Dr. Wakeel Shah

Assistant Professor,
Dept. of Electronics Engineering
NED University Karachi.

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Electronic Engineer with a PhD in advanced photovoltaic technologies and strong expertise in third-generation solar cells. Holds BE and ME degrees in Electronic Engineering, with a solid research record in renewable energy and solar cell efficiency. Experienced in teaching electronics and computer science courses, mentoring students, and supervising academic projects. Skilled in research, interdisciplinary collaboration, and problem-solving, and committed to advancing sustainable energy through research, education, and innovation.

Academic Qualification

PhD	Electronic Engineering, NED University of Eng. & Tech., Karachi. (2023). Thesis Title: Fabrication and Characterization of Sensitized Photovoltaics" Supervisor: Dr. Sadia Muniza Faraz Co-Supervisors: Dr. Zahoor ul Hussain Awan
M.Eng.	Electronic Engineering (Micro System Design). NED University of Eng. & Tech., Karachi. (2017)
B.E	Electronic Engineering, Dawood College of Eng. & Tech., Karachi. (2012)

Honours and Awards

- Indigenous Scholarship for MS leading to PhD studies Awarded by Higher Education Commission of Pakistan
- Scholarship for the year 2022 Awarded by Sindh Higher Education Commission of Pakistan
- Nominated for Young Scientists Study Tour for United Kingdom, Awarded 2018 British council and HEC Pakistan

Work Experience

Mar. 2026 – Present	Assistant Professor, Dept. of Electronics Engineering NED University Karachi.
Mar. 2025 – Mar. 2026	Assistant Professor, Faculty of Engineering Sciences & Technology Iqra University Karachi.
Oct .2024 – Mar. 2025	Assistant Professor, Dept. of Avionics Engineering KIET.
Mar-2024 – Oct. 2024	Assistant Professor, Dept. of Computer Science. SIMT.
Jul.2014 – Feb. 2016	Lecturer, Dept. of Electrical Tech. SIMT
Dec. 2011 – Nov. 2012	Trainee Engineer, Textillers (Pvt) Limited.

Teaching Experience

Undergraduate Courses:

1. Microwave Engineering & Antennas
2. Digital Logic Design
3. Basic Electronics
4. Computer Networks
5. Algorithms and Data Structure
6. Operating System
7. Linear Circuit Analysis
8. Introduction to ICT
9. Programming Fundamental

Skills

- Semiconductor Device fabrication processes, deposition methods, thermal evaporation, annealing, cleaning, etching, growth of Nano-structures, etc.
- Electrical characterization (measurements) using Kiteley SCS-4200.
- Synthesis and fabrication of Organic Solar cells
- Programming in C++, MATLAB.
- Proficient in MS Office
- Fluent in Urdu, Pashto and English

Conference Presentations

2023 — Presented research work on "Co-Sensitized DSSC with Natural Dyes Extracted from Beetroot, Pomegranate and Cranberry" in the 2nd International Conference on Emerging Trends in Electronic and Telecommunication Engineering, 2023 (INTERACT-2023) N.E.D University of Engineering and Technology, Karachi-Pakistan

2023 — Presented research work on "Photovoltaic and Impedance Analysis of Dye-Sensitized Solar Cells with Counter Electrodes of Manganese Dioxide and Silver-Doped Manganese Dioxide in the 8th International Electrical Engineering Conference IEEC- 2023.

2020 — Presented research work on "Comparative study of impedance spectroscopy and photovoltaic properties of metallic and natural dye based dye sensitized solar cells," in the International Workshop on Nanomaterials for Energy Conversion, Emerging Photovoltaic and Optoelectronic Technologies (NEEPO-20)

Publications

2026 — **Wakeel Shah**, Sadia Muniza Faraz, Sana Arshad, Hadia Noor, Zahoor ul Hussain Awan, Muhammad Hassan Sayyad (2026). Hydrothermally Synthesized Ag-Doped Mno2 as Low Cost Electrode Material for Dye-Sensitized Solar Cells **(Under review)**

2025 — Rashid Ali Laghari, Salman Memon, Mohsin Ansari, **Wakeel Shah**, Muhammad Shakir, Abdullah Ayub Khan, Bilal Hussain, Asif Ali Laghari. (2025). Artificial Intelligence Based Contemporary Computational Paradigms for Intelligent Machining Processes: Review on Assessment, Progress and Recent Development. https://doi.org/10.1007/s11831-025-10478-3 **(IF=12.1)**

2025 **Shah, W**., Faraz, S. M., Awan, Z. H., & Sayyad, M. H. (2025). Surface modification strategies for enhanced performance and stability of perovskite solar cells. Micro and Nanostructures, 205, 208189. https://doi.org/10.1016/J.MICRNA.2025.208189 **(IF=2.7)**

2023 **W. Shah**, S. Muniza, and Z. Hussain, "Photovoltaic properties and impedance spectroscopy of dye sensitized solar cells co-sensitized by natural dyes," Physica B: Condensed Matter, vol. 654, no. January, p. 414716, 2023,https://doi.org/10.1016/j.physb.2023.414716 **(IF=2.88)**

2021 S. M. Faraz, H. R. Khan, W. Shah, and O. Nur, "Effect of annealing temperature on the interface state density of n - ZnO nanorod / p - Si heterojunction diodes," pp. 467–476, 2021. http://dx.doi.org/10.1515/phys-2021-0053 **(IF=1.95)**

2020 S. M. Faraz, **W. Shah**, N. U. H. Alvi, O. Nur, and Q. U. Wahab, "Electrical Characterization of Si/ZnO Nanorod PN Heterojunction Diode," Adv. Condens. Matter Phys., vol. 2020, 2020, https://doi.org/10.1155/2020/6410573 **(IF=1.5)**

2023 **W. Shah**, S. M. Faraz, S. Arshad, S. S. Haider, and M. H. Sayyad, "Co-Sensitized DSSC with Natural Dyes Extracted from Beetroot, Pomegranate and Cranberry †," pp. 2–7, 2023, https://doi.org/10.3390/engproc2023032013

2023 **W. Shah**, R. W. Khwaja, S. M. Faraz, Z. H. Awan, and M. H. Sayyad, "Photovoltaic and Impedance Analysis of Dye-Sensitized Solar Cells with Counter Electrodes of Manganese Dioxide and Silver-Doped Manganese Dioxide †," Engineering Proceeding, vol. 46, no. 1, pp. 1–5, 2023, https://doi.org/10.3390/engproc2023046031

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