari	Dr. Ashes Banerjee, Dr. Ranjan Kumar Dr. Arnab Das Mr. Saurabh Adhikari	24/01/2025	01/05/2025	Yes, 01/05/2025	445535-001
5.	Deep learning based portable aquaponics tunnel for fish fungal Infections	Swami Vivekananda University Dr. Ranjan Kumar, Mr. Saurabh Adhikari	Swami Vivekananda University Dr. Ranjan Kumar, Mr. Saurabh Adhikari	18/02/2025	25/02/2025	Yes, 25/02/2025	642606

6.	Self-Balancing Two-Wheeler Vehicle	Dr. Ranjan Kumar, Dr. Bhupal Kumar, Dr. Sujit Kumar	Dr. Ranjan Kumar, Dr. Bhupal Kumar, Dr. Sujit Kumar	08/05/2025	16/05/2025	No	202531044595
7.	Hybrid Solar Powered Car	Swami Vivekananda University	Dr. Ranjan Kumar Dr. Arnab Das Mr. Saurabh Adhikari	21/01/2025	31/01/2025	No	202531004915
8.	System for monitoring and classifying mosquito repellents	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar, Dharmendra Kumar, Mr. Saurabh Adhikari	21/01/2025	31/01/2025	No	202531004916
9.	Automatic Food Serving Machine	Swami Vivekananda University	Dr. Ranjan Kumar, Dr. Md Ershad, Mr. Saurabh Adhikari	21/01/2025	31/01/2025	No	202531004917
10.	Modular Biodegradable Solar-Powered Water Purification System	Swami Vivekananda University	Dr. Ranjan Kumar Dr. Arnab Das Mr. Saurabh Adhikari	21/01/2025	31/01/2025	No	202531004918
11.	Bioglass Composition for Bone Replacement	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar Mr. Priyam Mondal	25/02/2025	21/03/2025	No	202531016530
12.	Bioactive Glass Composition for Bone Healing	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar, , Mr. Saurabh Adhikari	25/02/2025	21/03/2025	No	202531016529

13.	Piston bowl for a dual-fuel hydrogen-diesel engine	Swami Vivekananda University	Dr. Ranjan Kumar Mr. Sudipta Nath, Mr. Saurabh Adhikari	12/03/2025	28/03/2025	No	202531022103
14.	Solar-Powered Smart Cane with Obstacle Detection and AI-Based Assistive Features	Swami Vivekananda University	Dr. Samrat Biswas, Dr. Ranjan Kumar	25/04/2025	02/05/2025	No	202531040073
15.	A solar-powered go-kart	Swami Vivekananda University	Mr. Suman Kumar Ghosh, Dr. Ranjan Kumar	26/04/2025	02/05/2025	No	202531040467
16.	Smart Shredder for E-Waste Plastic Processing	Swami Vivekananda University	Dr. Ranjan Kumar, Dr. Ashes Banerjee, Dr. Arnab Das Mr. Saurabh Adhikari	28/04/2025	02/05/2025	No	202531040692
17.	Solar powered Automatic Tobacco / non tobacco products Vending Machine	Swami Vivekananda University	Mr. Soumya Ghosh, Dr. Ranjan Kumar	26/03/2024	05/04/2024	NO	202431024111
18.	Intelligent autonomous wheel-driven sprayer system for precision Agriculture	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	28/03/2023	07/04/2023	NO	202431028477

19.	Transformation of dairy by-product into sustainable biodegradable material	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	07/04/2024	19/04/2024	NO	202431028476
20.	Solar Air Heater	Swami Vivekananda University	Mr. Soumya Ghosh, Dr. Ranjan Kumar	07/04/2024	19/04/2024	NO	202431028487
21.	Pin-ring electrode based atmospheric pressure plasma jet Generating system. (Intellectual Property India)	Dr. G. Divya Deepak, Dr. Gajanan Anne, Dr. Atul, Dr. Ranjan Kumar	Dr. G. Divya Deepak, Dr. Gajanan Anne, Dr. Atul, Dr. Ranjan Kumar	20/01/202023	24/02/2023	NO	202341004118
22.	Fabrication and design of the 360-degree rotating vehicle (Intellectual Property India)	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	28/03/2023	07/04/2023	NO	202331022706
23.	Plastic-Based Composite for Concrete Production	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	17/08/2023	08/09/2023	NO	202331055315
24.	Fabrication and design of the Solar Air Cooler	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	25/08/2023	07/04/2023	NO	202331057258

25.	Automatic Electromagnetic Brake Using Ferromagnetic Material Scrap	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	26/08/2023	13/10/2023	NO	202331057359
26.	Mini Belt grinder	Swami Vivekananda University	Mr. Suman Kumar Ghosh, Dr. Ranjan Kumar	16/08/2023	08/09/2023	NO	202331054863
27.	Solar Powered water Pump	Swami Vivekananda University	Dr. Ranjan Kumar, Dr. Samrat Biswas	20/03/2023	31/03/2023	NO	202331018705
28.	Solar-powered beard trimmer	Swami Vivekananda University	Dr. Ranjan Kumar, Dr. Samrat Biswas	20/03/2023	31/03/2023	NO	202331018706
29.	Sensor-based desalinization and hydroponic technologies to improve agricultural productivity of resource-scarce coastal saline areas	Swami Vivekananda University	Dr. Md Ershad, Dr. Ranjan Kumar	28/03/2023	07/04/2023	NO	202331022652
30.	Smart solar grass cutter	Swami Vivekananda University	Mr. Sayan Paul, Dr. Ranjan Kumar	07/07/2022	29/07/2022	NO	202331038992

31.	Hydraulic ram pump system for water lifting in hilly region	Swami Vivekananda University	Mr. Soumya Ghosh, Dr. Ranjan Kumar	21/06/2022	29/07/2022	NO	202231035645
32.	Atmospheric pressure plasma jet generating system (Intellectual Property India)	Dr. G. Divya Deepak, Dr. Atul, Dr. Ranjan Kumar	Dr. G. Divya Deepak, Dr. Atul, Dr. Ranjan Kumar	01/01/2022	14/01/2022	NO	202241000018
33.	Human motion based energy harvesting device (Intellectual Property India)	Dr. Atul, Dr. G. Divya Deepak, Dr. Ranjan Kumar	Dr. Atul, Dr. G. Divya Deepak, Dr. Ranjan Kumar	25/02/2022	04/03/2022	NO	202241010368
34.	Plasma filter for automobile exhaust (Intellectual Property India)	Dr. G. Divya Deepak, Dr. Atul, Dr. Ranjan Kumar	Dr. G. Divya Deepak, Dr. Atul, Dr. Ranjan Kumar	28/03/2022	08/04/2022	NO	202241018002
35.	A smart material fabrication method for handling deflection suppression of plates (Intellectual Property India)	Dr. Atul, Dr. G. Divya Deepak, Dr. Ranjan Kumar	Dr. Atul, Dr. G. Divya Deepak, Dr. Ranjan Kumar	29/12/2021	04/02/2022	NO	20214106164