

Azhar UI Haq

Associate Professor

College of Electrical & Mechanical Engineering

Email: azhar.ulhaq@ceme.nust.edu.pk

Contact: 923154149

LinkedIn:



About

Dr. Azhar UI Haq is working as Associate Professor in the College of Electrical & Mechanical Engineering. Dr. Azhar UI Haq has a PhD in Electrical Power System. Dr. Azhar UI Haq has published 49 research articles & conference papers having a citation count of 920, carried out 4 projects and filed 2 intellectual property.

Qualifications

PhD in Electrical Power System	2012 - 2016
University of Aquila , Germany	
BE in Electrical Engineering	2006 - 2010
University of South Asia , Pakistan	

Experience

Associate Professor	2024- Present
College of Electrical & Mechanical Engineering	
Associate Professor	2024 - 2024
College of Electrical & Mechanical Engineering	
Associate Professor	2022 - 2019
College of Electrical & Mechanical Engineering	
Assistant Professor	2019 - 2024
College of Electrical & Mechanical Engineering	
Assistant Professor	2016 - 2022
College of Electrical & Mechanical Engineering	
Assistant Professor	2016 - 2016
College of Electrical & Mechanical Engineering	
Postdoc Research Fellow	2016 - 2016
University of New Brunswick, Canada , Fredericton, New Brunswick. Canada. E3B 5A3	
Trainee Engineer	2010 - 2012
SABA Power Company, (Pvt) Limited , Sheikhpura, Punjab, Pakistan	

Awards

Award of Excellence	2015
Received an Award of Excellence by Pak-Canada Association, Waterloo, Aug. 2015	
Best Research Paper Award	2015
Received International Best Research Paper Award at an IEEE International conference on Smart Grid and Renewable Energy, held at Texas A&M University, Doha, March 2015	
Graduate Research Student	2015
Graduate Research Studentship Award (Scholarship) from University of Waterloo, 2015	
European Union Award	
Honored with a title of "the only Pakistani Ph.D. scholar" by Higher Education Commission Pakistan upon selection as a finalist for European Union Award (INNOVACT Campus) 2013, held by European Union Technology Forum in Reims, France	

Professional Memberships

PEC	Since 2015
IEEE	
IES	
IEANG	

Research Projects

National Projects

Design and Construction of Dispersed Hydro Power Turbine with Low RPM Generator	2019
Funding Agency: NUST	
Amount: PKR 300,000.00	
Status: Completed	
Compensating Variability of Solar Photovoltaic Systems	2021
Funding Agency: HEC	
Amount: PKR 19,914,000.00	
Status: Completed	
Design and Construction of Dispersed Hydro Power Turbine with Low RPM Generator	2019
Funding Agency: NUST	
Amount: PKR 300,000.00	
Status: Completed	
Incorporating Smart Charging of Electric Vehicles in Micro-grid Operation and its Impact Analysis	2017
Funding Agency: HEC	
Amount: PKR 426,000.00	
Status: Completed	

International Projects

Research Articles

Fault diagnosis and localization in photovoltaic-fed cascaded half-bridge five-level inverter using residual network architecture	2025
Iqra Ashfaq Zaki Uddin Naeem Ul Islam Azhar Ul Haq Muhammad nouman Arif	
Electrical Engineering , Pages 1-24	
Impact Factor: 1.900 Quartile: 3	
DOI: https://doi.org/10.1007/s00202-025-03183-8	
A fuzzy reconfiguration approach for mitigating power losses in PV systems	2025
Ihsan Ullah Khalil Azhar Ul Haq Marium Jalal Mati Ullah Ahsan Usman Ghumman	
Results in Engineering , Volume 25, Article Number 103965	
Impact Factor: 6.000 Quartile: 1 Citations: 4	
DOI: https://doi.org/10.1016/j.rineng.2025.103965	
A modified chess knight reconfiguration approach for mitigating power losses in PV systems	2024
Ihsan Ullah Khalil Azhar Ul haq	
Energy Reports , Volume:11, Page:2204-2219	
Impact Factor: 5.2 Quartile: 2 Citations: 11	
DOI: 10.1016/j.egy.2024.01.066	
Open switch fault diagnosis of cascaded H-bridge 5-level inverter using deep learning	2024
Muhmmad Nouman Arif Zaki Uddin Azhar Ul Haq Khalid Mehmood Cheema Ahmad H. Milyani Naeem ul Islam Iqra Ashfaq	
Frontiers in Energy Research, Volume 12, Article Number 1388273	
Impact Factor: 2.600 Quartile: 3	
DOI: https://doi.org/10.3389/fenrg.2024.1388273	
A deep learning-based transformer model for photovoltaic fault forecasting and classification	2024
Ihsan Ullah Khalil Azhar Ul haq Naeem ul Islam	
Electric Power Systems Research, Volume 228, Article Number 110063	
Impact Factor: 3.9 Quartile: 2 Citations: 18	

DOI: https://doi.org/10.1016/j.epsr.2023.110063	
A novel procedure for photovoltaic fault forecasting <i>Ihsan Ullah Khalil Naeem ul Islam Azhar UI haq</i> <i>Electric Power Systems Research</i> , Volume 226, Article Number 109881 Impact Factor: 3.9 Quartile: 2 Citations: 9 DOI: https://doi.org/10.1016/j.epsr.2023.109881	2024
Power Quality Optimization in Dual Active Bridge Converters <i>Abdul Shakoor Azhar UI Haq Taosif Iqbal</i> <i>IEEE Access</i> , Volume 11, Pages 138788-138798 Impact Factor: 3.9 Quartile: 2 Citations: 2 DOI: 10.1109/ACCESS.2023.3339554	2023
Fault detection and computation of power in PV cells under faulty conditions using deep-learning <i>Amir Sohail Naeem UI Islam Azhar UI Haq Siraj UI Islam Imran Shafi Jaebyung Park</i> <i>Energy Reports</i> , Volume 9, Pages 4325-4336 Impact Factor: 4.937 Quartile: 2 Citations: 18 DOI: https://doi.org/10.1016/j.egyr.2023.03.094	2023
N to P-type transition with narrowing optical bandgap and increasing carrier concentration of spin coated Cu doped ZnS thin films for optoelectronic applications <i>Saad Saud Ali Shah Saifullah Awan Sana Zainab Hassan Tariq M. Bilal Riaz Azhar UI-Haq Nadia Shahzad Naseem Iqbal</i> <i>Optical Materials</i> , Volume 141, Article Number 113816 Impact Factor: 3.9 Quartile: 2 Citations: 11 DOI: https://doi.org/10.1016/j.optmat.2023.113816	2023
Intelligent Control Schemes for Maximum Power Extraction from Photovoltaic Arrays under Faults <i>Dr Azhar Ulhaq Shah Fahad Saba Gul Rui Bo</i> <i>Energies</i> , Volume: 16, Issue: 2, Article Number: 974 Impact Factor: 3.252 Quartile: 3 Citations: 7 DOI: 10.3390/en16020974	2023
Synchronous Reference Frame Theory Based Intelligent Controller for Current THD Reduction <i>Essam A. Al-Ammar Azhar UI-Haq Ahsan Iqbal Wonsuk Ko Marium Jalal Muhammad Almas Anjum Hyeong-Jin Choi Hyun-Koo Kang</i> <i>Journal of Electrical Engineering and Technology</i> , Pages 1-20 Impact Factor: 1.528 Quartile: 4 Citations: 2 DOI: https://doi.org/10.1007/s42835-021-00824-3	2021
Penetration of Electric Vehicles in Gulf Region and Its Influence on Energy and Economy <i>Hatem F. Sindi Azhar UI-Haq Mohammad Shahmeer Hassan Atif Iqbal Marium Jalal</i> <i>IEEE Access</i> , Volume 9, Pages 89412-89431 Impact Factor: 3.476 Quartile: 2 Citations: 20 DOI: 10.1109/ACCESS.2021.3087126	2021
Implementation of Smart Grid Technologies in Pakistan under CPEC Project: Technical and Policy Implications <i>Azhar UI Haq Marium Jalal Mohammad Shahmeer Hassan Hatem Sindi Shahzore Ahamed Shoaib Ahmed</i> <i>IEEE Access</i> , Volume 9, Pages 61594-61610 Impact Factor: 3.476 Quartile: 2 Citations: 21 DOI: 10.1109/ACCESS.2019.2958407	2021
Voltage stability enhancement in grid-connected microgrid using enhanced dynamic voltage restorer (EDVR) <i>Ahsan Iqbal Ayesha Ayoub Asad Waqar Azhar-ul-Haq Muhammad Zahid Syed Haider</i> <i>AIMS Energy</i> , Volume 9(1), Pages 150–177 Impact Factor: - Citations: 15 DOI: https://doi.org/10.3934/energy.2021009	2021
Enhancement of the Triboelectrification Using Artificial Surface Charges <i>Muhammad Abdullah Azhar-ul-Haq Amir Shahzad Hatem F. Sindi Marium Jalal Muhammad Umer Shahzad Awan Saifullah Awan</i> <i>IEEE Access</i> , Volume 8, Pages 222556-222561 Impact Factor: 3.367 Quartile: 2 Citations: 2 DOI: 10.1109/ACCESS.2020.3043871	2020
Dynamic Modeling and Heat Flow Study of a Thermal Power Plant Using OpenModelica	2020

<p><i>Hafeez Anjum Azhar-ul-Haq Imran Mehmood</i> <i>IEEE Access</i> , Volume 8, Pages 178614-178626</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 2 DOI: 10.1109/ACCESS.2020.3027640</p>	
<p>Solver-Based Mixed Integer Linear Programming (MILP) Based Novel Approach for Hydroelectric Power Generation Optimization</p> <p><i>Azhar-ul-Haq Aqib Perwaiz Jasvinder Kumar Ihsan Ullah Khalil Khalid Mehmood</i> <i>IEEE Access</i> , Volume 8, Pages 174880-174892</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 11 DOI: 10.1109/ACCESS.2020.3024727</p>	2020
<p>Electric Transportation in Pakistan Under CPEC Project: Technical Framework and Policy Implications</p> <p><i>Azhar-ul-Haq Mariam Jalal Mohammad Shahmeer Hassan Hatem F. Sindi Attaullah Shah Almas Anjum</i> <i>IEEE Access</i> , Volume 8, Pages 162394-162420</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 9 DOI: 10.1109/ACCESS.2020.3021308</p>	2020
<p>Energy Scenario in South Asia: Analytical Assessment and Policy Implications</p> <p><i>Azhar Ul-Haq Mariam Jalal Hatem F. Sindi Shoaib Ahmed</i> <i>IEEE Access</i> , Volume 8, Pages 156190-156207</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 26 DOI: 10.1109/ACCESS.2020.3019648</p>	2020
<p>Investigation of dielectric properties and methylene intactness under multiple environmental stresses for high voltage epoxy composites</p> <p><i>Abraiz Khattak Kashif Imran Faiza Asghar Ali Abasin Ulasyar Azhar Ul Haq Muhammad Amin Adam Khan</i> <i>Materials Research Express</i> , Volume 7, Article Number 075304</p> <p>Impact Factor: 1.620 Quartile: 4 Citations: 5 DOI: https://doi.org/10.1088/2053-1591/aba060</p>	2020
<p>Fuzzy Logic-Based Direct Load Control Scheme for Air Conditioning Load to Reduce Energy Consumption</p> <p><i>Zeeshan Ali Shah Hatem F. Sindi Mian Ashfaq Ali Azhar Ul Haq</i> <i>IEEE Access</i> , Volume 8, Pages 117413-117427</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 37 DOI: 10.1109/ACCESS.2020.3005054</p>	2020
<p>Effects of Compression and Silica Addition on the Dielectric Properties of Epoxy Composites</p> <p><i>Abraiz Khattak Kashif Imran Asghar Ali Zuhair Subhani Khan abasin ulasyar Muhammad Amin Adam Khan Azhar Ul Haq</i> <i>Arabian Journal for Science and Engineering</i>, Pages 1-10</p> <p>Impact Factor: 2.334 Quartile: 3 Citations: 5 DOI: https://doi.org/10.1007/s13369-020-04686-1</p>	2020
<p>Modeling and Fault Categorization in Thin- Film and Crystalline PV Arrays through Multilayer Neural Network Algorithm</p> <p><i>Azhar-ul-Haq Hatem F. Sindi Saba Gul Mariam Jalal</i> <i>IEEE Access</i> , Volume 8, Pages 102235-102255</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 32 DOI: 10.1109/ACCESS.2020.2996969</p>	2020
<p>Computation of Power Extraction from Photovoltaic Arrays under Various Fault Conditions</p> <p><i>Azhar Ul-Haq Rashid Alammari Atif Iqbal Mariam Jalal Saba Gul Rashid Alammari Atif Iqbal Mariam Jalal Saba Gul</i> <i>IEEE Access</i> , Volume 8, Pages 47619-47639</p> <p>Impact Factor: 3.367 Quartile: 2 Citations: 30 DOI: 10.1109/ACCESS.2020.2978621</p>	2020
<p>SRF based versatile control technique for DVR to mitigate voltage sag problem in distribution system</p> <p><i>Azhar-ul-Haq Essam A. Al-Ammar Ahsan Iqbal Mariam Jalal Almas Anjum Essam A. Al-Ammar Ahsan Iqbal Mariam Jalal Almas Anjum</i> <i>Ain Shams Engineering Journal</i>, Volume 11, Issue 1, Pages 99-108</p> <p>Impact Factor: 3.180 Quartile: 2 Citations: 43 DOI: 10.1016/j.asej.2019.09.001</p>	2020
<p>A Novel Convolutional Neural Network-Based Approach for Fault Classification in Photovoltaic Arrays</p> <p><i>Azhar -ul-Haq Farkhanda Aziz Yousef Mahmoud Mariam Jalal Farkhanda Aziz Shahzor Ahmad Yousef Mahmoud Mariam Jalal Usman Ali</i></p>	2020

IEEE Access , Volume 8, Pages 41889-41904

Impact Factor: 3.367 | Quartile: 2 | Citations: 208

DOI: 10.1109/ACCESS.2020.2977116

Comparative Analysis of Photovoltaic Faults and Performance Evaluation of Its Detection Techniques

2020

Azhar-ul-Haq Yousef Mahmoud Marium Jalal Muhammad Aamir Mati Ullah Ahsan Khalid Mehmood Ihsan Ullah Khalil

IEEE Access , Volume 8, Pages 26676-26698

Impact Factor: 3.367 | Quartile: 2 | Citations: 79

DOI: 10.1109/ACCESS.2020.2970531

A Unified Approach for Analysis of Faults in Different Configurations of PV Arrays and its Impact on Power Grid

2019

Saba Gul Marium Jalal Almas Anjum Azhar-ul-Haq Ihsan Ullah Khalil

Energies , Volume 13, Issue 1, Article Number 156

Impact Factor: 2.702 | Quartile: 3 | Citations: 27

DOI: <https://doi.org/10.3390/en13010156>

Cross-Border Power Trade and Grid Interconnection in SAARC Region: Technical Standardization and Power Pool Model

2019

Azhar-ul-Haq Muhammad Almas Anjum Mohammad Shahmeer Hassan Marium Jalal Shoaib Ahmad Ihsan Ullah Khalil Asad Waqar

IEEE Access , Volume 7 , Pages 178977-179001

Impact Factor: 3.745 | Quartile: 1 | Citations: 21

DOI: 10.1109/ACCESS.2019.2958407

Probabilistic modeling of electric vehicle charging pattern in a residential distribution network

2018

Azhar Ul-Haq Carlo Cecati Ehab El-Saadany

Electric Power Systems Research, Volume 157, Pages 126-133

Impact Factor: 3.022 | Quartile: 2 | Citations: 96

DOI: 10.1016/j.epsr.2017.12.005

Probabilistic Modeling of Electric Vehicle Charging Pattern Associated with Residential Load for Voltage Unbalance Assessment

2017

Azhar Ul-Haq Marium Azhar Yousef Mahmoud Aqib Perwaiz Essam A. Al-Ammar

Energies , Volume 10(9), Article Number 1351

Impact Factor: 2.676 | Quartile: 2 | Citations: 58

DOI: 10.3390/en10091351

Modeling of a Photovoltaic-Powered Electric Vehicle Charging Station with Vehicle-to-Grid Implementation

2017

Azhar Ul-Haq Carlo Cecati Essam A. Al-Ammar

Energies , Volume 10, Issue 1, Article Number: 4

Impact Factor: 2.676 | Quartile: 2 | Citations: 51

DOI: 10.3390/en10010004

Impact of Electric Vehicle Charging on Voltage Unbalance in an Urban Distribution Network

2015

Azhar Ul-Haq Carlo Cecati Kai Strunz Ehsan Abbasi

Intelligent Industrial Systems , Volume 1, Issue 1, Pages 51–60

Impact Factor: 0

DOI: 10.1007/s40903-015-0005-x

Hybrid Fuel Cell Power System for Electric Vehicles Application

2014

Azhar Ul-Haq Marium Jalal Chaudhry Farhat Saleem

Journal of Low Power Electronics, , Volume 10, Pages 65–71

Impact Factor: 0

DOI: <https://doi.org/10.1166/jolpe.2014.1296>

Conference Proceedings

Optimized PV System Integrated Microgrid Configuration

2023

Azhar Ul haq Saad Ahmed Ihsan Ullah Khalil Marium Jalal

2023 IEEE 20th International Conference on Smart Communities: Improving Quality of Life using AI, Robotics and IoT (HONET) res.country(233,)

Citations: N/A

DOI: 10.1109/HONET59747.2023.10374941

The Development and Evaluation of a High-Frequency Toroidal Transformer for Solid-State Transformer Applications † <i>Abdul Shakoor Azhar Ul Haq Taosif Iqbal</i> <i>Third International Conference on Advances in Mechanical Engineering 2023</i> , res.country(177,) Citations: N/A DOI: https://doi.org/10.3390/engproc2023045011	2023
Optimal Configuration of Microgrids with Increased Distributed Energy Resources <i>Azhar Ul Haq SAAD AHMAD MARIUM JALAL Ihsan Ullah Khalil</i> <i>19th International Conference on Sustainable Energy Technologies</i> , res.country(224,) Citations: N/A DOI: https://wsset.org/istanbul-2022/	2022
Integrating Electric Vehicle Charging into Microgrid Operation <i>Azhar Ul-Haq Aqib Perwaiz Saifullah Awan</i> <i>22nd Annual Energy, Utility & Environment Conference</i> , res.country(233,) Citations: N/A DOI: N/A	2019
Harmonic Distortion in Distribution System Due to Single-Phase Electric Vehicle Charging <i>aqib perwaiz marium azhar azhar ul haq saif ullah awan</i> <i>2nd International Conference on Green Energy and Applications (ICGEA)</i> , res.country(197,) Citations: N/A DOI: 10.1109/ICGEA.2018.8356277	2018
Harmonic Distortion in Distribution System Due to Single-Phase Electric Vehicle Charging <i>Dr. Azhar-ul-Haq Dr. Aqib Perwaiz Mariam Azhar Dr. Saif Ullah Awan</i> <i>IEEE 2nd International Conference on Green Energy and Applications (ICGEA)</i> , res.country(197,) Citations: N/A DOI: 10.1109/ICGEA.2018.8356277	2018
Computational Time Quantification of the Single Diode PV Models <i>Yousef Mahmoud Azhar-ul-Haq</i> <i>8th International Renewable Energy Congress (IREC)</i> , res.country(112,) Citations: N/A DOI: 10.1109/IREC.2017.7926022	2017
Energy Efficient and Low Complex Wireless Communication <i>Marium Jalal Chaudhry Sandeep Narayanan Marco Di Renzo Fabio Graziosi Azhar Ul-Haq</i> <i>2014 IEEE Global Conference on Signal and Information Processing (GlobalSIP)</i> , res.country(233,) Citations: N/A DOI: 10.1109/GlobalSIP.2014.7032116	2014
FPGA Based One-Cycle Control of Multilevel Cascaded H-Bridge Inverter <i>Azhar Ul-Haq Carlo Cecati Hassan Abdullah Khalid</i> <i>IECON 2014 - 40th Annual Conference of the IEEE Industrial Electronics Society</i> , res.country(233,) Citations: N/A DOI: 10.1109/IECON.2014.7049200	2014
On flatness-based control for series-connected VSC for voltage dip mitigation <i>Concettina Buccella Carlo Cecati Hassan Abdullah Khalid Azhar Ul-Haq</i> <i>2014 IEEE 23rd International Symposium on Industrial Electronics (ISIE)</i> , res.country(224,) Citations: N/A DOI: 10.1109/ISIE.2014.6865036	2014
A Smart Charging Station for EVs with Evaluation Different Energy Storage Technologies <i>Azhar Ul Haq Marium Jalal Chadhry Farhat Saleemi</i> <i>IEEE Conference on Clean Energy and Technology</i> , res.country(157,) Citations: N/A DOI: 10.1109/CEAT.2013.6775635	2013
Smart Charging Infrastructure for Electric Vehicles <i>Azhar Ul-Haq Concettina Buccella Carlo Cecati Hassan A. Khalid</i> <i>2013 International Conference on Clean Electrical Power (ICCEP)</i> , res.country(109,) Citations: N/A	2013

Book Chapters

Optimization Solutions for Demand Side Management and Monitoring	2021
<i>Zeeshan Ali Shah Azhar Ul-Haq Rashid Alammari Rashid Alammari Atif Iqbal Marium Jalal</i>	
In: <i>Book on AI and Machine Learning Paradigms for Health Monitoring System</i> , Chapter 1, Pages 3-43	
Citations: 3	
DOI: 10.1007/978-981-33-4412-9_1	

Intellectual Property

Copyrights

Patents

Industrial Designs

Isolated Multilevel Inverter	2024
Status: Filed	
Universal Dual Active Bridge Converter	2024
Status: Filed	

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