

AYESHA KHAN

 ayeshakhanme97@gmail.com |  LinkedIn |  Google Scholar |  Pakistan

EDUCATION

- MS Energy Systems Engineering** 09/2021 – 01/2024
National University of Sciences and Technology (NUST), H12, Islamabad
Overall Grade: 3.65 / 4.00
Thesis: Performance Evaluation of hybrid PV/PCM/TEC systems for improved energy efficiency
- BS Mechanical Engineering** 09/2016 – 08/2020
HITEC University, Taxila
Overall Grade: 3.10 / 4.00

EXPERIENCE

Research Associate/Assistant 02/2024 – Present
Centre for Advanced Studies in Energy, NUST Islamabad, Pakistan

- Assist in preparing timelines, tasks, and the purpose of the study for a project titled "*Energy Transition to Create Climate Resilience.*"
- Collaborate with 30+ stakeholders, including PV panel manufacturers, policymakers, investors, and solar energy industry experts, to gather insights through 10+ surveys and interviews, resulting in a comprehensive understanding of industry needs.
- Lead Researcher arranging 2 panel discussions under this study, extracting relevant technical and governmental strategies to tailor the business feasibility of local manufacturing.
- Coauthored 3 technical reports:
 - ✓ Indigenous Manufacturing of Solar PV Modules in Pakistan: Policy Gaps, Barriers, and Way Forward
 - ✓ In Depth Analysis of National Solar Energy Policy: Fostering PV Adoption and Indigenous PV Module Manufacturing.
 - ✓ Shaping the Future of PV Panel Manufacturing in Pakistan: An Approach towards Business Feasibility.

Freelancer 06/2021-Present
Self Employed, Upwork Inc.

Providing renewable energy technical writing services.

FELLOWSHIPS

- Fully Funded USAID Merit Scholarship for MS Degree (PKR 650,000) 09/2021 - 08/2023
- Funded Smart Crete CRC & Western Sydney University Postgraduate Research Scholarship 2024
(admission cancelled after one semester deferral due to visa delay and funding partner's urgent hiring needs)

PUBLICATIONS

Ayesha Khan, et al., *“Unlocking the potential of passive cooling: A comprehensive experimental study of PV/PCM/TEC hybrid system for enhanced photovoltaic performance”* Journal of Energy Storage, Volume 80, 2024, 110277, ISSN 2352-152X. [Published]

Ayesha Khan, et al., *“An Experimental Study on the Effect of Spatially Distributed Eutectic PCM for Passive Cooling of Photovoltaic Module”* Energies MDPI. [Under Review]

Sajjal Azeem, Nadia Shahzad, **Ayesha Khan**, et al., *“Development and Performance Evaluation of Barium Sulfate-Based Reflective Coatings for Albedo Enhancement in Bifacial Photovoltaic Cells”* Solar Energy, SEJ-D-25-01920. [Accepted]

Ayesha Khan, Shayan Umar, *“Performance Evaluation of Data Driven ML and Physics Informed Models for PCM Temperature Predictions in Photovoltaic Modules,”* Journal of Energy Storage, EST-D-25-08258. [Under Review]

Zoha Navaid, Nadia Shazad, **Ayesha Khan**, et al., *“Fabrication and Testing of D/M/D/M/D Multilayer Infrared Coating for PV Module Applications”* Material Letters. [Submitted]

Shayan Umar, Fahad Usman, **Ayesha Khan**, et al., *“Wind Resources Assessment and Evaluation along the Kati Bandar-Gharo Corridor, Pakistan”* International Journal of Green Energy. [With Editor]

Leadership & Organizing Roles

Appointed Student Secretary, *International Atmospheric Water Harvesting Association (IAWHA)* (2025–2027)

Lead Organizer, *1st & 2nd Collaborative Consultative Sessions on “Shaping the Future of PV Panel Manufacturing in Pakistan”*, USPCAS-E, NUST (2024)

Semifinalist & Presenter, *U.S. DOE Solar Decathlon Design Challenge (Virtual)* (2024)

Volunteer, *Community Service Program*, HITEC University (2019)

Member, *Engineering Project Management Team*, IEEE HITEC Student Branch (2018)

Workshops, Training & Courses

Participant, *Workspace Climate Action Peer Network*, Work on Climate (2025)

Completed, *BCG Group – Climate & Sustainability*, Forage – Virtual Job Simulation (2025)

Completed, *APA Group – Engineering for New Energy*, Forage – Virtual Job Simulation (2025)

Project Presenter, *Weather Forecasting using ML for Gurteen Meteorological Station* (2025)

Presenter, 2-Day Workshop on *Training of Equipment*, IEEE USPCAS-E, NUST (2024)

Participant, *Symposium on Youth Empowerment in Energy Transition*, USPCAS-E, NUST (2023)

Completed, *Exploring Renewable Energy Schemes*, Coursera (2023)

Attendee, 2-Day Workshop on *Fabrication and Characterization of Low-Cost, Highly Efficient Solar PV Cells*, USPCAS-E, NUST (2023)

Attendee, *International Conference on Pakistan Energy Sector Landscape: Challenges and Opportunities*, USPCAS-E, NUST (2023)

Attendee, 1-Day Workshop on *Advanced Solar PV Cells*, USPCAS-E, NUST (2022)

SKILLS

Equipment: DSC, DTC, XRD, FTIR, Contact angle measurement, TGA, and PV testing

Data Analysis: MATLAB, Python, ANSYS, RETScreen, and OriginPro

Soft Skills: Scientific Writing (Journal Publications, Conferences or Presentations)

LANGUAGES

◦ **English:** Proficient

◦ **IELTS (Academic):** Overall - 7.00 (TRF: 23PK506893KHAA015A)

◦ **Urdu:** Native

◦ **German:** Basic (A1.1)

RECOMMENDATIONS

Dr. Adeel Waqas, Professor

Principal/Dean at USPCAS-E, NUST, 44000-Islamabad, Pakistan

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Dr. Nadia Shahzad, Associate Professor

HOD Research at USPCAS-E, NUST, 44000-Islamabad, Pakistan

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