

Hamid Jabbar

Associate Professor

College of Electrical & Mechanical Engineering

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About

Dr. Hamid Jabbar is working as Associate Professor in the College of Electrical & Mechanical Engineering. Dr. Hamid Jabbar has a PhD in Piezoelectric Materials Applications, Low-Power Energy Harvesting. Dr. Hamid Jabbar has published 46 research articles & conference papers having a citation count of 856, carried out 8 projects and filed 2 intellectual property.

Qualifications

PhD in Piezoelectric Materials Applications, Low-Power Energy Harvesting Hanyang University , Korea	2013 - 2017
MS in Circuit Design Myongji University , Korea	2006 - 2008
BE in Mechatronics NUST, Islamabad , Pakistan	1998 - 2002

Experience

Associate Professor College of Electrical & Mechanical Engineering	2019- Present
Assistant Professor College of Electrical & Mechanical Engineering	2018 - 2019
Research Assistant Professor Hanyang University , 222, Wangsimni-ro, Songdong-Gu, Seoul, South-Korea	2017 - 2018
Design Engineer SoftwareSoft , 78, Street No. 45, F-10/4 , Islamabad	2002 - 2003
Manager / Assistant Manager National Development Complex (NDC/NESCOM) , Plot No. 94, Sector H-11/4, Islamabad	2002 - 2013

Awards

Toyota Award Our team was awarded TOYOTA AWARD in ABU-ROBOCON Robot Contest in 2002, Japan	2002
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Professional Memberships

PEC	Since 2005
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Research Projects

National Projects

INDIGENO US DEVELOPMENT OF SENSOR OF PAP 104 FUZE	2024
Funding Agency: Pakistan NAVY through NHL and DRD	
Amount: PKR 4,670,000.00	
Status: Approved_inprocess	
Development of Piezoelectric Actuators for rotation rate Sensor	2023
Funding Agency: NESCOM	
Amount: PKR 750,000.00	
Status: Approved_inprocess	
Industrial ultrasonic actuators based on piezoelectric materials for ultrasonic welding machines	2025
Funding Agency: Pakistan Science Foundation (PSF)	
Amount: PKR 7,356,600.00	
Status: Approved_inprocess	
Multirobot automation system for manufacturing (Composite layup manufacturing)	2023
Funding Agency: NUST	
Amount: PKR 22,000,000.00	
Status: Completed	
FUNCTIONAL REPLACEMENT OF THE HE FUZE’S SHOCK WAVE DETECTOR OF UNDERWATER VEHICLE PAP-104 THROUGH INDEGNOUS DEVELOPMENT	
Funding Agency: Pakistan Navy	
Amount: PKR 4,670,000.00	
Status: Approved_inprocess	
Development of lab/pilot scale facilities for the production of piezoelectric material for multilayer energy devices	2021
Funding Agency: HEC	
Amount: PKR 19,940,000.00	
Status: Completed	
Indigenous Approach for Development of Pizoelectric Devices	2020
Funding Agency: National Centre of Robotics and Automation (NCRA)	
Amount: PKR 14,317,500.00	
Status: Completed	
Battery-Less and Wireless Monitoring System for Industrial Conveyor Belt	2019
Funding Agency: HEC	
Amount: PKR 500,000.00	
Status: Completed	

International Projects

Research Articles

Applications of piezoelectric-based sensors, actuators, and energy harvesters	2025
Hassan Elahi Hamid Jabbar Anas Bin Aqeel Ahsan Ali Aasia Farrukh Saira Bibi Wael A. Altabey Sallam A. Kouritem Mohammad Noori Mohammad Ali	
Sensors and Actuators Reports , Volume 9, Article Number 100302	
Impact Factor: 6.500 Quartile: 1 Citations: 2	
DOI: https://doi.org/10.1016/j.snr.2025.100302	
Development of a Capacitive-Piezoelectric Tactile Force Sensor for Static and Dynamic Forces	2025
Measurement and Neural Network-Based Texture Discrimination	
Maira Ehsan Mughal Muhammad Rehan Muhammad Mubasher Saleem Masood Ur Rehman Hamid Jabbar Rebecca Cheung	
IEEE Sensors Journal , Volume:25, Issue:7, Pages 11944-11954	
Impact Factor: 4.300 Quartile: 1 Citations: 3	
DOI: https://doi.org/10.1109/JSEN.2025.3542498	
Enhancing Ocular Precision: A Tactile Force Feedback-Enabled Handheld Cyclodialysis Spatula for Eye Surgery	2025
Adeel Arshad Muhammad M. Saleem Hamid Jabbar Muhammad Osama Ali Mohsin Islam Tiwana Rebecca Cheung	
IEEE Sensors Journal , Volume 25, No. 2, Article Number 3220-3229	

Impact Factor: 4.300 Quartile: 1 DOI: https://doi.org/10.1109/JSEN.2024.3494875	
Mental Fatigue Classification Aided by Machine Learning-Driven Model under the Influence of Foot and Auditory Binaural Beats Brain Massage Via fNIRS <i>Umar Shahbaz Khan Nazo Haroon Taikyeong Ted. Jeong Noman Naseer Hamid Jabbar</i> <i>IEEE Access</i> , Volume 12, Pages 187160-187191 Impact Factor: 3.400 Quartile: 2 DOI: 10.1109/ACCESS.2024.3508875	2024
A capacitive tactile force sensor with mutual fringe effect and parallel plate design for robot assisted surgery <i>Adeel Arshad Muhammad Mubasher Saleem Faraz Javaid Hamid Jabbar</i> <i>Journal of Applied Physics</i> , Volume:136, Issue:22, Pages:09 Impact Factor: 2.7 Quartile: 2 DOI: https://doi.org/10.1063/5.0232076	2024
Optimization of z-scheme Bi0.5Na0.5TiO3/RGO-Co3O4 composite catalyst for water splitting reaction through piezo-photocatalysis <i>Farah Mumtaz Hamid Jabbar Muhammad Zubair Khan Abdul Ghaffar Abrar H. Baluch Sofia Javed Tayyaba Noor Zeeshan Ali Jung Hyuk Koh Mohsin Saleem</i> <i>International Journal of Hydrogen Energy</i> , Volume 78, Pages 1468-1480 Impact Factor: 8.100 Quartile: 1 Citations: 13 DOI: https://doi.org/10.1016/j.ijhydene.2024.06.387	2024
A comprehensive deep learning approach for harvest ready sugarcane pixel classification in Punjab, Pakistan using Sentinel-2 multispectral imagery <i>Sidra Muquddas Waqar Shahid Qureshi Hamid Jabbar Arslan Munir Azeem Haider</i> <i>Remote Sensing Applications: Society and Environment</i> Impact Factor: 4.5 Quartile: 2 DOI: https://doi.org/10.1016/j.rsase.2024.101225	2024
Z-Number-Based Fuzzy Logic Approach for Mobile Robot Navigation <i>Osama Ali Khan Kunwar Faraz Ahmed Khan Umar Shahbaz Khan Hamid Jabbar</i> <i>IEEE Access</i> , Volume 11, Pages 131979-131997 Impact Factor: 3.9 Quartile: 2 Citations: 1 DOI: 10.1109/ACCESS.2023.3336014	2023
Optimum Driving of Ultrasonic Cleaner Using Impedance and FFT Analysis with Validation of Image Processing of Perforated Foils <i>Muhammad Usman Khan Faisal Rehman Mohsin Saleem Hassan Elahi Tae Hyun Sung Hamid Jabbar</i> <i>Applied Sciences</i> , Volume: 13, Issue: 12, Article Number: 6991 Impact Factor: 2.838 Quartile: 2 Citations: 3 DOI: 10.3390/app13126991	2023
Enhanced Ferroelectric and Dielectric Properties of Niobium-Doped Lead-Free Piezoceramics <i>Faysal Naeem Mohsin Saleem Hamid Jabbar Gulraiz Tanvir Fiza Asif Abrar H Baluch Muhammad Irfan Abdul Ghaffar Adnan Maqbool Tayyab Rafiq</i> <i>Materials</i> , Volume 16(2), Article Number 477 Impact Factor: 3.748 Quartile: 1 Citations: 9 DOI: https://doi.org/10.3390/ma16020477	2023
Study of ferroelectric and piezoelectric response of heat-treated surfactant-based BaTiO3 nanopowder for high energy capacitors <i>Gulraiz Tanvir Mohsin Saleem Hamid Jabbar Amir Hamza Muhammad Asif Hussain Muhammad Zubair Khan Abrar H. Baluch Muhammad Irfan Muhammad Shoaib Butt Faysal Naeem Abdul Ghaffar Muhammad Ahsan Muhammad Asif Rafiq Rizwan Ahmed Malik Adnan Maqbool</i> <i>Materials Science and Engineering B</i> , Volume 287, Article Number 116100 Impact Factor: 3.407 Quartile: 2 Citations: 9 DOI: https://doi.org/10.1016/j.mseb.2022.116100	2023
Process Parameter Optimization of Additively Manufactured Parts using Intelligent Manufacturing <i>Rizwan Ur Rehman Uzair Khaleeq uz Zaman Shahid Aziz Hamid Jabbar Adnan Shujah Shaheer Khaleequzzaman Amir Hamza Usman Qamar Dong Won Jung</i> <i>Sustainability</i> , Volume 14(22), Article Number 15475 Impact Factor: 3.889 Quartile: 2 Citations: 4 DOI: https://doi.org/10.3390/su142215475	2022

- Ambient Light Energy Harvesting and Numerical Modeling of Non-Linear Phenomena** 2022
Hamid Jabbar Taikyeong Ted Jeong
Applied Sciences , Volume 12, Issue 4, Article Number 2068
Impact Factor: 2.9 | **Quartile:** 2 | **Citations:** 7
DOI: <https://doi.org/10.3390/app12042068>
- A new method for pixel classification for rice variety identification using spectral and time series data from Sentinel-2 satellite imagery** 2022
Usman Rauf Waqar Shahid Qureshi Hamid Jabbar Ayesha Zeb Alina Mirza Eisa Alanazi Umar Shahbaz Khan Nasir Rashid
Computers and electronics in agriculture , Volume 193, Article Number 106731
Impact Factor: 5.565 | **Quartile:** 1 | **Citations:** 16
DOI: <https://doi.org/10.1016/j.compag.2022.106731>
- Improved super capacitive performance of hydrothermally developed Mn and Ni oxides along with activated carbon as ternary nanocomposite** 2022
Faiza Khalid Mohsin Saleem Hamid Jabbar Muhammad Gulraiz Tanvir Muhammad Shoaib Butt Abrar H. Baluch Abdul Ghaffar Muhammad Ahsan Rizwan Ahmed Malik Umit Alver Hussein Alobei Zab dur Rehman Meshal Alzaid Muhammad Zubair Khan
Journal of Physics and Chemistry of Solids , Volume 161, Article Number 110467
Impact Factor: 3.995 | **Quartile:** 2 | **Citations:** 11
DOI: <https://doi.org/10.1016/j.jpcs.2021.110467>
- A novel approach of overtaking maneuvering using modified RG method** 2022
Usman Ghumman Hamid Jabbar Mohsin Islam Tiwana Kunwar Faraz Ihsan Ullah Khalil
PLoS One , Volume 17(1), Pages e0260455
Impact Factor: 3.240 | **Quartile:** 2 | **Citations:** 2
DOI: <https://doi.org/10.1371/journal.pone.0260455>
- Percolation phenomena of dielectric permittivity of a microwave-sintered BaTiO₃–Ag nanocomposite for high energy capacitor** 2020
Mohsin Saleem Muhammad Shoaib Butt Adnan Maqbool Malik Adeel Umer Muhammad Shahid Farhan Javaid Rizwan Ahmed Malik Hamid Jabbar Hafiz Muhammad Waseem Khalil Lim Dong Hwan Minsoo Kim Bo-Kun Koo Soon Jong Jeong
Journal of Alloys and Compounds , Volume 822, Article Number 153525
Impact Factor: 5.316 | **Quartile:** 1 | **Citations:** 29
DOI: <https://doi.org/10.1016/j.jallcom.2019.153525>
- Self-Powered Operational Amplifying System with a Bipolar Voltage Generator Using a Piezoelectric Energy Harvester** 2019
Hamid Jabbar Se Yeong Jeong Jae Yong Cho Seong Do Hong Wonseop Hwang Jung Hwan Ahn Jeong Pil Jhun Tae Hyun Sung
Electronics , Electronics 2020
Impact Factor: 2.412 | **Quartile:** 2 | **Citations:** 6
DOI: <https://doi.org/10.3390/electronics9010041>
- Optimized composite piezoelectric energy harvesting floor tile for smart home energy management** 2018
Kyung-BumKim Jae Yong Cho Hamid Jabbar Jung Hwan Ahn Seong Do Hwan Sang Bum Woo Tae Hyun Sung
Energy Conversion and Management , Volume: 171 Pages: 31-37
Impact Factor: 7.181 | **Quartile:** 1 | **Citations:** 84
DOI: [10.1016/j.enconman.2018.05.031](https://doi.org/10.1016/j.enconman.2018.05.031)
- Design of Optimized Cantilever Form of a Piezoelectric Energy Harvesting System for a Wireless Remote Switch** 2018
Jae YongCho Kyung-BumKim Hamid Jabbar Sin WooJeong Jung Hwan Ahn Won Seop Hwang Se YeongJeong Haimoon Cheong Hong Hee Yoo Tae HyunSung
Sensors and Actuators A-Physical , Volume 280, Pages 340-349
Impact Factor: 2.739 | **Quartile:** 2 | **Citations:** 19
DOI: [10.1016/j.sna.2018.07.023](https://doi.org/10.1016/j.sna.2018.07.023)
- Sustainable micro-power circuit for piezoelectric energy harvesting tile** 2017
Hamid Jabbar Seong Do Hwang Seong Kwang Hong Chan Ho Yang Se Yeong Jeong Tae Hyun Sung
Integrated Ferroelectrics , Volume 183, Issue 1, Pages 193-209
Impact Factor: 0.367 | **Quartile:** 4 | **Citations:** 17
DOI: [10.1080/10584587.2017.1376964](https://doi.org/10.1080/10584587.2017.1376964)
- Piezoelectric energy harvester impedance matching using a piezoelectric transformer** 2017
Hamid Jabbar Hyun Jun Jung Nan Chen Dae Heung Cho Tae Hyun Sung
Sensors and Actuators A-Physical , Volume 264, Pages 141-150

Impact Factor: 2.311 Quartile: 2 Citations: 29 DOI: https://doi.org/10.1016/j.sna.2017.07.036	
A piezoelectric impact-induced vibration cantilever energy harvester from speed bump with a low-power power management circuit <i>Nan Chen Hyun Jun Jung Hamid Jabbar Tae Hyun Sung Tingcun Wei</i> <i>Sensors and Actuators A:Physical</i> , Volume: 254 Pages: 134-144 Published: FEB 1 2017 Impact Factor: 2.311 Quartile: 2 Citations: 96 DOI: 10.1016/j.sna.2016.12.006	2017
Piezoelectric energy harvesting system with magnetic pendulum movement for self-powered safety sensor of trains <i>Jae Yong Cho Sinwoo Jeong Hamid Jabbar Yewon Song Jung Hwan Ahn Jeong Hun Kim Hyun Jun Jung Hong Hee Yoo Tae Hyun Sung</i> <i>Sensors and Actuators A-Physical</i> , Volume 250, Pages 210-218 Impact Factor: 2.499 Quartile: 1 Citations: 60 DOI: 10.1016/j.sna.2016.09.034	2016
Design of a multi-array piezoelectric energy harvester for a wireless switch <i>Se Yeong Jeong Hyun Jun Jung Hamid Jabbar Seong Kwang Hong Jung Hwan Ahn Tae Hyun Sung</i> <i>International Journal of Hydrogen Energy</i> , Volume 41, Issue 29, Pages 12696-12703, Special Issue SI Impact Factor: 3.582 Quartile: 1 Citations: 13 DOI: 10.1016/j.ijhydene.2016.03.077	2016
Hybrid-type (d33 and d31) impact-based piezoelectric hydroelectric energy harvester for watt-level electrical devices <i>Hyun Jun Jung Hamid Jabbar Yooseob Song Tae Hyun Sung</i> <i>Sensors and Actuators A-Physical</i> , Volume 245, Pages 40-48 Impact Factor: 2.499 Quartile: 1 Citations: 18 DOI: 10.1016/j.sna.2016.04.013	2016
Non-resonant piezoelectric transformer based power converter for ultra-low-power electronic devices <i>Hamid Jabbar Hyun Jun Jung Jae Yong Cho Tae Hyun Sung</i> <i>Sensors and Actuators A-Physical</i> , Volume 244, Pages 86-94 Impact Factor: 2.499 Quartile: 1 Citations: 3 DOI: 10.1016/j.sna.2016.04.001	2016
Design of piezoelectric energy harvester with additional springs for varying stiffness of module <i>Seong Kwang Hong Chan Ho Yang Hamid Jabbar Min Sik Woo Daniel Song Tae Hyun Sung</i> <i>Journal of Electroceramics</i> , Volume 35, Issue 1-4, Pages 11-18 Impact Factor: 1.263 Quartile: 2 Citations: 7 DOI: 10.1007/s10832-015-9986-9	2015
Energy Harvesting Technique by Using Novel Voltage Multiplier Circuits and Passive Devices <i>Hamid Jabbar Sungju Lee Taikyeong Jeong Kyeon Hur</i> <i>IEICE Transactions on Electronics</i> , Volume E96C, Issue 5, Pages 726-729 Impact Factor: 0.389 Quartile: 4 Citations: 5 DOI: 10.1587/transele.E96.C.726	2013
A Novel Sensing Method and Sensing Algorithm Development for a Ubiquitous Network <i>Hamid Jabbar Sungju Lee Seunghwan Choi Seunghyun Baek Sungwook Yu Taikyeong Jeong</i> <i>Sensors</i> , Volume 10, Issue 9, Pages 8129-8142 Impact Factor: 1.774 Quartile: 1 Citations: 6 DOI: 10.3390/s100908129	2010
RF Energy Harvesting System and Circuits for Charging 1 of Mobile Devices <i>Hamid Jabbar Young. S. Song Taikyeong Ted Jeong</i> <i>IEEE Transactions on Consumer Electronics</i> , Volume 56, Issue 1, Pages 247-253 Impact Factor: 1.057 Quartile: 2 Citations: 344 DOI: 10.1109/TCE.2010.5439152	2010
Viewer Identification and Authentication in IPTV using RFID Technique <i>Hamid Jabbar Taikyeong Ted Jeong Jun Hwang Gyungleen Park</i> <i>IEEE Transactions on Consumer Electronics</i> , Volume 54, Issue 1, Pages 105-109 Impact Factor: 0.985 Quartile: 2 Citations: 37 DOI: 10.1109/TCE.2008.4470031	2008

- Assistive Feeding System: Design and Evaluation** 2024
Usama Jahangir Wajid Ali Muhammad Fahad Amir Mohsin Islam Tiwana Hamid Jabbar
2024 International Conference on Robotics and Automation in Industry (ICRAI), res.country(177,)
Citations: N/A
DOI: 10.1109/ICRAI62391.2024.10894327
- Robust State of Charge Estimation of Lithium-Ion Batteries Using a Nonlinearity-Aware PID Observer** 2024
Hafiz Muhammad Jawaad Muhammad Saeed Hamid Jabbar Anjum Naeem Malik Hassan Elahi Umar Shahbaz Khan
2024 International Conference on Robotics and Automation in Industry (ICRAI), res.country(177,)
Citations: N/A
DOI: 10.1109/ICRAI62391.2024.10894055
- Design of Olive Pitting Machine** 2021
Ahmed Faizan Tariq Eisha Gul Manahil Shahid Amir Hamza Hamid Jabbar Umar Shahbaz Khan
IEEE, 2021 International Conference on Robotics and Automation in Industry (ICRAI), res.country(177,)
Citations: N/A
DOI: 10.1109/ICRAI54018.2021.9651337
- Efficient Edge Server Computing on a Scaled IoT Based Sensory Network** 2021
Syed Asad Amin Mujtaba Rafique Ghotu Umar Shahbaz Khan Hamid Jabbar
IEEE, 2021 International Conference on Robotics and Automation in Industry (ICRAI), res.country(275,)
Citations: N/A
DOI: 10.1109/ICRAI54018.2021.9651429
- Enhancement of electrochemical properties of Niobium Doped lead free piezoceramic material for energy harvesting applications** 2021
Faysal Naeem Mohsin Saleem Tayyab Rafiq Hamid Jabbar
The international conference on advances in chemical engineering and science (ICACES), res.country(177,)
Citations: N/A
DOI: Nil
- Self-Start Piezoelectric Energy Harvesting Circuit With Adjustable UVLO Converter for Wireless Sensor Network** 2017
Jung, H.J. Lee, S hamid Jabbar Jeong, S.Y. Sung, T.H
ASME 2017 Conference on Smart Materials, Adaptive Structures and Intelligent Systems, res.country(233,)
Citations: N/A
DOI: <https://hanyang.elsevierpure.com/en/publications/self-start-piezoelectric-energy-harvesting-circuit-with-adjustabl>
- Using tuning fork as piezoelectric energy harvester** 2015
Hamid Jabbar Jae Young Cho Jung Hwan Ahn Tae Hyun Sung
3rd international conference on advanced electromaterials (ICAE), res.country(121,)
Citations: N/A
DOI: <http://2015.icae.kr/icae2015/pdf/FP/FP-593.pdf>
- Ethernet-based Communication Architecture Design and Fault-Tolerant System** 2012
Hysunshin Lee Hamid Jabbar Sungju Lee Saejeong Choi Taikyeong Jeong
IMECS 2012, International MultiConference of Engineers and Computer Scientists 2012, IMECS 2012, res.country(94,)
Citations: N/A
DOI: ISBN: 978-988-19251-9-0
- Wirelessly charging mobile devices from ambient RF sources** 2010
Hamid Jabbar Youngseok Song Taikyeong Ted. Jeong
2010 Digest of Technical Papers International Conference on Consumer Electronics (ICCE), res.country(233,)
Citations: N/A
DOI: 10.1109/ICCE.2010.5418717
- RFID Connectivity with STB for Viewer Identification in IPTV** 2008
Hamid Jabbar Taikyeong Jeong Jun Hwang Humor Hwang Gyungleen Park
International Conference on Consumer Electronics (ICCE), res.country(233,)
Citations: N/A
DOI: 10.1109/ICCE.2008.4587950
- Optimum Sensing Technique and Approach for Low Power Consumption Network** 2007

Hamid Jabbar Taewan Kim Jin-Suk Kang Jangho Lee Hyosik Yang Meeyoung Sung Gyunleen Park Taikyeong Jeong
5th ACIS International Conference on Software Engineering Research, Management & Applications (SERA 2007), res.country(121,)

Citations: N/A
DOI: <https://doi.org/10.1109/SERA.2007.103>

Book Chapters

RFID System Integration <i>Hamid Jabbar Taikyeong Ted. Jeong</i> In: <i>Radio Frequency Identification Fundamentals and Applications Bringing Research to Practice</i> , Chapter:15, Pages:211-228 Citations: N/A DOI: https://doi.org/10.5772/8000	2010
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Editorial Activities

Reviewed Papers for Journals Impact Factor: 0.975	2019
Reviewed Papers for Journals Impact Factor: 0.975	2019
Reviewed Papers for Journals Impact Factor: 4.098	2019
Reviewed Papers for Journals Impact Factor: 0.975	2018
Reviewed Papers for Journals Impact Factor: 0.975	2018

Intellectual Property

Copyrights	
Patents	
An Apparatus for Lead-mono-Oxide Manufacturing Status: Licensed Filed	2022
Industrial Designs	
Trademarks	
Matentx Class 09 Status: Licensed Filed	2023