



***Modern Education Society's
Wadia College of Engineering,
Pune.***

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“A ++” Grade*

***Department of Mechanical
Engineering***

***“MechVision”
Technical Magazine***

***Academic Year
2023-24***

Dear Readers,

It is with great pleasure that I welcome you to this edition of **MechVision**, the official technical magazine of the **Department of Mechanical Engineering**. This platform continues to serve as a vibrant canvas for the creativity, curiosity, and technical acumen of our students, faculty, and alumni.

Mechanical Engineering, long regarded as the backbone of innovation, is evolving rapidly. From robotics and additive manufacturing to sustainable energy systems and computational mechanics, the field is expanding in both depth and scope. This magazine aims to reflect that dynamism by showcasing the groundbreaking work and fresh ideas emerging from our department.

In this issue, you will find a blend of research articles, project highlights, technical case studies, and opinion pieces. We feature cutting-edge developments such as the integration of AI in predictive maintenance, experimental fluid dynamics studies, and the use of simulation tools in thermal system design. Our student contributors have also explored real-world applications through industry internships and interdisciplinary projects.

Beyond technical content, MechVision also celebrates the human side of engineering—interviews with inspiring alumni, faculty achievements, student milestones, and department initiatives that foster innovation and collaboration.

As we continue to push boundaries in mechanical engineering, this magazine stands as a testament to our department's commitment to excellence, learning, and progress. I extend my sincere thanks to all contributors, reviewers, and the editorial team whose dedication has brought this publication to life.

We hope this edition informs, inspires, and invites you to be part of the ever-evolving story of mechanical engineering.

Warm regards,

Dr.V.N.Raibhole

Head

Department of Mechanical Engineering

Dr.S.H.Gawande

Assoc.Professor

Department of Mechanical Engineering

Mr.Sushant S.Jadhav

Asst.Professor

Department of Mechanical Engineering

Mr.P.V.Bute

Asst..Professor

Department of Mechanical Engineering

M. E. S. College of Engineering, Pune. Department of Mechanical Engineering Number of papers published per teacher in the Journals notified on UGC website during the last five years											
Academic Year	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number			Citations	
							Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other		
Dr. Vikas Chougule											
2023-24	Design and Analysis of Automated Solar Panel Cleaning System	AMIT R. PATIL, V. N. CHOUGULE	Mechanical	Current World Environment An International Research Journal of Environmental Science	2023	ISSN 0973-4929	http://www.cwejournal.org/	http://dx.doi.org/10.12944/CWE.18.3.11	CARE Journal, Google Sch	2	
2023-24	Experimental and Finite Element Analysis of 3D Printed Parts for Characterisation of Their Mechanical Behaviour	V. N. Chougule P. N. Jumble, B. B. Ahuja, A. V. Mulay	Mechanical	International Journal of INTELLIGENT SYSTEMS AND APPLICATIONS IN ENGINEERING	2023	ISSN 2147-6799	https://ijsae.org/index.php/IJSAE	https://ijsae.org/index.php/IJSAE/article/view/6490/5327	Google Scholar		
Dr. Vajjanath Raibhole											
2023-24	Heat transfer analysis of rhombus shaped pin fins array of heat sink for improved heat transfer rate.	Ram Deshmukh, VN Raibhole	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0127834	Scopus		
2023-24	An extensive review on effect of use of different vortex generators on thermal performance in various applications	Jitendra Chaubey, Harshad Deshpande, Sameer Bhosale, Vajjanath Raibhole	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0157599	Scopus	1	
2023-24	Influence of placement of ribs in solar air heater on it's overall thermal performance-A comprehensive review	Harshad Deshpande, Manjusha Barge, Vajjanath Raibhole, Sameer Bhosale	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0171929	Scopus		
2023-24	Investigation of a natural convection heat transfer enhancement of a different shaped pin fin heat sink for different vertical fin spacing	Ram Deshmukh, VN Raibhole	Mechanical	Heat and Mass Transfer	2023	Print ISSN 0947-7411	https://link.springer.com/journal/231	https://doi.org/10.1007/s00231-023-03395-3	WoS (SCIE), Scopus	7	
Dr. SH Gawande											
2023-24	Study on wear analysis of substitute automotive brake pad materials	Shravan H Gawande, AS Banait, K Balashowry	Mechanical	Australian Journal of Mechanical Engineering	2023	Print ISSN: 1448-4846	https://www.tandfonline.com/loi/tmec20	https://doi.org/10.1080/14484846.2020.1831133	WoS (ESCI), Scopus	16	
2023-24	Metal matrix nanocomposites: A brief overview	Prashli U Sarode, Jhantu G Rauli, Aditya S Gakwad, Shravan Gawande	Mechanical	Nanoscience & Nanotechnology-Asia	2023	ISSN: 2210-6812	https://www.benthamdirect.com/content/journals/nanoasi	https://doi.org/10.2174/2210681213668230301152349	Scopus	4	
2023-24	Study the effect of geometric parameters on heat transfer in metal expansion bellows using Taguchi method	Sunil Wankhede, Shravan H Gawande	Mechanical	Recent Advances in Material, Manufacturing, and Machine Learning	2023	eBook ISBN 9781003370628	https://www.taylorfrancis.com/		Google Scholar	1	
2023-24	Half Width & Phasing Method for reduction of Instabilities of Mesh Stiffness Variation in Two-Stage Gear	SH Gawande, VV Palande	Mechanical	Australian Journal of Mechanical Engineering	2023	Print ISSN: 1448-4846	https://www.tandfonline.com/loi/tmec20	https://doi.org/10.1080/14484846.2021.1914889	WoS (ESCI), Scopus		
2023-24	Design and analysis aspect of metal expansion bellows: A review	SD Wankhede, SH Gawande	Mechanical	Forces in Mechanics	2023	Online ISSN: 2666-3597	https://www.sciencedirect.com/journal/forces-in-mechanics	https://doi.org/10.1016/j.frmec.2023.100244	WoS (ESCI), Scopus	13	
Dr. Anirban C Mitra											
2023-24	Object following robot based on AI/ML	Anand Kamble, Anirban C Mitra, Aniket Tathe, Suyash Kumbharkar, Atharva Bhandare	Mechanical	Materials Today Proceeding	2023	ISSN: 2214-7853	https://www.sciencedirect.com/journal/materials-today-proceedings	https://doi.org/10.1016/j.matpr.2022.09.577	Scopus	1	
2023-24	Performance enhancement of PID assisted semi-active suspension system and optimization using Taguchi method and grey relational analysis	Shital V Poti, Anirban C Mitra, Rahul N Yerrawar	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0157733	Scopus		
2023-24	Custom Data Augmentation for low resource ASR using Bark and Retrieval-Based Voice Conversion	Anand Kamble, Aniket Tathe, Suyash Kumbharkar, Atharva Bhandare, Anirban C Mitra	Mechanical	arXiv preprint arXiv:2311.14836	2023	ISSN 2331-8422 (Online)	https://arxiv.org/abs/cs.CL/2023-11?skip=1300&show=100	https://doi.org/10.48550/arXiv.2311.14836	Google Scholar	1	
2023-24	End to end Hindi to English speech conversion using Bark, mBART and a finetuned XLSR_Wav2Vec2	Aniket Tathe, Anand Kamble, Suyash Kumbharkar, Atharva Bhandare, Anirban C Mitra	Mechanical	arXiv preprint arXiv:2311.14836	2023	ISSN 2331-8422 (Online)	https://arxiv.org/abs/cs.CL/2023-11?skip=1300&show=100	https://doi.org/10.48550/arXiv.2401.06181	Google Scholar	1	
2023-24	Transcription and translation of videos using finetuned XLSR_Wav2Vec2 on custom dataset and mBART	Aniket Tathe, Anand Kamble, Suyash Kumbharkar, Atharva Bhandare, Anirban C Mitra	Mechanical	arXiv preprint arXiv:2311.14836	2023	ISSN 2331-8422 (Online)	https://arxiv.org/abs/cs.CL/2023-11?skip=1300&show=100	https://doi.org/10.48550/arXiv.2403.00212	Google Scholar	2	
2023-24	Real-time road testing and analysis of adjustable passive suspension system with variable spring stiffness	CD Kulkarni, PP Sait, AV Kalaskar, AC Mitra, SH Gawande	Mechanical	JMST Advances	2023	Print ISSN 2524-7905	https://link.springer.com/journal/42791	https://doi.org/10.1007/s42791-024-00082-0	Google Scholar	1	
2023-24	Experimental investigation of the effect of welding parameters on material properties of SS 316L stainless steel welded joints	Rameshwar V Chavan, Anirban C Mitra	Mechanical	International Journal of Steel Structures	2023	Print ISSN 1598-2351	https://link.springer.com/journal/13296	https://doi.org/10.1007/s13296-024-00874-z	WoS (SCIE), Scopus	1	
Dr. A. R. Patil											
2023-24	Modelling erosive wear of nano-filler added carbon fibre reinforced polymer composite by artificial neural networks	SDS Abhiram Kalvakolanu, Sai Krishna Prashanth Kolluru, Uma Maheshwera Reddy Paturi, AR Patil	Mechanical	Materials Today: Proceedings	2023	ISSN: 2214-7853	https://www.sciencedirect.com/journal/materials-today-proceedings	https://doi.org/10.1016/j.matpr.2023.01.203	Scopus	6	
2023-24	Preface: 10th National Conference on Recent Developments in Mechanical Engineering (RDME 2022)	Amit R Patil, Bhushan D Nandre, Vikas N Chougule	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp		Scopus		
2023-24	Efficient Power Generation in Electric Vehicles: A Chain Gear Ratio Approach	R Soujanya, Bansilal Baiwa, BS Sagar, Sameer Sharma, Amit R Patil	Mechanical	2023 IEEE 2nd International Conference on Industrial Electronics: Developments & Applications (ICIDEA)	2023	ISBN (Online): 979-8-3503-8197-9	https://www.proceedings.com/content/071071142/webtoc.pdf	https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=102952	Scopus		
Prof. S. D. Wankhede											
2023-24	Study the effect of geometric parameters on heat transfer in metal expansion bellows using Taguchi method	Sunil Wankhede, Shravan H Gawande	Mechanical	Recent Advances in Material, Manufacturing, and Machine Learning	2023	eBook ISBN 9781003370628	https://www.taylorfrancis.com/		Google Scholar	1	
2023-24	Design and analysis aspect of metal expansion bellows: A review	SD Wankhede, SH Gawande	Mechanical	Forces in Mechanics	2023	Online ISSN: 2666-3597	https://www.sciencedirect.com/journal/forces-in-mechanics	https://doi.org/10.1016/j.frmec.2023.100244	WoS (ESCI), Scopus	13	
Dr. Rahul N. Yerrawar											
2023-24	Numerical modelling of semi-automatic washing machine motion model	SG Nilawar, RN Yerrawar	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0168216	Scopus		
2023-24	Performance enhancement of PID assisted semi-active suspension system and optimization using Taguchi method and grey relational analysis	Shital V Poti, Anirban C Mitra, Rahul N Yerrawar	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0157733	Scopus		
Prof. H. S. Salave											
2023-24	Numerical analysis of a single cylinder stationary diesel engine using enriched biogas	HS Salave, AD Desai	Mechanical	Materials Today: Proceedings	2023	ISSN: 2214-7853	https://www.sciencedirect.com/journal/materials-today-proceedings	https://doi.org/10.1016/j.matpr.2022.09.455	Scopus	2	
Dr. Bhushan Nandre											
2023-24	Investigation on the Effect of Contact Area and Stress Concentration on Slurry Erosion Wear of AA6063 using Hertz contact theory and Numerical Technique.	Bhushan D Nandre, Girish R Desale	Mechanical	Tribology in Industry	2023	ISSN 0354-8996	https://www.tribology.rs/	https://doi.org/10.24874/ti.1433.01.23.05	Scopus	1	
2023-24	Preface: 10th National Conference on Recent Developments in Mechanical Engineering (RDME 2022)	Amit R Patil, Bhushan D Nandre, Vikas N Chougule	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp		Scopus		
Prof. Sushant. S. Jadhav											
2022-23	Synthesis of anisotropic morphing fingers for robotic hands	Akash Lawand, Suhas S Jadhav, Sushant S Jadhav, Vaishali J Sonawane	Mechanical	AIP Conference Proceedings	2023	Print ISSN 0094-243X	https://pubs.aip.org/aip/acp	https://doi.org/10.1063/5.0157122	Scopus		
Dr. Sachin R Kandharkar											
2023-24	Development of distributed compliant mechanism for two distinct applications: displacement amplifying and object holding mechanism	Sachin R Kandharkar, Sujit S Pardeshi, Rohan Soman, Abhishek D Patange, Wieslaw Ostachowicz	Mechanical	Engineering Research Express	2023	ISSN: 2631-8695	https://iopscience.iop.org/journal/2631-8695	https://doi.org/10.1088/2631-8695/acd520	Scopus	1	