STANDARD TEMPLATE OF FACULTY PROFILE FOR UPLOADING OF UNIVERSITY WEBSITE

Title	DR.	Ravi		Butola		
Designation		Assistant Professor				
School /Dept. Name		USAR/ Automation &Robotics/Mechanical Engineering				
Address:		Assistant Professor Automation &Robotics/Mechanical Engineering USAR, East Campus, Surajmal Vihar, GGSIPU Delhi-110092				
Phone No.		Office	Room No-501, Fifth Floor, USAR, East Campus, Surajmal Vihar, GGSIPU, Delhi-110092			
		Residence	Flat No-T4A/2, GF, Type-IV, GGSIP University, East Campus, Surajmal Vihar-110092			
		Mobile	8800711887			
Email		ravi.usar@ipu.ac.in		ravibutola33855@gmail.com		
Web Page (if any)		Dr. Ravi Butola - Google Scholar , https://scholar.google.co.in/citations?user=KAk9Ga0AAAAJ&hl=en (47) Feed | LinkedIn				
Subjects Taught		Production Technology, Manufacturing Processes, Engineering Graphics-I&II.				
Areas of Interest/ Specialization		Composites Materials, Advanced Manufacturing Processes, Surface Modification				
Experience (in years)		Total	11years			
		Industry	NIL			
		Teaching	11 years			
		Research				
Educational Qualifications		UG	G.B. Pant University of Agriculture &Technology Pantnagar (Uttarakhand)			
		PG	Delhi Technological University (Formerly DCE), Delhi			
		Doctorate	Delhi Technological University (Formerly DCE), Delhi			
		Any other – Diploma in IPR				
Research Publications in Journals (last 5 years)		**1.** Chandra Pratap, Prakash Chandra, **Ravi Butola**, Anurag Shukla. Fabrication and characterization of AA6063/B_4C metal matrix surface nanocomposite using Friction stir processing, *ECS J of Solid State Sci. and Techno*, Vol, 11(3), pp. 033010, 2022. https://doi.org/10.1149/2162-8777/ac5c81 **(SCIE) (IF-2.483)** **2.** Muhsin Ahmad Khan, **Ravi Butola***, and Nirman Gupta. A review of nanoparticle reinforced surface composites processed by friction stir processing, *Journal of Adhesion Science and Technology.*, Vol 37, pp. 1-37, 2022.				

https://doi.org/10.1080/01694243.2022.2037054 **(SCI) (IF-2.431)**

3. Ravi Butola*, Deepak Pandit, Chandra Pratap, Prakash Chandra. Two decades of friction stir processing –a review of advancements in composite fabrication, *Journal of Adhesion Science and Technology*., Vol 36(8), pp. 795-832, 2022. https://doi.org/10.1080/01694243.2021.1938835 **(SCI) (IF-2.431)**

4. Ravi Butola*, Prakash Chandra, Kartikeya Bector and Ranganath M Singari. Fabrication and multi-objective optimization of friction stir processed aluminium based surface composites using Taguchi approach. *Surface Topography: Metrology and Properties*, Vol. 9, (2) 025044, 2021. https://doi.org/10.1088/2051-672X/ac0ba3 **(SCIE) (IF-2.185)**

5. Ravi Butola, Ranganath M. Singari and Qasim Murtaza. Mechanical and wear behaviour of Friction stir processed surface composite through Self-Assembled Monolayer Technique. *Surface Topography: Metrology and Properties* Vol. 8 (4), 2020, pp. 045007. https://doi.org/10.1088/2051-672X/abbcb8 **(SCIE) (IF-2.185)**

6. Ravi Butola, Qasim Murtaza and Ranganath M. Singari. Formation of Self-Assembled Monolayer and Characterization of AA7075-T6/B_4C Nano-ceramic surface composite using Friction Stir Processing. *Surface Topography: Metrology and Properties,* Vol. 8(2), 2020, pp. 025030. https://doi.org/10.1088/2051-672X/ab96db (**SCIE) (IF-2.185)**

7. Ravi Butola, Qasim Murtaza and Ranganath M. Singari. An experimental and simulation validation of residual stress measurement for manufacturing of friction stir processing tool. *Indian Journal of Engineering & Materials Sciences.* Vol. 27(4), 2020, pp. 826-836, **(SCI) (IF-0.613)**

8. Lakshay Tyagi, **Ravi Butola***, Avinash Kumar Jha. Mechanical and tribological properties of AA7075-T6 metal matrix composite reinforced with ceramic particles and aloevera ash via Friction stir processing. *Material Research Express*, Vol.7 (6), 2020, pp. 066526. https://doi.org/10.1088/2053-1591/ab9c5e **(SCIE) (IF-2.025)**

9. Ravi Butola*, Lakshay Tyagi, Ranganath M. Singari, Qasim Murtaza, Harish Kumar, Dhiraj Nayak. Mechanical and wear performance of Al/SiC surface composite prepared through friction stir processing, *Material Research Express*, Vol.8 (1), 2021, pp. 016520. https://doi.org/10.1088/2053-1591/abd89d (**SCIE) (IF-2.025)**

10. Ravi Butola, Ranganath M. Singari Qasim Murtaza and Lakshay Tyagi. Comparison of response surface methodology with artificial neural network for prediction of the tensile properties of friction stir-processed surface composites. *Proc IMechE Part E: Journal of Process Mechanical Engg.*, Vol. 236(1) (2022) pp.126-137 https://doi.org/10.1177/09544089211036833 (**SCI) (IF-1.822)**

11. Kartikeya Bector, **Ravi Butola***, Ranganath M. Singari, S L Bhandarkar, Kamal Pathak. Prediction of hardness in friction stir processing by artificial neural networks. *Journal of Engg. Research*, Special issue, 2021, pp. 170-180. https://doi.org/10.36909/jer.EMSME.13851 (**SCIE) (IF-1.325)**

12. Ravi Butola*, Ravi Kumar, Naman Choudhary, Mohammad Zubair, Shashi Prakash Dwivedi. Optimisation of FSP process parameters of surface composites using GRA and Taguchi approach. *Journal of Engg. Research*, Special issue, 2021, pp. 1-12. https://doi.org/10.36909/jer.ICCEMME.15689 (**SCIE) (IF-1.325)**

13. Shashi Prakash Dwivedi, Praveen Pachauri, Manish Maurya, Ambuj Saxena, **Ravi Butola**, Rohit Sahu, and Shubham Sharma,. Alumina catalyst waste utilization for aluminum-based composites using the friction stir process. *Materials Testing*, vol. 64(4), 2022, pp. 533-540. https://doi.org/10.1515/mt-2021-2074 **(SCI) (IF-2.528)**

14. Ravi Butola, Priyansh Singh. Review-Parametric Study and Various Strategies of Aluminium Metal Matrix Composites Fabricated by Friction Sir Processing. *ECS J of Solid State Sci. and Techno*. Vol. 11(9), 2022, pp. 093001. https://doi.org/10.1149/2162-8777/ac8bf4 **(SCIE) (IF-2.483)**

15. Anubhav Coyal, N. Yuvaraj, **Ravi Butola***, Lakshay Tyagi. An experimental analysis of tensile, hardness and wear properties of aluminium metal matrix composite through stir casting process. *SN Applied Sciences*, 2020, 2:892. https://doi.org/10.1007/s42452-020-2657-8 (**SCOPUS), (ESCI)**

	16. Ravi Butola*, Susheem Kanwar, Lakshay Tyagi, Ranganath M. Singari, Mohit Tyagi. Optimizing the machining variables in CNC turning of aluminum based hybrid metal matrix composites. *SN Applied Sciences* (2020) 2:1356. https://doi.org/10.1007/s42452-020-3155-8 (**SCOPUS)**, **(ESCI)** **17. Ravi Butola***, Ranganath M.S, Murtaza, Q. Fabrication and optimization of AA7075 matrix surface composites using Taguchi technique via friction stir processing (FSP). *Engineering Research Express.* Vol. 1(2), (2019) pp. 025015. https://doi.org/10.1088/2631-8695/ab4b00 **(SCOPUS)** **18.** Susheem Kanwar, **Ravi Butola***, Ranganath M. Singari. Comparison of Genetic Algorithm and Taguchi technique for surface roughness of natural fiber reinforced polymer composites. *SAE International Journal of Materials and Manufacturing*. 14(2):141-151, 2021. https://doi.org/10.4271/05-14-02-0011 **(SCOPUS), (ESCI)**. **19.** Lakshay Tyagi, **Ravi Butola***, Luckshaya Kem, Ranganath M Singari. Comparative analysis of response surface methodology and artificial neural network on the wear properties of surface composite fabricated by friction stir processing. *Journal of Bio- and Tribo-Corrosion*. Vol. 7, 36, 2021. https://doi.org/10.1007/s40735-020-00469-1 **(SCOPUS)** **20. Ravi Butola**, Ravi Pratap Singh, Naman Choudhary, K.K.S. Mer, Jitendra Bhaskar, Ranganath M. Singari. Fabrication of FSW Tool Pins through Turning of H13 Tool Steel: A Comparative Analysis for Residual Stresses. Journal of Advanced Manufacturing Systems. Vol. 21 (1), PP. 1-16, 2022. https://doi.org/10.1142/S0219686722500135 (**SCOPUS), (ESCI)** **21. Ravi Butola**, N. Yuvaraj, Ravi Pratap Singh, Lakshay Tyagi, Faim Khan. Evaluation of Microhardness and Wear properties of Al 6063 composite reinforced with Yttrium Oxide using Stir casting process. World Journal of Engineering. Vol. 19(3), pp. 361-367, 2022. https://doi.org/10.1108/WJE-12-2020-0645 (**SCOPUS), (ESCI)** **22.** Mridul Gupta, Mushin Ahmad Khan, **Ravi Butola** & Ranganath M. Singari. Advances in applications of Non-Destructive Testing (NDT): A review, *Advances in Materials and Processing Technologies*, 2021. https://doi:10.1080/2374068X.2021.1909332 (**SCOPUS), (ESCI)** **23.** Shourya Sahdev, Himanshu Kumar, **Ravi Butola***, Ranganath M. Singari. Evaluating the effect of process parameters on FSP of AL5083 alloy using ANSYS. Annales de Chimie - Science des Matériaux. Vol. 45, No. 2, pp. 113-120, 2021. https://doi.org/10.18280/acsm.450203 (**SCOPUS), (ESCI)** **24.** Kartikeya Bector, Mrinal Singh, Divya Pandey, **Ravi Butola***, Ranganath M. Singari. Study of residual stresses in multi-pass friction stir processed surface composites. Advances in Materials and Processing Technologies, Vol. 7, pp. 1-15, 2021. https://doi.org/10.1080/2374068X.2021.1939983 (**SCOPUS), (ESCI)** **25**. Shanti Lal Meena, **Ravi Butola,** Muhsin Ahmad Khan, R.S Walia & Qasim Murtaza. Influence of process parameters in synergic MIG welding of 304L stainless steel using response surface methodology. Advances in Materials and Processing Technologies, Vol. 8, pp. 1-10, 2022. **(SCOPUS), (ESCI)** **26**. Pranav Salhan, Rupanshu Singh, Prasoon Jain, **Ravi Butola**. Prediction of heat generation and microstructure of AA7075 friction stir welding using ANN: Effect of process parameters. *Manufacturing Letters*, Vol. 32, pp. 5-9, 2022. https://doi.org/10.1016/j.mfglet.2022.01.004 (**SCOPUS), (ESCI)** **27**. **Ravi Butola***, Mohit Tyagi, Anshul Chaudhary, Pankaj Raj Meena, Kartikeya Bector, Shantilal Meena. Optimisation of aluminium-based hybrid surface composites produced via friction stir processing using Taguchi technique. *International Journal of Sustainable Materials and Structural Systems*, Vol 5(4), 2021, pp. 357-368. https://doi.org/10.1504/IJSMSS.2021.121272 **28. Ravi Butola**, Chander Pratap, Anurag Shukla, Ravinder Walia. Effect on the mechanical properties of aluminum-based hybrid metal matrix composite using stir casting method. *Mater Sci Forum*. Vol. 969, pp. 253–259, 2019. https://doi.org/10.4028/www.scientifc.net/msf.969.253 Scientific. Net **(SCOPUS)** **29. Ravi Butola,** Kapil Dev Pandey, Qasim Murtaza, R.S Walia, Mohit Tyagi, K. Srinivas, Arun K. Chaudhary**.** *Proc IMechE Part E: Journal of Nanomaterials,*

	Nanoengineering and Nanosystems. Experimental analysis and optimization of process parameters using response surface methodology of surface nanocomposites fabricated by friction stir processing. **Accepted** (**SCOPUS), (ESCI)**
Papers Published in Conference Proceedings(last 5 years)	**1. Ravi Butola**, Qasim Murtaza and Ranganath M. Singari. CNC Turning and Simulation of Residual Stress Measurement on H13 Tool Steel. 2nd International Conference on Computational Methods in Manufacturing (ICCMM -2019) at IIT Guwahati, 8-9 March 2019. **2. Ravi Butola**, Ranganath M. Singari, Qasim Murtaza. A Review on Surface Modification of Aluminium Alloy using Friction Stir Processing. International Conference on Advanced Production and Industrial engineering (ICAPIE 2018), Delhi Technological University, 5-6, October, 2018. **3. Ravi Butola**, Lakshay Tyagi, Lakshay Kem, Ranganath M. Singari, Qasim Murtaza. Mechanical and Wear Properties of Aluminium Alloy Composites: A Review. 6th International Conference on Production and Industrial Engineering, (CPIE-2019) during June 08-10th, 2019 at Dr. B R Ambedkar National Institute of Technology, Jalandhar Punjab. **4.** Anubhav Coyal, Narayan Yuvaraj **Ravi Butola**, Kapil Dev Pandey, Tusharjeet Singh Kalra. Microstructure and Mechanical Properties of Synthesized Aluminium Composite using Stir Casting Process. 4th International Conference on Advanced Production and Industrial Engineering (ICAPIE' 19) is being organized by CAPIER DTU during 20-21 December, 2019 at Delhi Institute of Tool Engineering (DITE), Okhla, Delhi, India. **5.** Kartikeya Bector, Aranyak Tripathi, Divya Pandey, **Ravi Butola**, and Ranganath M. Singari. A Review on the Fabrication of Surface Composites via Friction Stir Processing and Its Modeling Using ANN. 4th International Conference on Advanced Production and Industrial Engineering (ICAPIE 2019) at DITE Delhi, 20-21 December 2019. **6.** Kartikeya Bector, **Ravi Butola** and Ranganath M.S. Effect of the processing parameters on the microhardness of Friction stir processed surface composite and its prediction using Artificial neural network. 1st International Conference on Energy, Materials Sciences and Mechanical Engineering (EMSME - 2020) at NIT Delhi, 31st October-1st November 2020. **7. Ravi Butola**, Naman Choudhary, Ravi Kumar, Pradeep Kumar Mouria, Mohammad Zubair, Ranganath M. Singari. Measurement of residual stress on H13 tool steel during machining for fabrication of FSW/FSP tool pins. 1st International Conference on Energy, Materials Sciences and Mechanical Engineering (EMSME - 2020) at NIT Delhi, 31st October-1st November 2020. **8.** Faim Khan, N. Yuvaraj, **Ravi Butola,** Lakshay Tyagi and Luckshaya Kem. Analysis of tribological properties of Aluminium metal matrix composite fabricated by Stir casting method. International Conference on Industrial and Manufacturing Systems (CIMS-2020) held on October 09-11, 2020 at Dr. B R Ambedkar National Institute of Technology, Jalandhar, Punjab, India. **9. Ravi Butola**, Anshul Chaudhary, Pankaj Raj Meena, and Shanti Lal Meena. Optimization of Aluminium based metal matrix Surface composite using Taguchi technique via Friction stir processing. International Conference on Industrial and Manufacturing Systems (CIMS-2020) held on October 09-11, 2020 at Dr. B R Ambedkar National Institute of Technology, Jalandhar, Punjab, India. **10.** Ravi Kumar, **Ravi Butola**, Naman Choudhary, Mohammad Zubair. Optimization of FSP Process Parameters of surface composites using GRA and Taguchi Approach. 3rd International Conference on Computational & Experimental Methods in Mechanical Engineering (ICCEMME-2021)" organized by Department of Mechanical Engineering G. L. Bajaj Institute of Technology & Management, Greater Noida, India, which will be held on Feb 11-13, 2021 **11**. R.S Walia, Ravi Pratap Singh, **Ravi Butola**, Mohit Tyagi. Wear Behaviour on a Pin-on-Disc Setup for Thermal Spray of Coating using ABAQUS: Study and Computational Analysis. 2nd International Conference on Industrial and Manufacturing Systems

<table>
<tr><td></td><td colspan="4">(CIMS-2021) to be held during Nov 11-13, 2021 as a Joint venture of Punjab Engineering College (PEC), Chandigarh and Dr. B R Ambedkar National Institute of Technology (NIT), Jalandhar.</td></tr>
<tr><td>Books Authored/ BookVolume Chapters</td><td colspan="4">1. Ravi Butola, Qasim Murtaza, Ranganath M. Singari. CNC Turning and Simulation of Residual Stress Measurement on H13 Tool Steel. Advances in Computational Methods in Manufacturing, Lecture Notes on Multidisciplinary Industrial Engineering. Springer (Eds: R. Narayanan, S. Joshi, U. Dixit), Singapore, 2019, pp.337-348. https://doi.org/10.1007/978-981-32-9072-329 (SCOPUS)
2. Ravi Butola, Tyagi L., Kem L., Ranganath M.S., Murtaza Q. (2020) Mechanical and Wear Properties of Aluminium Alloy Composites: A Review. In: Sharma V., Dixit U., Sørby K., Bhardwaj A., Trehan R.(eds) Manufacturing Engineering. Lecture Notes on Multidisciplinary Industrial Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-15-4619-8_28 (SCOPUS)
3. Kartikeya Bector, Aranyak Tripathi, Divya Pandey, Ravi Butola, Ranganath M Singari. (2021). A Review on the Fabrication of Surface Composites via Friction Stir Processing and Its Modeling Using ANN. In R. M. Singari, K. Mathiyazhagan, & H. Kumar (Eds.), Advances in Manufacturing and Industrial Engineering. (pp. 1–11). Lecture Notes in Mechanical Engineering, Springer, Singapore. https://doi.org/10.1007/978-981-15-8542-5_1 (SCOPUS)
4. Sourav Kumar Gupta, Siddharth Chauhan, Shivam, Ravi Butola. (2021) Development and Properties of Aluminium-Based Metal Matrix Composite: A Review. In: Kumar A., Pal A., Kachhwaha S.S., Jain P.K. (eds) Recent Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-15-9678-0_82 (SCOPUS)
5. Faim Khan, N. Yuvaraj, Lakshay Tyagi, Luckshaya Kem, and Ravi Butola. (2022) Analysis of Tribological Properties of Aluminum Metal Matrix Composite Fabricated by Stir Casting Method. Editors: R., K Garg. R, P, Singh. R, Trehan. R, Singh. Modern Manufacturing Systems: Trends and Developments. CRC Press Taylor& Francis Group ISBN: 9781774910443 (SCOPUS)</td></tr>
<tr><td rowspan="3">No. of Conferences</td><td rowspan="2">National</td><td colspan="2">Attended</td><td>Organized</td></tr>
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<tr><td>International</td><td colspan="2">12</td><td>4</td></tr>
<tr><td rowspan="3">Research Guidance</td><td rowspan="2">Awarded</td><td>PG</td><td>M. Phil</td><td>Doctorate</td></tr>
<tr><td>7</td><td>NIL</td><td></td></tr>
<tr><td>Undergoing</td><td></td><td>NIL</td><td></td></tr>
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<tr><td>Undergoing</td><td colspan="3">NIL</td></tr>
<tr><td>Awards & Distinctions</td><td colspan="4">Got Research Excellence Award in year of 2020, 2021 and 2022 given by Delhi Technological University.</td></tr>
</table>

Administrative Assignments Handled	Warden, Boys Hostel, GGSIPU EDC.
Association with Professional Bodies	
Any other Achievements	