

Dr Sohail Malik

Chairman and Associate Professor MME, PAFIAST - Haripur

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A dynamic personality equipped with Highest professional qualification and professional experience of more than 16 years from Industry and Academia covering diverse fields of Engineering including but not limited to

1. Artificial Intelligence in Engineering (Computer Vision, Machine Learning)
2. Finite Element Analysis (Structural Analysis, Ultrasonics, 3d printing, Multibody Dynamics)
3. Structural Health Monitoring
4. Condition Health Monitoring
5. Energy Management
6. Renewable Energy Resources (Energy harvesting from natural vibration and plants, photovoltaic cells)
7. Project Engineering (Configuration management, Production Planning and Control, Project Management)
8. UAV Applications

Dr Sohail Malik being a reformer, researcher, entrepreneur, and consultant along with his connections with academia as a regular faculty member for the last 7 years is equipped with additional prior Industrial experience of about 5 years. He has been part of developing 10 innovative technology product/service lines out of which 3 are successful startups now. Dr Sohail Malik has been constantly in contact with Industry and Academia for various training sessions and workshops to share the knowledge gained through experience through research, academic attachments, and industrial consultancy. He has also trained faculty of his university for online teaching with innovative andragogy skills. His research activities, fundings, publications and product outcomes along with nurturing his graduate students and PhD scholars are generally in the fields of Structural Health and Condition Monitoring; Finite Element Analysis; Energy Management and Energy Harvesting; Composite Materials and Additive Manufacturing; and UAV applications.

He continuously updates according to the recent trends and his current research interests are extended to applications of Block Chain, Machine Learning and Computer Vision. Holding a dynamic personality with continuous involvement in sports activities, Dr. Sohail Malik is pioneer of Urban Air Mobility nationally. His aim is to build the first flying car of Pakistan. Currently he is working as Associate Professor and Chairman Mechanical and Manufacturing Engineering Department at Pak Austria Fachhochschule: Institute of Applied Sciences and Technology, Haripur.

1. Journal Publications

Sr No	JOURNAL PUBLICATIONS
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1	<p>Multifunctional rotational active valve for flow control in paper-based microfluidic devices</p> <p>Gohar Hussain, Ali Turab Jafry, SohailMalik, Syed Farhad Shah, Sumair Nishat & Fazli RabbiAwan (2022)</p> <p>https://doi.org/10.1016/j.snb.2022.133142</p>
2	<p>Multimodal piezoelectric wind energy harvester for aerospace applications</p> <p>Sheeraz, M. A., Malik, M. S., Rahman, K., Elahi, H., Khurram, M., Eugeni, M., & Gaudenzi, P. (2022).</p> <p>International Journal of Energy Research, 46(10), 13698-13710.</p> <p>https://doi.org/10.1002/er.8089</p>
3	<p>Thermoelectric investigation of low-cost modular night-time electricity generation. Heat and Mass Transfer, 1-11.</p> <p>Khan, S., Cheema, T. A., Hassan, M., Malik, M. S., & Park, C. W. (2022).</p> <p>https://doi.org/10.1007/s00231-022-03190-6</p>
4	<p>Improved mechanical and water absorption properties of epoxy-bamboo long natural fibres composites by eco-friendly Na₂CO₃ treatment. Plastics, Rubber and Composites, 1-14.</p> <p>Abdul Karim, M. R., Tahir, D., Khan, K. I., Hussain, A., Haq, E. U., & Malik, M. S. (2022)</p> <p>https://doi.org/10.1080/14658011.2022.2030152</p>
5	<p>Artificial neural network (ANN)-based optimization of a numerically analyzed m-shaped piezoelectric energy harvester. Functional Materials Letters, 14(08), 2151046</p> <p>Ali, A., Sheeraz, M. A., Bibi, S., Khan, M. Z., Malik, M. S., & Ali, W. (2021).</p> <p>https://doi.org/10.1142/S1793604721510462</p>
6	<p>Pixel frequency based railroad surface flaw detection using active infrared thermography for Structural Health Monitoring. Case Studies in Thermal Engineering, 27, 101234. (2021).</p> <p>Ramzan, B., Malik, M. S., Martarelli, M., Ali, H. T., Yusuf, M., & Ahmad, S. M.</p> <p>https://doi.org/10.1016/j.csite.2021.101234</p>

7	<p>Strain Wave Analysis in Carbon-Fiber-Reinforced Composites subjected to Drop Weight Impact Test using ANSYS®.</p> <p>Andleeb, Z., Malik, S., Khawaja, H., Antonsen, S., Hassan, T., Hussain, G., & Moatamedi, M. (2021) <i>The International Journal of Multiphysics</i>, 15(3), 275-290.</p> <p>https://doi.org/10.21152/1750-9548.15.3.275</p>
8	<p>Numerical Assessment and Parametric Optimization of a Piezoelectric Wind Energy Harvester for IoT-Based Applications</p> <p>Muhammad Abdullah Sheeraz, Muhammad Sohail Malik, Khalid Rehman, Hassan Elahi, Zubair Butt, Iftikhar Ahmad, Marco Eugeni, Paolo Gaudenzi</p> <p><i>Energies</i> 14 (9), 2498</p> <p>https://doi.org/10.3390/en14092498</p>
9	<p>Thermoelastic Investigation of Carbon-Fiber-Reinforced Composites Using a Drop-Weight Impact Test</p> <p>Zahra Andleeb, Sohail Malik, Hassan Abbas Khawaja, Anders Samuelsen Nordli, Ståle Antonsen, Ghulam Hussain, Mojtaba Moatamedi</p> <p><i>Applied Sciences</i>, 11(1), 207, 2021</p> <p>https://doi.org/10.3390/app11010207</p>
10	<p>Numerical Investigation of Particle Tracking to Achieve High Impact Velocity in Cold Spray</p> <p>Muhammad Sohail Malik, Mona Azhar Khan, Muhammad Suleman, Ghulam Hussain, Ramzan Abdul Karim, Khurram Munir</p> <p><i>ADVANCES IN ROBOTICS & MECHANICAL ENGINEERING</i>, 2020</p> <p>DOI: 10.32474/ARME.2020.02.000145</p>
11	<p>Investigation of thermal energy exchange potential of a gravitational water vortex</p> <p>M Tayyab, TA Cheema, MS Malik, A Muzaffar, MB Sajid, Cheol WooPark</p> <p><i>Renewable Energy</i>, 2020</p> <p>https://doi.org/10.1016/j.renene.2020.08.097</p>

12	<p>Effect of Pre-rolling temperature on the Interfacial properties and Formability of Steel-Steel bilayer sheet in Single Point Incremental Forming</p> <p>Hassan, Malik; Hussain, G.; Ali, Aaqib; Ilyas, Muhammad; Khan, Wasim; Malik, Sohail; Bal, Burak</p> <p>Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture</p>
13	<p>Multiphysics study of infrared thermography (IRT) applications</p> <p>Z Andleeb, S Malik, G Hussain, H Khawaja, J Roemer, Gernot Boiger, Mojtaba Moatamedi</p> <p>The International Journal of Multiphysics, 2020</p>
14	<p>Efficiency Enhancement of a Thermophotovoltaic System Integrated With a Back Surface Reflector</p> <p>Ali H Kazim, Mohsina Asif, Khujista Nadeem, Zertasha Shoukat, Rabia Nazir, Muhammad Sohail Malik, Aqsa Shabbir</p> <p>IEEE Access, vol. 8, pp. 153226-153239, 2020, doi: 10.1109/ACCESS.2020.3017504.</p>
15	<p>Multiphysics Analysis of CFRP Charpy Tests by varying Temperatures</p> <p>Andleeb, Z., Strand, C., Malik, S., Hussain, G., Khawaja, H., Boiger, G. and Moatamedi, M. (2020) “, The International Journal of Multiphysics</p> <p>https://doi.org/10.21152/1750-9548.14.2.143</p>
16	<p>Natural fibres as promising environmental-friendly reinforcements for polymer composites</p> <p>Muhammad Ramzan Abdul Karim, Danish Tahir, Ehsan UI Haq, Azhar Hussain, Muhammad Sohail Malik, 2020</p> <p>Polymer and Polymer Composites</p> <p>https://doi.org/10.1177/0967391120913723</p>
17	<p>Numerical investigation of heat transfer enhancement and fluid flow characteristics in a microchannel heat sink with different wall/design configurations of protrusions/dimples</p> <p>Muhammad Mohib Ur Rehman, Taqi Ahmad Cheema, Faraz Ahmad, Ahmad Abbas, Muhammad Sohail Malik, 2019</p> <p>Journal of Heat and Mass Transfer</p> <p>https://doi.org/10.1007/s00231-019-02697-9</p>

18	<p>Ambient Acoustic Energy harvesting Using Piezo-element for Wireless Distributed Sensor Network,</p> <p><i>Iftikhar Ahmad, Adnan Hassan, Muneeb Ullah Anjum, Sohail Malik, Tashfeen Ali, 2019</i></p> <p><i>Acoustical Physics by Springer.</i></p>
19	<p>Flow-based electromagnetic type energy harvester using micro planar coil for IoT sensors application,</p> <p><i>Iftikhar Ahmad, M. Mohib ur Rehman, Masroor Khan, Ahmad Abass, Sarmad Ishfaq, Sohail Malik, 2019</i></p> <p><i>International Journal of Energy Research by Wiley.</i></p> <p><i>DOI: 10.1002/er.4630</i></p>
20	<p>Investigation of the Thermal Performance of Salt Hydrate Phase Change Nanoparticle Slurry Flow in a Microchannel,</p> <p><i>Safi A. Memon, M. B. Sajid, M. S. Malik, Awad B. S. Alquaity, M. Mohib ur. Rehman, Taqi A. Cheema, Moon Kyu Kwak and Cheol WooPark, 2018</i></p> <p><i>Volume 2019, Article ID 5271923, 10 pages</i></p> <p><i>Journal of Chemistry by Hindawi</i></p> <p><i>https://doi.org/10.1155/2019/5271923</i></p>

2. Professional Trainings with participation fee

Sr No	Description	Year	Remarks
1	Introduction to Multibody Dynamics	2019	UG and Grad Professionals Full house
2	Introduction to Multibody Dynamics	2019	UG and Grad Professionals Second Session
3	Introduction to Multibody Dynamics Using ADAMS	2019	Industrial participants 12 Participants
4	Introduction to Multibody Dynamics Using ADAMS	2020	UG and Grad Professionals Full house
5	Introduction to Multibody Dynamics Using ADAMS	2020	UG and Grad Professionals Second session

3. Professional Trainings at GIK

Sr No	Description	Year	Remarks
1	Strategies for online Pedagogy	April 2020	Capacity Building for online teaching
2	Strategies for online Andragogy	December 2020	Capacity Building for online teaching

4. Machine Learning Trainings

Sr No	Description	Year	Remarks
1	Python for ML	November 2022	Engineering Graduates to apply AI for their projects

5. Invited Lectures

Sr No	Description	Year	Event
1	Job skills related Computer Aided Engineering	2019	IEEE Biennial Industry Academia Meeting, Islamabad
2	Workshop on Human Powered Vehicles (practical issues)	2019	ASME EFX, GIK
3	A to Z of online teaching	2020	Vision Edu Global 'Classroom Beyond Walls 2020'

6. Seminars

Sr No	Description	Year	Remarks
1	Multi Body Dynamics Introduction	2017	GIK students and faculty members
2	Introduction to FEA using Apex	2018	GIK students and faculty members
3	Introduction to ADAMS for mechanisms	2018	GIK students and faculty members
4	Training of Outcome Based Education	2019	GIK staff and faculty members

5	Introduction to ADAMS for dynamic systems	2020	GIK students and faculty members
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7. Summer Camps

Sr No	Description	Year	Remarks
1	Design, Build and Fly your own RC Plane in One week	2019	No registrants due to high fee
2	Adventure Camp for Teenagers	2019	Not conducted due to Insufficient registrants

8. Conference Presentations

Sr No	PUBLICATIONS/PRESENTATIONS	
1	Modeling and Parametric Investigation of Vibration Energy Harvesting using Bimorph Piezoelectric Beam with a Tip Mass, S. Khan, M. S. Malik, S. M. Ahmad, M. Junaid and S. Bakhtiar, 2022 International Conference on Emerging Trends in Electrical, Control, and Telecommunication Engineering (ELECTE), Lahore, Pakistan, 2022, pp. 1-6, doi: 10.1109/ELECTE55893.2022.10007361.	
2	Structural Health Monitoring of Aluminum based In-service Structures using Electromagnetic Acoustic Transducers (EMAT). Malik, M. S., Dildar, U., Sarfaraz, D., Ullah, Z., & Martarelli, M. (2022, August). In 2022 19th International Bhurban Conference on Applied Sciences and Technology (IBCAST) (pp. 161-169). IEEE.	
3	To investigate and compare the wing planform's effect on the aerodynamic parameters of aircraft wings using computational fluid dynamics (CFD). Khan, S., Malik, M. S., Junaid, M., & Jafry, A. T. (2022).	
4	Surface Crack detection on railroad head using Active Thermography Bilawal Ramzan, Muhammad Sohail Malik, S M Ahmad and Milena Martarelli 18th IBCAST 2021	

5	<p>Design Optimization of Leaf Springs Made up of Laminated Composites in Comparison with Steel</p> <p>Muhammad Sohail Malik, Rohan Ul Haq</p> <p>16th INTERNATIONAL SYMPOSIUM ON ADVANCED MATERIALS (ISAM-2019)</p>	
6	<p>Effect of PVA Treatment of Bamboo Fibres on Mechanical Properties of Bamboo/Epoxy Composites Danish Tahir, Muhammad Ramzan Abdul Karim, Azhar Hussain, Ehsan Ul Haq, Sohail Malik, Syed Abbas Raza, Mairaj Ahmad</p> <p>16th INTERNATIONAL SYMPOSIUM ON ADVANCED MATERIALS (ISAM-2019)</p> <p>Key Engineering Materials</p>	
7	<p>Enhancement in Flexural Characteristics of Honeycomb Sandwich Structures for Diverse Core Configurations Sohail Gohar, Muhammad Sohail Malik, Ghulam Hussain</p> <p>16th INTERNATIONAL SYMPOSIUM ON ADVANCED MATERIALS (ISAM-2019)</p> <p>Key Engineering Materials</p>	
8	<p>Numerical analysis for hot rolled steel/steel (st/st) bilayer sheet in single point incremental forming</p> <p>6th Student Research Paper Conference , 2019</p> <p>At: Institute of Space Technology, Islamabad</p>	
9	<p>Implementation of EFI system on Motorbike,</p> <p>Muneeb Aslam, Syed Ahmad Asif, Wajahat Ali, Hamid Khan, M Sohail Malik, 2018</p> <p>THE 1ST INTERNATIONAL CONFERENCE ON AUTOMOTIVE ENGINEERING 2018, SMME NUST, Islamabad</p>	
10	<p>Implementation of Hybrid Mechanism on Motorbike,</p> <p>Muneeb Aslam, Syed Ahmad Asif, Wajahat Ali, Hamid Khan, M Sohail Malik, 2018</p> <p>THE 1ST INTERNATIONAL CONFERENCE ON AUTOMOTIVE ENGINEERING 2018, SMME NUST, Islamabad</p>	

11	Numerical Study of Slurry Flow Cooling Performance with Phase Change Nanoparticles in a Microchannel". Safi A. Memon, M. B. Sajid, M. S. Malik, Awad B. S. Alquaity, 2017 ICHMMET 2017, South Korea	
12	Model assisted POD of laser-ultrasonics NDT for train axles: A review, M. S. Malik 2016 International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT), Chennai, 2016, pp. 4645-4648, doi: 10.1109/ICEEOT.2016.7755600 .	
13	Reliability analysis of laser ultrasonics for train axle diagnostics based on model assisted POD curves 2014 In AIP conference proceedings (Vol. 1600, No. 1, pp. 396-404). American Institute of Physics. https://doi.org/10.1063/1.4879608	

9. Keynotes

Sr No	Conference	Topic
1	Metrix Tech Summit	How am I changing the world with Drones?
2	19th IBCAST 2022	Urban Air Mobility: Future of sustainable cities
3	Future Fest 2022	Education Reforms in Pakistan for skilled Youth
4	18th IBCAST 2021	Non-Contact Inspection Methods for CFRP Structures
5	16th IBCAST 2019	Role of CAE in research

10. Conference Chairs

Sr No	Conference
1	WRE 1st WRE GIK Institute, 2019
2	16th IBCAST 2019 track of Aerostructures

11. Book Chapter

Sr No	Title
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1	Jafry, Ali Turab, Sohail Malik, Naseem Abbas, Uzair Sajjad, Hafiz Muhammad Ali, and Chi-Chuan Wang. "Role of nanofluids in microchannel heat sinks." In <i>Advances in Nanofluid Heat Transfer</i>, pp. 447-478. Elsevier, 2022.
2	Andleeb, Zahra, Sohail Malik, Ghulam Hussain, Hassan Abbas Khawaja, and Mojtaba Moatamedi. "Design optimization and dynamic testing of CFRP for helicopter loading hanger." In <i>Multiphysics Simulations in Automotive and Aerospace Applications</i>, pp. 187-209. Academic Press, 2021.