



# DR. ADNAN SAEED

PHYSICIST / RESEARCHER

## CONTACT



+92-333-6460564



phyadi@gmail.com



adnan.saeed@gcwus.edu.pk

## SKILLS

### Technical and Research Skills

- Plasma material processing
- XRD analysis
- SEM operation
- TEM analysis
- Active Screen Cage use
- Spectroscopy techniques
- Tribological investigation
- Vacuum system operation
- Nanomaterials research

### Academic and Teaching Skills:

- Lecturing
- Lab design
- Student mentoring
- Curriculum development
- Coordination
- Examination management
- Student supervision
- Lab management

## EDUCATION

**Doctor of Philosophy (PhD) in Physics | Gomal University, DI Khan, Pakistan | 2010-2015**

Experimental Plasma Physics with emphasis in Plasma based material processing and spectroscopy

**Master of Science (MSc.) in Physics | Gomal University, DI Khan, Pakistan | 2004-2006**

**Bachelor of Science (BSc.) in Physics and Mathematics | Gomal University, DI Khan, Pakistan | 2002-2004**

## HONORS AND AWARDS

**Won Fully Funded Indigenous Scholarship from Government of Pakistan (PhD program) for session 2008- 2013**

## CAREER SUMMARY

Experienced experimental plasma physicist with a Ph.D. in Physics, specializing in Plasma-based material processing and spectroscopy. Conducted groundbreaking research on tribological properties of metals via glow discharge plasma, optimizing plasma systems for industrial applications. Proficient in X-ray diffractometry, electron microscopy, and active screen cage plasma technology. Secured prestigious indigenous scholarships and participated in specialized workshops. Currently, an accomplished Associate Professor at GC Women University, Sialkot, actively shaping curricula, supervising research, and fulfilling various departmental roles

## EXPERIENCE

### GC Women University | Sialkot, Pakistan

**Associate Professor (Physics) | March 20, 2023 -Present**

#### Teaching and Research

- Conducted high-quality lectures, seminars, and laboratory sessions to undergraduate and graduate students in the field of Physics.
- Mentored and advised students in their academic pursuits, research projects, and career development.
- Pursue and published original research in reputable peer-reviewed journals, contributing to the advancement of the field.
- Collaborated with colleagues and students on research projects, fostering an environment of academic engagement and innovation.

#### Leadership and Administration

- Acted as the Convener of the Physics Society, organizing events, seminars, and workshops to promote interest and awareness in physics among students and faculty.
- Served as a member of the Board of Studies, contributing to the development and revision of the Physics curriculum to ensure its relevance and quality.
- Participated as a member of the MS/PhD curriculum activity team, guiding the design and enhancement of postgraduate programs in Physics.
- Assumed responsibility as the In-charge of the Modern Physics Lab, overseeing its maintenance, equipment, and student training.
- Coordinated departmental examinations, ensuring fair and efficient assessment processes and maintaining academic integrity

### GC Women University | Sialkot, Pakistan

**Assistant Professor (Physics) | 2016 to March 20, 2023**

#### Instruction and Research

- Delivered high-caliber lectures, seminars, and hands-on sessions to both undergraduate and graduate students within the realm of Physics.
- Provided guidance and support to students in their academic pursuits, research ventures, and professional growth.
- Produced and disseminated original research findings through esteemed peer-reviewed publications, contributing significantly to the advancement of the discipline.
- Engaged in collaborative research initiatives with peers and students, nurturing an atmosphere of scholarly involvement and inventive thinking.

#### Educational Leadership and Administration

- Led the Physics Society as its Convener, orchestrating diverse events, seminars, and workshops to cultivate enthusiasm and knowledge about physics among both students and faculty members.
- Contributed actively as a member of the Board of Studies, aiding in the evolution and refinement of the Physics curriculum to ensure its contemporary relevance and academic excellence.
- Played a pivotal role in the MS/PhD curriculum activity team, guiding the formulation and enhancement of postgraduate Physics programs.
- Assumed responsibility for overseeing the upkeep, equipment, and student training within the Modern Physics Lab.
- Skillfully orchestrated departmental examinations, ensuring an equitable and streamlined assessment process while upholding academic honesty

### GOVT. COLLEGE OF TECNALOGY | D.I.Khan , Pakistan

**Lecturer (Physics) | SEP 2006 – MAR 2007**

- Delivered engaging lectures on fundamental physics concepts to undergraduate students.
- Designed and conducted hands-on laboratory sessions, fostering practical understanding.
- Mentored students individually, guiding research projects and academic pursuits.
- Contributed to curriculum development, integrating modern teaching methodologies.
- Collaborated with colleagues on academic committees, actively participating in departmental initiatives





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## RESEARCH INTEREST

- Investigation of tribological properties of different metals using glow discharge plasma.
- Study their components and structural investigations.
- Optimization of different plasma systems using spectroscopy.
- Implementation of plasma processed materials in industry, specifically in surgical

## TECHNICAL AND RESEARCH EXPERTISE

- Proficiency in **plasma-based material processing techniques** involving metals, alloys, and polymers, utilizing Pulsed DC systems, Capacitively Coupled Plasma (CCP), and MaPE ICP plasma reactors.
- Skilled operation of an **X-ray diffractometer (XRD)**, specifically the **X'Pert PRO MRD model** from **PANalytical**, Netherlands. This tool employs Cu Ka radiation to accurately identify distinct phases within materials.
- Competence in utilizing a **Scanning Electron Microscope (SEM)**, specifically the **JEOL JSM-6700F** model, operating at 5 kV for the purpose of analyzing surface morphology.
- Proficient operation of a Transmission **Electron Microscope (TEM)**, specifically the **JEM-2100F** model, enabling thorough analysis of electron diffraction patterns.
- Successful installation and operation of an Active **Screen Cage Plasma Chamber** at Quaid-i-Azam University in Islamabad.

## WORKSHOPS AND TRAININGS

- **National Training Workshop on Nanomaterials** at National Institute for Biotechnology and Genetic Engineering (November 7-9, 2016)
- **One month training on vacuum** at NINVEST (December 9-11, 2016)
- **Workshop on Entrepreneurship and Professional Grooming** at GC Women University (November 14-18, 2016)

## PROJECTS

- **Start-Up Research Grant Program**, Low temperature plasma jet for biomedical application, approved and completed from Higher Education Commission, Pakistan

## STUDENTS UNDER SUPERVISION

- MS students supervised: 18 Successfully defended their thesis
- Currently MS students under supervision: 5
- Currently PhD student under supervision: 3

## RESEARCH PUBLICATIONS

1. **A. Saeed**, A. Khan, F. Jan, M. Abrar, M. Khalid, M. Zakaullah, Validity of "sputtering and re-condensation" model in active screen cage plasma nitriding process, Applied Surface Science, 273 (2013) 173-178. Impact factor 6.155
2. **Adnan Saeed**, Abdul Waheed Khan, Faiq Jan, Muhammad Waqar, Muhammad Abrar, Ali Hussain, Zaka-ul-Islam Mujahid, and Muhammad Zakaullah, "Pulsed dc Discharge in the Presence of Active Screen for Nitriding of High Carbon Steel," Materials Research 17 (2014). Impact factor 0.6
3. **A. Saeed**, A.W. Khan, M. Shafiq, F. Jan, M. Abrar, M. Zaka-ul-Islam, M. Zakaullah, Investigation of 50Hz pulsed DC Nitrogen Plasma with Active Screen Cage by Trace Rare Gas Optical Emission Spectroscopy, Plasma Science and Technology, Vol.16, No.4, Apr. 2014. Impact factor 1.193
4. **A.Saeed**, A.W.Khan, F.Jan, H.U.Shah, M.Abrar, M. Khalid, M.Zakaullah, Optimization study of pulsed dc Nitrogen-Hydrogen Plasma in the presence of Active Screen Cage, Plasma Sci Technol, 16 (5), 460-464(2014).. Impact factor 1.193
5. **A. Saeed**, M. Abrar, A.W. Khan, F. Jan, H.U.Shah, B.S. Khan, Z.-U.-I. Mujahid, M. Zakaullah, "Optical emission spectroscopy of 50 Hz pulsed dc nitrogen-hydrogen plasma in the presence of active screen cage, Radiation Effects and Defects in Solids, VOL.171, NOS.5-6, 384-397 (2016). Impact factor 0.636
6. **M. Abrar**, A. Qayyum, A. Gilani, A. Khan, **A. Saeed**, S. Naseer, M. Zakaullah, Effect of helium mixing on excitation temperature and nitrogen dissociation in inductively coupled plasma, Current Applied Physics 13 (2013) 969-974. Impact factor 2.010
7. **F. Jan**, A. Khan, **A. Saeed**, M. Zakaullah, A Report on H mode in Magnetic Pole Enhanced Inductively Coupled Nitrogen Plasmas, Contributions to Plasma Physics, 53, No. 6 P 492-502 (2013).. Impact Factor 1.324
8. **A. Khan**, F. Jan, **A. Saeed**, M. Zaka-ul-Islam, M. Abrar, N. Khattak, M. Zakaullah, Comparative study of electron temperature and excitation temperature in a magnetic pole enhanced inductively coupled argon plasma, Current Applied Physics 13 (2013) 1241-1246 Impact Factor 2.010





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## RESEARCH PUBLICATIONS (CONT.)

9. M. Abrar, A. Khan, **A. Saeed**, S. Naseer, A. Qayyum, M. Zakaulah, Nitrogen dissociation and parametric study in a magnetic pole enhanced inductively coupled Ar-N<sub>2</sub> plasma (MaPE-ICP), Eur. Phys. J. Appl. Phys, 62 (2013) 30801 Impact Factor 0.800
  10. M. Abrar, A. Khan, **A. Saeed**, S. Naseer, M. Zakaulah, Pressure dependence of the nitrogen dissociation fraction and concentration of active species in Magnetic Pole Enhanced Inductively Coupled Plasma, JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH, 72 (2013) 242-247. Impact Factor 0.6
  11. F. Jan, A. Khan, **A. Saeed**, M. Zakaulah, Comparative Study of Plasma Parameters in Magnetic Pole Enhanced Inductively Coupled Argon Plasmas, Plasma Science and Technology, 15 (2013) 329. Impact Factor 1.193
  12. M. Abrar, G. Farwa, S. Naseer, **A. Saeed**, A. Khan, Z. Iqbal, S. Hussain, M. Zakaulah, Enhancement of the electrical properties of carbon nanotubes with Ar/N<sub>2</sub> plasma treatment, Current Applied Physics 13 (2013) 567e575. Impact Factor 1.193
  13. F. Jan, A. Khan, **A. Saeed**, M. Zakaulah, Investigation of magnetic-pole-enhanced inductively coupled nitrogen-argon plasmas, Journal of Applied Physics, 112 (2012) 063305-063307. Impact Factor 2.328
  14. F. Jan, A. Khan, **A. Saeed**, M. Zakaulah, Mode transition in magnetic pole enhanced inductively coupled argon plasmas, The European Physical Journal D, 66 (2012) 1-7. Impact Factor 1.331
  15. A. Hussain, R. Ahmad, T. Hussain, Z.A. Umar, N. Khalid, **A. Saeed**, Effect Of Carbon Ions Emitted From Plasma. 51 (2011) 13-29
  16. Tahir Mehmood, K. M. Wu , Aiman Mukhtar , Babar S. Khan , **Adnan Saeed** , Humaira Latif , Zahida Parveen , Syeda Ruqaya Kazmi. Electrochemically fabricated Fe-Ni alloy nanowires and their structural characterization. International Journal of Materials Research 2017; 108: E; 1-5. Impact Factor 0.687
  17. Babar Shahzad Khan, **Adnan Saeed**, Sardar Sikandar hayat, Aiman Mukhtar, Tahir Mehmood. Mechanism for the Formation of Cuprous Oxide Nanowires in AAO template by Electrodeposition. International Journal of Electrochemical Science 2017; 12:890 – 897. Impact Factor 1.284
  18. Samia Naeem , Tahir Mehmood , K. M. Wu , Babar Shahzad Khan, Abdul Majid Sindhu, Khurram Siraj, Aiman Mukhtar, **Adnan Saeed** and Saira Riaz, "Laser Surface Hardening of Gun Metal Alloys" Materials 2019, 12, 2632. Impact Factor 2.728
  19. S AFSHEEN, U FATIMA, T IQBAL, M ABRAR, S MUHAMMAD, **A SAEED**, M ISA, M F MALIK and S SHAMAS, "Influence of cold plasma treatment on insecticidal properties of wheat seeds against red flour beetles", Plasma Science and Technology, 21 (2019) 085506 (6pp). Impact factor 1.193
  20. Syed Muhammad Raza Shah Naqvi, Taseer Muhammad, Hyun Min Kim, Tariq Mahmood, **Adnan Saeed**, Babar Shahzad Khan. Numerical treatment for Darcy-Forchheimer flow of nanofluid due to a rotating disk with slip effects. Canadian Journal of Physics Published on the web 11 December 2018. <https://doi.org/10.1139/cjp-2018-0553> Impact factor 0.724
  21. Aberah Tahir, **Adnan Saeed**, Iqra Ramzan, Sardar Sikandar Hayat, Waqar Ahmad, Samia Naeem, Marina Afzal, Aiman Mukhtar, Tahir Mehmood & Babar Shahzad Khan. Mechanism for the formation of magnetic iron oxide nanostructures by Ficus carica dried fruit extract using green synthesis method. Applied nanoscience 11 (2021) 1857-1865. Impact Factor 3.198
  22. Faiqa Barkat,, Marina Afzal, Babar Shahzad Khan, **Adnan Saeed**, Mahwish Bashir, Aiman Mukhtar, Tahir Mehmood and Kaiming Wu. Formation Mechanism and Lattice Parameter Investigation for Copper-Substituted Cobalt Ferrites from Zingiber officinale and Elettaria cardamom Seed Extracts Using Biogenic Route. Materials 15 (2022) 4374. Impact Factor 3.623
- Note: For all articles (as co-author) equally contributed to every part of the papers.
23. Iqra Ramzan, Mahwish Bashir, **Adnan Saeed**, Babar Shahzad Khan, Mohammed Rafi Shaik, Merajuddin Khan, Baji Shaik and Mujeeb Khan. Evaluation of Photocatalytic, Antioxidant, and Antibacterial Efficacy of Almond Oil Capped Zinc Oxide Nanoparticles. Materials 2023, 16, 5011. Impact Factor 3.623
  24. Summeiya Akram, Mahwish Bashir, Farzana Majid, Maida Ayub, Babar Shahzad Khan, **Adnan Saeed**, Mohammed Rafi Shaik, Mujeeb Khan, Baji Shaik. Stabilization of zirconia nanoparticles by collagen protein and calcium carbonate extracted from eggshell and its biodegradation, radical scavenging and mineralization activity. Arabian Journal of Chemistry Volume 16, Issue 10, October 2023, 105135. Impact Factor 6.212