

SABA JAVAID

D/O Muhammad Basharat Javaid
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A Academic qualification

Ph.D. from Department of Physics, University of Karachi, Pakistan.
MS from Department of Physics, University of Karachi, Pakistan.
M.Sc from Department of Physics, University of Karachi, Pakistan.
B.Sc (Honours) from Department of Physics, University of Karachi, Pakistan.
H.S.C.(Pre Eng.) from Khatoon-e- Pakistan degree girls College, Pakistan
S.S.C.(Science) from Oxford High School, Pakistan.

B Professional Experience

1. Associate Professor, Department of Physics, NED University of Engineering and Technology from 6th Oct. 2025 to date.
2. Assistant Professor, Department of Physics, NED University of Engineering and Technology from 23rd June 2023 to 5th- Oct. 2025.
3. Assistant Professor (On Lien period), Department of Physics, Federal Urdu University of Arts, Science and Technology from 1st August 2022 to 22nd June 2023.
4. Assistant Professor, Department of Physics, NED University of Engineering and Technology from 12th March 2018 to 31st July 2022.
4. Lecturer, Department of Physics, NED University of Engineering and Technology from 30th July 2010 to 11 March 2018.
5. Lecture, Department of Mathematics & Basic Sciences, NED University of Engineering and Technology from 1st July 2006 to 29th July 2010.

C Work Experience

1. Postgraduate coordinator
2. Undergraduate coordinator
3. Conduct theory and Practical classes for B.E, BS and MS program.
4. Class Advisor of First Year.
5. Member of Duty Society.
6. Focal Person Library 2019
7. Departmental Representative on Orientation Day.
8. Factotum in Semester Exams.
9. Prepare and modification of Lab work books.
10. Participation in Lab installation.
11. Member of Examination review committee.
12. Member of Ph.D., MS and BS program committee.
13. Prepare Exam Panel for department of Physics.
14. Prepare time table for Semester Exams.
15. Prepare teaching load for department of Physics and Engineering departments.
16. Committee member for the selection of visiting and cooperative teachers for BS program.
17. Expert on board of studies of department of Physics of Sir Syed University of Engineering & Technology.

D Research Activities:

(i) Final Year Project:

Year	Title	Status
2025-2026	Multifunctional coating on high performance solar cell	In progress
2025-2026	Synthesis and characterization of biodegradable inks for printing on food packaging	In progress
2024-2025	Visualization of neutron star through 3-D simulation	Completed
2024-2025	Development of an interactive black hole 3-D model in unity as an educational tool	Completed
2023-24	Green synthesis of silver nanoparticles by using Neem extract for water purification.	Completed
2022	The verification of monitor unit of 3D conformal radiotherapy for various cancer.	Completed
2021	(i)Comparison of 80 cm and 100 cm SAD cobalt-60 teletherapy unit dosimetric data. (ii)Comparison between doses of patients received at Co-60 and LINAC in 3-dimensional conformal radiotherapy.	Completed
2020	Study of maximum usable frequency (MUF) Over Pakistan.	Completed
2019	Day today variability of solar quiet sq (H,D,Z) components of Earth's magnetic field during deep solar minimum at EIA crest region.	Completed
2018	Determination of ionospheric slab thickness of F2 layer.	Completed

(ii) Masters Project:

Year	Title	Status
2024-2025	Optimization of linagliptin thin film for optoelectronic devices.	Completed
2024	(i)A computational approach to determine transition probabilities & radiative lifetime for Helium using weakest bound electron potential model theory & quantum defect theory. (ii) Development of anti-dust as well as super Hydrophobic coatings for solar cell.	Completed
2023-24	Dosimetry of leakage radiation through lead apron cracks	Completed
2023	Prediction of High Energy levels for Rydberg Atom based on WBEPm using computational methods.	Completed
2023	(i)Exploratory data analysis of solar flux from top of the atmosphere (ii)Ab initio calculations of ionization energy of Boron ions (iii)Ab initio calculations of ionization energy of Beryllium ions	Completed
2022	(i)Quantum computing with cat states using circuit QED (ii)The commissioning and validation of Monaco treatment planning system and evaluating the beam matching accuracy of Twin Elekta VersaHD linear accelerators (iii)Performance evaluation of dose calibrator using various radioisotopes to assess and optimize radiation dose exposure in nuclear medicine imaging.	Completed

2021	Impact of technical factors affecting accuracy of SUV measurements in FDG PET/CT.	Completed
2020	Analysis of spectra of Ba and Mg by quantum defect theory	Completed

E Professional Skills

1. MATLAB
2. Python
3. Endnote
4. Microsoft Office word & Excel
5. Microsoft office power point.

F Awards and Honours

1. Recognized as an NED Approved PhD Supervisor in the discipline of Physical Sciences effected from 18-06-25
2. Honored to be judge in Sindh Provincial Science Fair 2015 organized by Intel Pakistan Corporation from 27th to 29th October, 2015.
3. Awarded Merit certificate for First class, third position in B.Sc, (Honours), 2000.

G Certificate Courses /work shop / Trainings / Seminars

1. Attended seminar on Modernizing Quality Assurance: Leveraging Digital Tools for Academic Excellence held at NED University of Engineering & Technology on 25th June **2025**.
2. Attended seminar on HEC policies for HEIs held at NED University of Engineering & Technology on 29th Jan. **2025**.
3. Attended a workshop on **Leadership and Team Development** held at NED University of Engineering & Technology on 9th Jan. **2025**.
4. Attended a training on **Effective Ph.D. Supervision** from 7th to 10th Oct. **2024** held at NED University of Engineering & Technology
5. Attended virtual tour of CERN held at NED University of Engineering & Technology on 13th Nov. **2024**
6. Attended a workshop on Leadership and Team management held at NED University of Engineering & Technology on 16 May **2024**.
7. Attended training on **An Awareness about University-wide Policies/ Systems** held at NED University of Engineering & Technology on 20 Feb. **2024**.
8. Attended workshop on Pre-Conference workshop 7th international day of medical Physics held at at NED University of Engineering & Technology on 15th Nov. **2024**.
9. Attended training on **Teaching Case Studies** held at NED University of Engineering & Technology on 26 June **2023**.
10. Emerald Guide to Getting published online workshop by Emerald Publishing held on 15 April **2020**.
11. Online training on 'How to select right Journal' by Emerald Publishing held on 1 Nov. **2020**.
12. Online training on structuring a publishing paper' by Emerald Publishing held on 9th Nov. **2020**.
13. Road show on New R & D Frame work of HEC held on 15 Nov. **2019** at NEDUET
14. Understanding of **Harassment Rules and Prevention** held on 25th Nov. 2019 at NEDUET
15. NED Women conference 2019 held on 20 Dec. **2019** at NEDUET

16. Attended two days training program on **Quality Assurance in Education** organized by Quality Enhancement Cell, NED University of Engineering & Technology on May 17-18, **2017**.
17. Attended two days Workshop on **Dye sensitized Solar Cell** held at NED University of Engineering & Technology on March 3rd -4th, **2016**.
18. Attended three days Workshop on **LATEX** organized by Department of Physics, University of Karachi from 28th to 30th Dec. **2015**.
19. Attended the ACSE short course on **Publication Ethics, Peer Review and Metrics** by Elizebeth Wager (Publications Consultant, Sideview, UK, Ex Chairperson COPE, Member of Ethics Committee for BMJ & WAME) held at Metropolitan Palace, Dubai UAE on August 13-14th, **2015**.
20. Attended the ACSE short course on **Developing a Successful Journal** by Pippa Smart (Research communication and publishing consultant, UK) held at Metropolitan Palace, Dubai UAE on August 13-14th, 2015.
21. Attended the ACSE short course on **C21st Marketing for Scholarly Journals** by Rachel Maund (Marketability, a UK-based publishing consultancy. London) held at Metropolitan Palace, Dubai UAE on August 13-14th, 2015.
22. Attended eight days **HEC Indigenous On campus Training on Organizational Interdepartmental communication** organized by Quality Enhancement Cell, NED University of Engineering & Technology from 23rd Feb-4th March, 2015
23. Attended one day seminar on **English for Academic and Occupational Purposes** organized by Department of Humanities, NED University of Engineering & Technology in collaboration with HEC ELTR project on June 12, 2008.
24. Attended training on **duties and responsibilities of Class Advisor** held at NED University of Engineering & Technology, 2014.
25. Attended training on **IT Tools for Academic profession** held at NED University of Engineering & Technology.
26. Attended training on **Research methodology** held at NED University of Engineering & Technology.
27. Attended training on **Library Facilities** held at NED University of Engineering & Technology.
28. Attended virtual seminar on **CMS experiments at CERN** for Pakistani Students held at NED university of Engineering & Technology.

H Publications

1. Pato, Abdul Hameed, Imran Ali Chandio, **Saba Javaid**, Iftikhar Ahmed Channa, Aamna Balouch, Basheer A. Sharmari, Tasneem Pervez et al. "Titania@ ITO-Grown Nanoflakes: A Promising Heterocatalyst for 4-Nitrophenol Reduction and Synergetic Profile Against Bacterial Growth." *Applied Organometallic Chemistry* 39, no. 6 (2025): e70195.
2. Kousar Shaheen, Roohi Zafar, Saba Javaid, and Ahmed Ali Rajput. "Analytical estimate of effective charge and ground-state energies of two to five electron sequences up to atomic number 20 utilizing the variational method." *Beni-Suef University Journal of Basic and Applied Sciences* 13, no. 1 (2024): 92.
3. Zaheer Uddin, Muhammad Kaleem, Saba Javaid, and Roohi Zafar. "Transition Probabilities, Oscillator and Line Strengths in Sc XIX." *East European Journal of Physics* 2 (2024): 111-120.
4. Mirza Salman Baig, Ambreen Insaf, Saba Javaid, and Zaheer Uddin. "Geostatistical Model Development and Assessment of Tidal Stream Energy Resources: A Case Study of Indus Delta, Pakistan." *Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences* 61, no. 4 (2024).

5. Misha Shafi, **Saba Javaid**, Roohi Zafar, Ahmed Ali Rajput, Muhammad Mustaqeem Zahid, and Muhammad Daniyal. "New Numerical Approach to Calculate Microstates of Equivalent and Non-Equivalent Electrons." *Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences* 60, no. 4 (2023): 29-33.
6. Nafees Hasan, **Saba Javaid**, Ahmed Ali Rajput, M. Daniyal, M. Mustaqeem Zahid, and Fatima Ejaz. "A Python program to draw energy level diagram and to calculate quantum defects, the high lying Rydberg level." *Revista Mexicana de Física E* 20, no. 1 Jan-Jun (2023): 010203-1.
7. Ambreen Insaf, M.Salman Biag , **Saba Javaid**, S., Abbas, U., & Zaheer Uddin, Tidal Range Energy Resource Estimation of Khor Kalamat using Geostatistical Modeling: Tidal Energy Resource Estimation: A case study of Khor Kalamat. *Proceedings of the Pakistan Academy of Sciences: A. Physical and Computational Sciences*, (2022) 59(4), 45-53.
8. Raza, Salman, Mehfooz Ali Abro, **Saba Javaid**, and Roohi Zafar. "Spectroscopic properties of lithium like ions: Prospective elements for quantum computation." *Mehran University Research Journal of Engineering & Technology* 41, no. 3 (2022): 199-203.
9. Kousar shahen, Roohi Zafar, and **Saba Javaid**, "Python program to generate spherical harmonic." *International Journal of Advanced Trends in Computer Science and Engineering* 10.3 (2021).
10. Siddique, Hira, Afnan Tahir, Iffat Gul, Bisma binte Waris, Muhammad Ayyaz Ameen, Madeeha Talha, Muneeza Salman Ali, Alisha Ansari, and **Saba Javaid**. "Estimation of MUF (3000) F2 using Earth-ionosphere geometry for Karachi and Multan, Pakistan." *Advances in Space Research* 68, no. 11 (2021): 4646-4657.
11. Roohi Zafar, **Saba Javaid**, and Zaheer Uddin, 'Wavefunctions for ground state $4f^3 6s^2$ configuration of praseodymium to calculate energy of fine levels and other spectroscopic quantities' *Journal of Physics Communications* 4.3 (2020): 035003.
12. **Saba Javaid**, Roohi Zafar, and Zaheer Uddin, 'Theoretical analysis of $4f^2 5d^2$ configuration of singly ionized praseodymium' *Journal of Physics Communications* 3, no. 9 (2019): 095012.
13. Babar, I. M., **Saba Javaid**, and Shabana Rizvi. "Transport Properties of Chalcopyrite (CuFeS₂) in a Wide Range of Temperatures." *Journal of Electronic Materials* 2215-2218, (2019).
14. Shabana Rizvi, **Saba Javaid**, Adeel Tahir, Ibrahim Babar, S. Dabir H.Rizvi, " Characterization of Dolomite, Pyrite, and Chalco pyrite mineral rocks of Pakistan", *Science International (Lahore)*, 22(1), 59-62, (2010).

I Conference/Seminar Attended

1. Joint Secretary, 2nd International Conference on Technology Driven Climate Action-2025 held on Jan 16th and 17th 2025 at NED University of Engineering & Technology.
2. World Biodiversity Day Awareness Seminar, held on 22 May 2025 at NED University of Engineering & Technology.
3. Symposium on geomagnetic field observations held on 19 April 2024 at NED University of Engineering & Technology.
4. CPE seminar title 5TH Annual National Conference on (IDMP) held on 19th Nov. 2022 at Ziauddin University.

5. Theoretical Analysis of (i) $4f36s2$ (ii) $4f25d26s$ (iii) $4f25p6s2$ Configurations of Praseodymium (Pr-I), 1st International Conference on Applied Physics & Engineering (ICAPE-2021) held on 16-17 September 2021 at NED University of Engineering & Technology.
6. Study of Transport Properties of Pyrite, Saba Javaid, Poster Presentation, KPS 1st National Conference on Multi- Disciplinary Topics in Physics held at Department of Physics, University of Karachi on 12th-13 Feb. 2016.
7. International Conference of Energy and Sustainability organized by Mechanical Engineering Department, NED university of Engineering & Technology, 2013.
8. National Conference on Physics and The World of Today organized by Department of Physics, University of Karachi, held on Dec. 16-17, 2009.