

Dr. Naveed Afzal

Director/Associate Professor,
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Personal Details

Father's Name	Muhammad Afzal
CNIC No.	35202-2692509-5
Domicile	Lahore, Punjab
Marital Status	Married
Present Position	Director/Associate Professor
Organization:	Government College University, Lahore, Pakistan
Department	Centre for Advanced Studies in Physics (CASP)
Teaching/Research Experience	25 Years (at GC University, Lahore, Pakistan)

Biography:

Dr. Naveed Afzal is presently Director and Associate Professor at the Centre for Advanced Studies in Physics (CASP), Government College University (GCU), Lahore, with 25 years of teaching and research experience at the GCU. He earned his PhD in semiconductor physics from Universiti Sains Malaysia (USM), receiving the Best PhD Thesis Award from the USM in the Sciences category. He secured 1st positions in both M.Sc. and M.Phil. (Physics) at GCU, Lahore securing Gold Medal and Roll of Honor. Dr. Afzal is a recipient of the prestigious TWAS-USM Fellowship by the World Academy of Sciences (TWAS), Italy in 2013. His achievements also include the Research Productivity Award by Pakistan Council for Science and Technology (PCST) in 2013 and the Sanggar Sanjung Award by the USM, Malaysia in 2015. He has published over

95 research papers in impact-factor international journals and has supervised over 30 M.Phil. Theses. Dr. Afzal has reviewed more than 120 research papers for various reputed international journals (published by Elsevier, Springer, Wiley, IOP, World Scientific etc.). He is the co-author of Physics Books of Federal Board (class XI and XII) published by Qureshi Brothers Publishers in 2025. His research focuses on semiconductor thin films for optoelectronic devices, surface modification of materials for advanced applications using ion beam, and fabrication of triboelectric nanogenerators for energy harvesting application.

Academic Qualifications

1. Ph.D. (Physics)

Universiti Sains Malaysia, Feb. 2017

Thesis Title: Fabrication and Characterizations of Magnetron Co-Sputtered

InAlN Films for Photodetectors Application, (2014-2017)

Research Field: Semiconductor Fabrication (Thin films)

**Distinction: Best PhD Thesis Award-2018 by Universiti Sains Malaysia
In “Sciences” Category**

2. M. Phil. (Physics)

Government College University, Lahore, Pakistan, Jan. 2005

Thesis Title: Irradiation Effects on Microstructure and Tensile Behavior of
Stainless Steel, CGPA: 3.40/4, Session: (2002-2004)

Research Field: Materials Science

Distinction: 1st Position

3. M.Sc. (Physics)

Government College University, Lahore, Pakistan, Nov. 2000

GPA: 3.96/4, Session: 1998-2000, Marks: 1108/1300

Distinction: 1st Position, Gold Medal/Roll of Honor

4. B.Sc.

University of the Punjab, Lahore, Pakistan, Sept. 1998

Main Subjects: Physics, Math A, Math B courses

1st Division

Employment Record

Designation	Organization	Period		Responsibilities
		From	To	
Director/Associate Professor	Centre for Advanced Studies in Physics (CASP), GC University, Lahore, Pakistan	30-03-2023	to date	Administrative Work/Teaching/Research
Associate Professor (BS-20)	Centre for Advanced Studies in Physics (CASP), GC University, Lahore, Pakistan	09-08-2017	to date	Teaching/supervision of M.Phil./PhD students
Assistant Professor (BS-19)	Centre for Advanced Studies in Physics (CASP) GC University, Lahore, Pakistan	02-07-2007	08-08-2017	Teaching BS and F.Sc. classes/ Research Work in field of Materials Physics
Assistant Professor (BS-18)	Centre for Advanced Studies in Physics (CASP) GC University, Lahore, Pakistan	04-10-2006	01-07-2007	Teaching BS and F.Sc. classes/ Research Work in field of Materials Physics
Lecturer/ Research Officer (BS-17)	Centre for Advanced Studies in Physics (CASP), GC University, Lahore, Pakistan	06-09-2002	03-10-2006	Teaching / Research Work in field of Materials Science
Research Assistant (BS-16)	Centre for Advanced Studies in Physics (CASP), GC University, Lahore, Pakistan	27-11-2000	05-09-2002	Research Work in Materials science

Honors/Awards/Distinctions

1. Awarded Gold Medal and Roll of Honor for securing 1st position in M.Sc. (Physics) by GC Lahore, Pakistan (Session 1998-2000)
2. Secured 1st Position in M-Phil Physics in GC University Lahore, Pakistan (Session 2002-2004)
3. Secured 1st Divisions through the academic career
4. Awarded “Research Productivity Award” (RPA) by Pakistan Council for Scientific and Industrial Research (PCST) in 2013
5. Won competitive international travel grants for participation in ICTP/IAEA Workshops at ICTP, Trieste, Italy (Nov. 2009, April, 2010, March, 2011, Nov. 2011, Oct. 2012)
6. Awarded TWAS-USM Scholarship by the World Academy of Sciences, Italy, for PhD studies at Universiti Sains Malaysia (Feb. 2013)
7. Awarded Sanggar Sajung Research Publication Award by University Sains Malaysia (Nov. 2017)
8. Awarded Certificate for Second Position in Poster Presentation in 43rd International Nathiagali Summer College, July, 2018
9. Best PhD Thesis-USM Award-2018 in “Sciences Category” by Universiti Sains Malaysia (Dec. 2018)
10. HEC Approved Supervisor

Languages:

1. English – (S, R, W) with excellent skills
2. Urdu – (S, R, W) with excellent skills
3. Bahasa, Malaysia – with basics

Administrative Experience:

- Director, Centre for Advanced Studies in Physics (CASP) at GC University, Lahore, Pakistan from 30-03-2023 till present
- Managed the office affairs of Director, Centre for Advanced Studies in Physics (CASP) GC University, Lahore, Pakistan from 03-09-2019 to 26-11-2019
- Member, Academic Council, GC University, Lahore (2023 to date)
- Member Boards of Faculty of Mathematical and Physical Sciences , GC University, Lahore, Pakistan (2021-to date)
- Member Boards of Faculty of Life and Chemical Sciences, GC University, Lahore, Pakistan (2018 to 2021)
- Member and Convener, Board of Studies (CASP), GC University, Lahore, Pakistan
- Member, Institute of Physics (IOP), Committee, GC University, Lahore, Pakistan (2017-to date)
- Incharge, Materials Research Group of CASP, GC University, Lahore, Pakistan (2002 to date)
- Focal Person from GCU for the MOU signed between GCU and Inonu University, Turkey (May, 2024 to date)
- Member Institutional Biosafety Committee, GC University Lahore (August 2024 to date)
- Member, Selection Committee for the HEC funded project title “Centre for Advanced Studies in Physics at Government College University Lahore.

Research Projects as PI / Co-PI:

1. Completed **ORIC, GCU, Lahore funded** Research Project, Deposition of thin films by magnetron sputtering” of **Rs. 300,000** as Principal Investigator (2019)
2. Completed **HEC funded** SRGP Research Project titled “Irradiation of metallic materials by energetic ions” of **Rs. 488,000** as Co-Principal Investigator (2019)
3. Completed **ORIC, GCU, Lahore funded** Research Project titled “Establishing Precise Vacuum Measurement Facility for Laser and Ion Deflection Projects” of cost **Rs. 440,000** as Principal Investigator (2007)

4. Completed **GCU, Lahore funded** Research Project titled Measurement of Electrical Conductivity of Insulator Material using Femto Ampere meter and /four Probe Apparatus of cost **Rs. 300,000** as Principal Investigator (2010)
5. Successfully **coordinated with Project Director** in the execution and completion the project titled “Establishment of High Tech Central Resource Laboratories at GC University Lahore” of cost **Rs. 39.373 Million** funded by Higher Education Commission Pakistan (2003-2006).

Research Interest:

1. Thin films deposition and their applications
2. Metal Oxides/Nitrides Semiconductors
3. Metal-Semiconductor-Metal Photodetectors
4. Heterojunction Photodetectors
5. Ion Implantation/Doping in thin films
6. Radiation effects on metallic materials
7. Mechanical properties of materials
8. Age-hardening of different materials
9. Electrochemical testing of materials
10. Triboelectric Nanogenerators

Courses Taught

1. Physics of Materials (M.Phil. Applied Physics)
2. Semiconductor Physics (M.Phil. Applied Physics)
3. Electromagnetic theory (BS Physics)
4. Materials Science (BS Physics)
5. Electricity and Magnetism (BS Physics)
6. Waves and Oscillations (BS Physics)
7. Modern Physics (BS Physics)
8. Electronics (M.Sc. Telecom)
9. Circuit Analysis (B.Sc. Electrical Engg.)
10. Electromagnetic theory (M.Sc. Telecom)
11. Applied Physics (BS Computer Sci.)
12. Intermediate Physics (Part 1 & 2)

International Travel Grants

Sr. No.	Purpose of Grant	Funding Agency	Date
1.	To participate in the School and Training Course on Ionizing Radiations, their Diagnostics and Applications at ICTP, Trieste, Italy	International Centre for Theoretical Physics (ICTP), Trieste, Italy	8 th -12 th Oct. 2012
2.	To participate in Joint ICTP/IAEA workshop on Radiation Damage Mechanisms in Nuclear Materials at ICTP, Trieste, Italy	International Centre for Theoretical Physics (ICTP), Trieste, Italy	14 th -18 th Nov. 2011
3.	To participate in Joint ICTP/IAEA workshop on “Radiation Resistant Polymers at ICTP, Trieste, Italy	International Centre for Theoretical Physics (ICTP), Trieste, Italy	14 th -18 th March 2011
4.	To participate in Joint ICTP/IAEA advanced workshop on “Basic Understanding of Radiation Damage Mechanisms in Materials	International Centre for Theoretical Physics (ICTP), Trieste, Italy	12 th -23 rd April, 2010
5.	To visit Malaysia for PhD studies	The world academy of sciences (TWAS), Italy	Dec. 2012

International Workshops Attended:

1. Participated and gave a poster presentation in the Joint ICTP/IAEA Workshop on “Effects of Mechanical Properties and Mechanisms Governing the Irradiation-induced Embrittlement of Pressure Vessel Steels” 23rd November to 27th November 2009 at ICTP, Trieste, **Italy**.
2. Participated in the Joint ICTP/IAEA advanced workshop on “Basic Understanding of Radiation Damage Mechanisms in Materials” 12th-23rd April 2010, held at ICTP, Trieste, **Italy**.
3. Participated in and completed the Joint ICTP/IAEA workshop on “Radiation Resistant Polymers” 14th March to 18th March, 2011, held at ICTP, Trieste, **Italy**
4. Participated in and completed the Joint ICTP/IAEA workshop on “Radiation Damage Mechanisms in Nuclear Materials” 14th November to 18th November, 2011, held at ICTP, Trieste, **Italy**
5. Participated in and completed the “School and Training Course on Ionizing Radiations, their Diagnostics and Applications” 8th Oct. to 12th Oct. 2012, held at ICTP, Trieste, **Italy**
6. Participated in the workshop on Occupation health and safety on 14th June, 2014, held at

Universiti Sains **Malaysia**

International Training Courses Attended:

1. Attended a training course on “Structural and Surface Analysis” at USians Infotech **Malaysia**, 13th-14th, March, 2014
2. Attended a training course on Occupational Safety and Health at Universiti Sains **Malaysia**, 14th June, 2014
3. Attended a training course on Atomic Force Microscope at Shimadzu Asia Pacific, **Singapore**, from 06th to 8th October 2008
4. Attended a training course on Transmission Electron Microscope at JEOL, Tokyo, **Japan**, 14th-18th November 2005

Teachers Training Course

1. Attended an In-Service Teachers’ Training Course held at GC University, Lahore, **Pakistan**, September 2005 to May, 2006.

Conferences Attended

1. Participated as **Invited Speaker** in the 3rd International Conference on Recent Trends in Physics at FC College Lahore (9th-11th April, 2025)
2. Participated as **Invited Speaker** in International School on Physics and Allied Disciplines (ISPAD)-2025 at National Centre for Physics (NCP)Islamabad (14th-18th April, 2025)
3. Participated as **Invited Speaker** in 6th International Workshop on Ion Beam Application (IBA), at National Centre for Physics (NCP), Islamabad (04-06th December, 2024)
4. Participated as **Invited Speaker** in 1st International Conference on “Emerging Trends in Physics” held at University of Management Technology, Lahore (7th-8th March, 2024)
5. Participated as **Invited Speaker** in 2nd International Conference on Trends in Materials Science and Nanotechnology” held at FC College University, Lahore (4th-5th March 2024)
6. Participated as **Invited Speaker** in 4th International Conference on “Advances in Materials Science” held at University of Education, Lahore, 29th-30th November, 2023
7. Participated as **Invited Speaker** in 5th International Workshop on Ion Beam Applications held at National Centre for Physics, Islamabad (11th-13th Sept. 2023)

8. Attended and Participated as **Invited Speaker** in 48th International Nathiaghali Summer College on “Semiconductor Devices” at Nathiagali (10th-14th July, 2023)
9. Participated as **Invited Speaker** in 2nd international conference on Emerging Trends in Physics held at Lahore College for Women University (20th-22nd March, 2023)
10. Participated as **Invited Speaker** in 4th International Workshop on Ion Beam Application held at National Centre for Physics, Islamabad (03rd-5th Oct. 2022)
11. Participated as **Invited Speaker** in International Conference on Solid State Physics (ICSSP)-21, at Punjab University, Lahore (20th-23rd Feb. 2022)
12. Attended “2nd International Conference on Advances in Materials Science” held online at University of Education, Lahore (5-6th October, 2021)
13. Attended 45th International Nathiaghali Summer College on “Advances in Nanomaterials and Semiconductor Devices and Applications” held Online at National Centre for Physics (5-10th July, 2021)
14. Attended “ International School on Physics and Allied Disciplines” jointly organized by NCP and ICTP online at National Centre for Physics, Islamabad (9-11th March, 2021)
15. Attended 45th International Nathiaghali Summer College on “ Applications of Syncrotron Radiations” held Online at National Centre for Physics (20-21st July, 2020)
16. Participated as **Invited Speaker** in International Conference on Solid State Physics (ICSSP)-19, at Punjab University, Lahore (Dec. 8-12. 2019)
17. Participated as **Invited Speaker** at 3rd International Workshop on Ion Beam Applications and Defects in Nano materials, at NCP, Islamabad (5th-7th August, 2019)
18. Participated in 44th International Nathiaghali Summer College on “Nano materials and Semiconductor Devices ” held at National Centre for Physics, Islamabad, Pakistan (15th-20th July, 2019)
19. Participated in 16th National symposium on Frontiers in Physics as **member organizing Committee** (29th Jan to 31st Jan. 2019)
20. Participated as **Poster Presenter** in 43rd International Nathiaghali Summer College on “Applications of Synchrotron Light Sources” held at National Centre for Physics, Islamabad, Pakistan,16th-21st July, 2018
21. Participated in the 10th International Scientific Spring jointly organized by the International Centre for Theoretical Physics (ICTP), Italy and National Centre for Physics, Islamabad, Pakistan (16th-20th March, 2018)

22. Participated in 38th International Nathiaghali Summer College on “Accelerators, their Applications and new acceleration concepts” held at Nathiaghali, Pakistan (24th -29th June, 2013)
23. Participated in 15th National symposium on Frontiers in Physics as member organizing Committee (29th Jan to 31st Jan. 2018)
24. Participated in 37th International Nathiaghali Summer College, Accelerator Physics and its Applications, held at Nathiaghali, Pakistan (2nd -07th July 2012)
25. Participated in 35th International Nathiaghali Summer College, Quantum Condensed Matter Systems, held at Nathiaghali, Pakistan (28th June-4th July, 2010)
26. Participated in 32nd International Nathiaghali Summer College, Synchrotron Radiation and its Applications, held at Nathiaghali, Pakistan (2nd -07th July, 2007)
27. Participated in the 5th International Scientific Spring jointly organized by the International Centre for Theoretical Physics (ICTP), Italy and National Centre for Physics, Islamabad, Pakistan (11th-15th March, 2013)
28. Participated in the 4th International Scientific Spring jointly organized by the International Centre for Theoretical Physics (ICTP), Italy and National Centre for Physics, Islamabad, Pakistan (05th-09th March, 2012)
29. Participated in 12th National Symposium on Frontiers in Physics, held at GC University, Lahore (02nd-4th Feb. 2011)
30. Attended One day workshop on “Laser Ablation and its Applications” at GC University, Lahore (19th May, 2011)
31. Participated in Two days’ Workshop on Crystallography at Department of Chemistry, GC University Lahore (6th-7th June, 2011)
32. Participated in the 2nd National Conference on Radiation, Particles and Matter, held at GC University, Lahore (26-28th October, 2010)
33. Participated in National Conference on Radiations, Particles & Matter held at GC University, Lahore, Pakistan (22nd-24th December, 2009)
34. Attended a National seminar on “Activities around Pelletron Accelerator” held at GC University, Lahore on 8th April, 2009
35. Participated in 2nd PIP International Conference held at UET Lahore, Pakistan (February, 23-26th 2009)
36. Participated and gave poster presentation in 11th National Symposium on Frontiers in Physics at GCU, Lahore, Pakistan in January 2009

37. Participated and presented a research paper in 3rd International Conference on “Frontiers of Advanced Engineering Materials (FAEM) held at PC Lahore, Pakistan 15-17th December, 2008
38. Attended a National Conference on Commercializing research and development in Industry-Role of Industry University Linkages &Expo arranged by LCCI on 30th Oct. 2008 at LCC, Lahore, Pakistan
39. Participated and presented a research paper in 2nd International Conference on “Frontiers of Advanced Engineering Materials (FAEM) held at PCSIR Lahore in 4th - 6th December 2006
40. Participated and gave poster presentation in 1st PIP International Conference held at UET Lahore in March 13-16th 2006
41. Attended lectures on solid state nuclear track detectors and their applications at GC University, Lahore (25029th Jan. 2005)
42. 10th National Symposium on Frontiers in Physics at GCU in January 2005
43. Participated and presented a research paper in the 1st International Conference on Frontiers of Advanced Engineering Materials (FAEM) held at Lahore, September, 2004.
44. 9th National Symposium on Frontiers in Physics at GCU, Lahore in January 2003.

M-Phil Thesis Supervised:

1. Thesis Title: Study of Mechanical Properties of Artificially Aged Al-2024 Alloy (Session 2010-2012)
2. Thesis Title: Stress-Induced Phase Characteristics of Thermally Treated Ni-Ti Shape Memory Alloy (Session 2012-2014)
3. Thesis Title: Structural and mechanical properties of proton irradiated Zr at different energies (Session 2012-2014)
4. Thesis Title: Ion implantation effects on magnetron sputtered ZnO thin films (Session: 2017-2019)
5. Thesis Title: Structural and surface characterizations of ion implanted Magnesium alloy AZ91D, (Session: 2017-2019)
6. Thesis Title: Heat treatment effects on structural and mechanical properties of Aluminum alloy 6061, (Session: 2017-2019)

7. Thesis Title: Proton irradiation effects on structural, morphological and mechanical properties of Zircaloy-4 (Session 2016-2018)
8. Thesis Title: Carbon ions irradiation effects on structural and surface properties of Aluminium (Session 2016-2018)
9. Thesis Title: Copper ion implantation effects on structural, electric and optical properties of ZnO film deposited by DC magnetron sputtering (Session 2016-2018)
10. Thesis Title: Fabrication and characterizations of Molybdenum Oxide thin films (Session 2016-2018)
11. Thesis Title: Study of structural and optical properties of post-deposition annealed MoO₃ film for ultraviolet photodetector applications. (Session 2017-2019)
12. Thesis Title: Fabrication and characterization of metal-semiconductor-metal-photodetector based on magnetron sputtered Copper Oxide film (Session 2017-2019)
13. Thesis Title: Study of annealing effect on photodetection characteristics of Copper Oxide Film (Session 2018-2020)
14. Thesis Title: Influence of copper irradiation energy on the surface properties of Mg-Al-Zn alloy, (Session 2018-2020)
15. Thesis Title: Effect of artificial aging on electrochemical corrosion and hardening of Al-7075 (Session 2018-2020)
16. Thesis Title: Impact of Carbon ion dose on different properties of Aluminum alloy 5052 (Session 2019-2021)
17. Thesis Title: Influence of nitrogen ions dose on various properties of Copper Oxide film deposited on silicon substrate (Session 2019-2021)
18. Thesis Title: Fabrication of Carbon nanotubes based sensor for radiation detection (Session 2019-2021)
19. Thesis Title: Impact of annealing temperature on properties of Nickel Oxide thin film for optoelectronic application, (Session 2019-2021)
20. Thesis Title: Study of Carbon ion implantation effects on Nickel Oxide film prepared by reactive sputtering, (Session 2020-2022)
21. Thesis Title: Study of post-deposition annealing effect on RF sputtered Zinc Sulfide thin film properties, (Session 2020-2022)
22. Thesis Title: Influence of deposition temperature on physical properties of RF sputtered NiO

film on glass substrate (Session 2020-2022)

23. Thesis Title: Study of annealing effect on properties of TiO₂ thin film prepared by DC Sputtering (Session 2021-2023)
24. Thesis Title: Silicon ions implantation effects on hardness and corrosion rate of Magnesium alloy AZ31 (Session 2021-2023)
25. Thesis Title “Effect of co-doping on different properties of ZnO thin films prepared by Spray Pyrolysis technique (Session 2022-2024)
26. Thesis Title: Characterization of ions implanted Zinc Sulphide thin films prepared by RF Sputtering (Session 2022-2024)
27. Thesis Title: Surface hardness and corrosion properties of ions implanted Ti6Al4V alloy (Session 2022-2024)
28. Thesis Title: Annealing effect on structural and surface features of AZ31 Mg alloy (Session 2022-2024)
29. Thesis Title: Tailoring the physical properties of TiO₂ thin film on glass substrate through Argon ion implantation (Session 2023-2025)
30. Thesis Title: Carbon ion irradiation effects on ZnO film for UV photodetection (Session 2023-2025)
31. Thesis Title: Impact of annealing environment on properties of RF sputtered Molybdenum Oxide thin film

PhD Thesis Co-Supervised

Sr. No.	Name of the Student	Thesis Title	Completion Date
1.	Muhammad Imran	Synthesis and characterization of M:ZnO thin films on various substrates	17 th March, 2021

PhD Thesis Supervision (In Progress)

1.	Ayesha Masood	Study of ions irradiation induced changes in metal oxide thin films grown by magnetron sputtering	Thesis Submitted
2.	Rabia		In Progress

Manuscripts Reviewed for International Journals

- Applied Surface Science
- Journal of Energy Storage
- Materials Letters
- Materials Science in Semiconductor Processing
- Journal of Alloys and Compounds
- Journal of Magnetism and Magnetic Materials
- Journal of Non-crystalline solids
- Optics and Laser Technology
- Optik
- Nuclear Instruments and Methods in Physics, Research Section B
- Physica Status Solidi B
- Materials Research Express
- Applied Physics A
- Surfaces and Interfaces
- Thin Solid Film
- Transactions on Electron Devices
- Microelectronics International

Co-Author of Books

Federal Board, Text Book of Physics for XI and XII Published by “Qurashi Brothers” in 2025

Role in Institutional Development

Sr. No.	Nature of Assignment	Duration
1.	<ul style="list-style-type: none">Successfully coordinated in the execution, management and completion of the project titled “Establishment of High Tech Central Resource Laboratories at GC University Lahore” of cost Rs. 39.373 Million funded by Higher Education Commission Pakistan. This project included the purchase of high tech equipment such Transmission Electron Microscope with samples preparation and EDS, Met allograph with camera, image analysis system, software and other accessories, Gas Chromatograph/Mass Spectrometer, Acoustic Emission Testing Equipment, and Universal Testing Machine (150 kN) along with thermostatic chamber.Played a key role in the Rejuvenation of CASP during 2004-2010. This includes the establishment of Materials Research Laboratories and Pelletron Accelerator Research Laboratory at CASP. He served as member technical committee to procured Scientific Research Equipments of Rs. 200 million under the HEC funded projects.	2004-2010

Research Publications in Refereed International Journals

1. Satam Alotibi, Salah, T. Hameed, Amani, M. Alansi, Aref, A.A. Qahtan, Taoreed O. Owolabi, Naveed Afzal, Mohsin Rafique, Talal F. Qahtan, Surface modification of polyimide films via low-energy argon ion irradiation: A comprehensive XPS analysis, Radiation Physics and Chemistry, Vol. 238 (2026) 113134
2. Amna Ahmad, Naveed Afzal Mohsin Rafique, Turab Ali, Javaid Hussain and Khubaib Iqbal, Low-energy Ar + implantation in the Ti6Al4V alloy for enhanced electrochemical performance in simulated body fluids, Radiation Effects and Defects in Solids (2025) DOI: 10.1080/10420150.2025.2553276

3. Bashar M. Salih, Asmiet Ramizy, Ethar Yahya Salih, Naveed Afzal, M. H. Eisa, Nazir Mustapha, Preparation and Simulation of AlGaN/CdS/Si Double Heterojunction for Solar Cell Application, *Plasmonics* (2025) DOI: 10.1007/s11468-025-03063-8
4. Aijaz Ali Soomro, Sabah M Mohammad, Naveed Afzal, Mundzir Abdullah, Muhammad Ramzan, Md Rumon Shahrier, Abubakar Abdulla Sifawa, Morphological and optical tuning of β -Ga₂O₃ NRs/p-GaN/sapphire via precursor concentration for high-performance MSM UV photodetector application, *Optical Materials* Vol. 162 (2025) 116927
5. Abdellah Kaiba, Amani M Alansi, Ali Oubelkacem, Ilyas Chabri, Salah T Hameed, Naveed Afzal, Mohsin Rafique, Talal F Qahtan, Sunlight-Driven Synthesis of TiO₂/(MA)₂SnCl₄ Nanocomposite Films for Enhanced Photocatalytic Degradation of Organic Pollutants, *Catalysts*, Vol. 15 (2025) 214
6. Javaria Asad, Naveed Afzal, Mohsin Rafique, Muhammad Rizwan, Muhammad Waseem Yasin, Annealing Effect on DC Magnetron Sputtered TiO₂ Film: Theoretical and Experimental Investigations, *Arabian Journal for Science and Engineering* Vol. 50 (2025) 571-581
7. Muhammad Arslan Ayub, Naveed Afzal, Mohsin Rafique, Sameen Aslam, Physical Characteristics of Low-Dose Nitrogen Ions-Implanted Copper Oxide Thin Film on n-Si (100) Substrate, *Arabian Journal for Science and Engineering* Vol. 50 (2025) 467-475
8. Satam Alotibi, Talal F Qahtan, Amani M Alansi, Taoreed O Owolabi, Salah T Hameed, Naveed Afzal, Sadia Bilal, Dina Salah, Sustainable and Cost-Efficient Production of Micro-Patterned Reduced Graphene Oxide on Graphene Oxide Films, *Coatings* Vol. 14 (2024) 534
9. Babar Latif, Mohsin Rafique, Naveed Afzal, SM Haider Ejaz, Ameeq Farooq, Effects of different ions irradiation on the electrochemical corrosion and hardness of pure iron, *Radiation Effects and Defects in Solids* Vol. 179 (2024) 642-661
10. M Rafique, U Iqbal, Naveed Afzal, R Mukhtar, S Bashir, K Mahmood, A Farooq, Influence of Gas Environment on Structure, Morphology and Corrosion Rate of Laser Irradiated Vanadium, *Lasers in Manufacturing and Materials Processing* Vol. 11 (2024) 853-867
11. Anas A. Ahmed, Talal F Qahtan, Naveed Afzal, Marzaini Rashid, Lakshmi Narayana Thalluri, Mohamed Sultan Mohamed Ali, Low-pressure air plasma-treated polytetrafluoroethylene surface for efficient triboelectric nanogenerator, *Materials Today Sustainability*, Vol. 21 (2023) 100330
12. Rehman Iftikhar, Mohsin Rafique, MZ Butt, Naveed Afzal, Shazia Bashir, Farooq Bashir, Khaliq Mehmood, Ameeq Farooq, Structural, morphological, mechanical and electrochemical

properties of 532 nm Nd: YAG laser-irradiated vanadium at high fluence, *Applied Physics A* Vol. 129 (2023) 269

13. Ayesha Masood, Naveed Afzal, Anas A Ahmed, Talal F Qahtan, Mohsin Rafique, R Ahmad, M Imran, "Structural, surface and optical investigations of Cu⁺ implanted NiO film prepared by reactive sputtering" *Ceramics International*, Vol. 49 (2023) 4435-4448
14. Mohsin Rafique, Naveed Afzal, Rabia, Izhar Younas, Shazia Bashir, M. Imran, Khaliq Mahmood, Ameeq Farooq, Surface and structural modifications of Tungsten by laser irradiation for enhanced electrochemical corrosion resistance, *Journal of Materials Engineering and Performance*, Vol. 31 (2022) 1904-1913
15. Rabia Mukhtar, Naveed Afzal, Mohsin Rafique, Ameeq Farooq, "Improvement in Hardness and Electrochemical Corrosion Resistance of Al-7075 alloy by Artificial Aging" *Surface Review and Letters*, Vol. 29 (2022) 2250038-1-10
16. Saleh K Alsaee, Naser M Ahmed, Elham Mzwd, Ahmad Fairuz Omar, Al Aljameel, Naveed Afzal, Ibrahim Abdul Razak, Suhana Arshad, "pH sensor based on AuNPs/ITO membrane as extended gate field-effect transistor" *Applied Physics B*, Vol. 128 (2022) 3-1-7
17. Maha Tariq, Naveed Afzal, Mohsin Rafique, Enhanced photodetection performance of sputtered cupric oxide thin film through annealing process, *Optical and Quantum Electronics*, Vol. 53 (2021) 685-1-16
18. M. Hamza Akhtar, Naveed Afzal, Mohsin Rafique, Ameeq Farooq, Ali Awais, M. Adeel Aleem, Kaab Bin Tayyab, Study of hardness and corrosion rate of copper ions irradiated Mg-Al-Zn alloy in Ringer Lactate solution, *Surface Review and Letters*, Vol. 28 (2021) 2150054-1-8
19. Mohsin Rafique, Atika Khan, Naveed Afzal, A. Farooq, M. Imran, Electrochemical corrosion study of helium ions implanted Zircaloy-4 in chloride media" "Nuclear Engineering and Technology, Vol. 53 (2021) 927-931
20. Ammara Ahmad, Naveed Afzal, Mohsin Rafique, Structural and Mechanical Response of Artificially Aged Aluminum Alloy 6061, *Strength of Materials*, Vol. 53 (2021) 502-510
21. Sadoon Farrukh, Naveed Afzal, Mohsin Rafique, A.A. Ahmad, M.A. Raza, Fabrication and characterization of MSM photodetector based on DC sputtered CuO film, *Journal of Optoelectronics and Advanced Materials*, Vol. 11-12 (2021) 530-537
22. M. Maqsood, Mohsin Rafique, M.Z. Butt, Naveed Afzal, M. Usman Tanveer, M Imran, Ameeq Farooq, "Impact of carbon ion implantation on the crystal structure, surface morphology, vickers hardness and electrochemical corrosion of Zirconium, *Journal of Materials Engineering and Performance*, Vol. 30 (2021) 4604-4618

23. Naser M Ahmed, Fayroz A Sabah, Naif H Al-Hardan, Munirah A Almessiere, Sabah M Mohammad, Way Foong Lim, Maadh Jumaah, AKM Shafiqul Islam, Z Hassan, Hock Jin Quah, Naveed Afzal, Semiconductor science and technology, Vol. 36 (2021) 045027-1-15

24. N.M. Ahmed, N.H. Sulaiman, M.F. Abdullah, A.S. Najm, Naveed Afzal, Mohsin Rafique, Improvement in structural, optical and electrical properties of ITO film through AlN and HfO₂ buffer layers, Surface Review and Letters Vol. 28 (2021) 2150094-1-9

25. H. Ahmad, Naveed Afzal, Mohsin Rafique, Anas A Ahmed, R. Ahmad, Z Khaliq, "Post deposition annealed MoO₃ film based high performance MSM UV photodetector fabricated on Si (100), Ceramics International, Vol. 46 (2020) 20477-20487

26. Sabah M. Mohammad, Z. Hassan, N.M. Abd-Alghafour, A. Mohamed, Naser M. Ahmed, R. Abdalrheem, F.K. Yam, Naveed Afzal, Ultraviolet electroluminescence from flowers-like nZnO nanorods/p-GaN lightemitting diode fabricated by modified chemical bath deposition, Journal of Luminescence Vol. 226 (2020) 117510-1-7

27. M Imran, R Ahmad, Naveed Afzal, Mohsin Rafique, M Akram Raza, Zubair Khaliq, Structural, optical and electrical characteristics of silver ions irradiated ZnO film on flexible substrate, Superlattices and Microstructures, Vol. 144 (2020) 106586

28. Hammad Raza, Naveed Afzal, Moshin Rafique, M. Imran, "Study of structural, and morphological properties of annealed MoO₃ films on different substrates" Surface review and Letters, Vol. 27 (2020) 1950150

29. R. Ahson, R. Ahmad, Naveed Afzal, F.E. Mubarik, "Effect of Structure Modifying Agents on the Structural, Morphological and Optical features of Hydrothermally Grown ZnO" Journal of Nanoscience and Nanotechnology Vol. 20 (2020) 3265-3273

30. Nabeel Mohammed, Ghassan Adnan Naeem, A.S Ibraheam; Naveed Afzal, Sabah M. Mohammad; Rasim Farraj Muslim, "Fabrication and characterization of ethanol gas sensor based on hydrothermally grown V₂O₅ nanorods", Optik Vol. 222 (2020) 165441

31. Rabia Younas, Naveed Afzal, Mohsin Rafique, M. Imran, Murtaza Saleem, R. Ahmad, "Nickel ion implantation effects on DC magnetron sputtered ZnO film prepared on Si (100)" Ceramics International, Vol. 45 (2019) 15547-15555

32. Atika Khan, Mohsin Rafique, Naveed Afzal, Zubair Khaliq, R. Ahmad, "Structural characterization of Zircaloy-4 subjected to helium ions irradiation of variable fluence" Nuclear Materials and Energy Vol. 20 (2019) 100690

33. Zahid Ali, Naveed Afzal, Mohsin Rafique, “Effect of Ar: O₂ ratio on reactively magnetron sputtered ZnO film’s properties”, Materials Research Express Vol. 6 (2019) 166419,

34. M. Imran, R. Ahmad, Naveed Afzal, Mohsin Rafique, “Copper ion implantation effects in ZnO film deposited on flexible polymer by DC magnetron sputtering” Vacuum Vol. 165 (2019) 72-80

35. Faiza Riaz, Naveed Afzal, Mohsin Rafique, Ammeq Freooq, S.M.H Ejaz, Kaab Bin Tayyab, R. Ahmad, “Improvement in electrochemical corrosion resistance of Mg-Al-Zn alloy by 250 keV carbon ions irradiation, Materials Research Express Vol. 6 (2019) 126452

36. M. Imran, R. Ahmad, Naveed Afzal, Mohsin Rafique, “Modification in ZnO film properties by 250 keV cobalt implantation” Materials Research Express Vol. 6 (2019) 126428

37. N. Abd-Alghafour, G. Naeem, N. Ahmad, Naveed Afzal, “Thermal Evaporation V₂O₅ thin film for Extended Gate Field Effect Transistor pH sensor” Materials Research Express Vol. 6 (2019) 125423

38. R. Abdalrheem, F.K. Yam, A.R. Ibrahim¹, H.S. Lim, K.P. Beh, Anas A. Ahmed, Ammar Oglat, K.M. Chahrour, O.F. Farhat, Naveed Afzal, S.M. Mohammad, M.Z. Jafri, Improvement in photodetection characteristics of graphene/p-silicon heterojunction photodetector by PMMA/graphene cladding layer, Journal of Electronic Materials Vol. 48 (2019) 4064-4072

39. Faiza Anjum, Riaz Ahmad, Naveed Afzal, “Influence of sputtering power and Ar–N₂ flow on the structure and optical properties of indium nitride films prepared by magnetron sputtering” Radiation Effects and Defects in Solids, Vol. 174 (2019) 828-837

40. N. Abd-Alghafour, S.M. Mohammed, N.M. Ahmed; Z. Hassan; M.A. Almessiere, Naveed Afzal, M. Bououdina, “Optimization of precursor concentration for the fabrication of V₂O₅ nanorods and their MSM photodetector onto silicon substrate” Journal of Electronic Materials Vol. 48 (2019) 5640-5649

41. R. Abdalrheem, H. San Lim, K.P. Beh, A. Oglat, S.M. Mohammad, Naveed Afzal, K. Chahrour, F.K. Yam, “Effect of Ni and Cu catalysts on graphene growth under different ethanol flow rates using atmospheric pressure chemical vapor deposition” Materials Research Express Vol. 6 (2019) 085627

42. Naveed Afzal, Mohsin Rafique, Wajeeha Javaid, R. Ahmad, Ameeq Farooq, Murtaza Saleem, Zubair Khaliq, “Influence of carbon ion implantation energy on aluminum carbide precipitation and electrochemical corrosion resistance of aluminum”, Nuclear Inst. and Methods in Physics Research, B, Vol. 436 (2018) 84-91

43. Naveed Afzal, Mohsin Rafique, Asma Abbasi, Murtaza Saleem, Ji-Min Lee, R. Ahmad “Impact of variable energy hydrogen ions on structural and mechanical properties of Zircaloy-4, *Physica Scripta*, Vol. 93 (2018) 115303-1-8

44. F. Anjum, R. Ahmad, Naveed Afzal, G. Murtaza, “Characterization of InN films prepared using magnetron sputtering at variable power” *Materials Letters*, Vol. 219 (2018) 23-28

45. Anas A Ahmed, Mutharasu Devarajan, M.E. Raypah, Naveed Afzal, “Growth and characterizations of NiO films on aluminum susbtrate as thermal interface material for LED application” *Surface & Coatings Technology*, Vol. 350 (2018) 462-468

46. Mohsin Rafique, Naveed Afzal, Ammeq Farooq, R. Ahmad, “Effects of carbon ions irradiation on the electrochemical response of AISI 304 stainless steel” *Mater. Res. Express* Vol. 5 (2018) 106501-1-10

47. R. Ahmad, M. Shafiq Anjum, Naveed Afzal, Mohsin Rafique, A. Hussnain, T. Hussain, “Structural properties and surface topography of MgO films prepared on Si (100) by pulsed DC magnetron sputtering” *Mater. Res. Express* Vol. 5 (2018) 096412-1-9

48. U. Bashir, Z. Hassan, Naser M Ahmed, Naveed Afzal, “Structural, Electrical and Optical Properties of Sputtered-Grown InN Films on ZnO Buffered Silicon, Bulk GaN, Quartz and Sapphire Substrates” *Journal of Electronic Materials*, Vol. 47 (2018) 4875-4881

49. S.M. Mohammad, N.M. Abd-Alghafour, R. Talib, Z. Hassan, N. Ahmed, A. Abuelsamen, Naveed Afzal, “Influence of growth temperature and duration on different properties of ultra-long ZnO nanorods grown by modified chemical bath deposition method” *Mater. Res. Express* Vol. 5 (2018) 095020-1-8

50. Anas A Ahmed, Mutharasu Devarajan, Naveed Afzal, “Fabrication and Characterization of High Performance MSM UV Photodetector Based on NiO Film” *Sensors and Actuators A. Physical*, Vol. 262 (2017) 78-86

51. Anas A Ahmed, Mutharasu Devarajan, Naveed Afzal, “Effects of substrate temperature on the degradation of RF sputtered NiO properties” *Materials Science in Semiconductor Processing*, Vol. 63 (2017) 137-141

52. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Deposition and characterization of magnetron co-sputtered InAlN film at different Ar:N₂ gas flow ratios, *Surface Review and Letters*, Vol. 24 (2017) 1750027-1-9

53. Anas A Ahmed, Mutharasu Devarajan, Naveed Afzal, Growth of RF sputtered NiO films on different substrates-A comparative study, *Surface Review and Letters*, Vol. 24 (2017) 1750096-1-8

54. R. Ahmad, Naveed Afzal, U. Amjad, S.Jabbar, T.Hussain, A.Husnain, Structural and optical properties of DC magnetron sputtered ZnO films on glass substrate and their modification by Ag ions implantation, Materials Research Express Vol. 4 (2017) 076411

55. Mohsin Rafique, Naveed Afzal, R. Ahmad, Impact of 18 MeV He^+ ions on the morphological and structural properties of pure iron" Materials Research Express, Vol. 4 (2017) 096504

56. Anas A Ahmed, Naveed Afzal, Mutharasu Devarajan, Shanmughan Subramani, Structural, morphological, optical and electrical properties of NiO films prepared on Si (100) and glass substrates at different thicknesses, Materials Research Express, Vol. 3 (2016) 116405-1-12

57. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Effect of film thickness on the surface, structural and electrical properties of InAlN films prepared by reactive co-sputtering, Materials Science in Semiconductor Processing, Vol. 43 (2016) 96-103

58. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, A comparative study on the growth of InAlN films on different substrates, Materials Science in Semiconductor Processing, Vol. 51 (2016) 8-14

59. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Influence of substrate temperature on the growth and properties of reactively sputtered In-rich InAlN films, Journal of Materials Science, Materials in Electronics, Vol. 27 (2016) 4281-4289

60. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Growth of AlInN film on GaAs substrate and its application to MSM UV photodetector, Materials Research Express, Vol. 3 (2016) 085904-1-7

61. Naveed Afzal, Mutharasu Devarajan, Fabrication and characterization of $\text{In}_{0.83}\text{Al}_{0.17}\text{N}$ based MSM visible photodiode, European Physical Journal: Applied Physics, Vol. 76 (2016) 10101-1-8

62. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Effects of indium mole fraction on the physical characteristics of magnetron sputtered $\text{In}_x\text{Al}_{1-x}\text{N}$ films, Journal of Alloys and Compounds, Vol. 652 (2015) 407-414

63. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Structural and surface characterization of magnetron sputtered $\text{In}_{1-x}\text{Al}_x\text{N}$ film grown on GaAs substrates, Materials Letters, Vol. 154 (2015) 12-16

64. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Post deposition annealing of magnetron sputtered InAlN film at different temperatures, Journal of Alloys and Compounds Vol. 640 (2015) 260-266

65. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Growth of AlInN films via elemental layers annealing at different temperatures, Modern Physics Letters B, Vol. 29 (2015) 1550169-1-13

66. Naveed Afzal, Mutharasu Devarajan, M.A. Ahmad, Kamarulazizi Ibrahim, Influence of annealing treatment on the physical properties of InAlN films, *Surface Review and Letters*, Vol. 22 (2015) 1550062-1-9

67. Naveed Afzal, KM Deen, R Ahmad, Z Niazi, A Farooq, Mohsin Rafique, Yong-Soo Kim, M Khaleeq-ur-Rahman, Protection of Metals and Physical Chemistry of Surfaces, Improvement in the pitting resistance of Inconel-600 by nitrogen ions implantation, *Protection of metals: Physical chemistry of surfaces*, Vol. 51 (2015) 481-485

68. Mohsin Rafique, Naveed Afzal, KM Deen, Yong-Soo Kim, Electrochemical behavior of hydrogen precipitated Zircaloy-4, *Modern Physics Letters B*, Vol. 29 (2015) 1550200-1-12

69. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, "Growth of Polycrystalline Indium Aluminium Nitride Films on Si (111) Substrates", *Materials Science in Semiconductor Processing*, Vol 27 (2014) 975-984

70. Naveed Afzal, Mutharasu Devarajan, Kamarulazizi Ibrahim, Synthesis of aluminium indium nitride (AlInN) thin films by stacked elemental layers method, *Eur. Phys. J. Appl. Phys.* Vol. 67 (2014) 10301-1-7

71. Naveed Afzal, Mutharasu Devarajan, Shanmugan Subramani, Kamarulazizi Ibrahim, Structural and surface analysis of AlInN thin films synthesized by elemental stacks annealing *Materials Research Express*, Vol. 1 (2014) 026403

72. K. M. Deen , M. Yousaf , Naveed Afzal, S. Riaz, S. Naseem, A. Farooq and I. M. Ghauri, Microbiological influenced corrosion attack by *Bacillus Megaterium* bacteria on Al–Cu alloy, *Materials Technology: Advanced Performance Materials*, Vol. 29 (2014) 269-274

73. Mohsan Jelani, Shazia Bashir, Mahreen Akram, Daniel Yousaf, Naveed Afzal and Sajjad Ahmad, "Mechanical behaviour of excimer laser irradiated polycrystalline zirconium", *Physica Scripta*, Vol. 89 (2014) 025703-1-7

74. Naveed Afzal, Tariq Shah, R Ahmad, "Microstructural Features and Mechanical Properties of Artificially Aged AA2024", *Strength of Materials*, Vol. 45 (2013) 684-692

75. Naveed Afzal, R Ahmad, Tanveer Akhtar, R Ayub, IM Ghauri, "Annealing and Test Temperature Dependence of Tensile Properties of UNS N04400 Alloy", *Journal of materials engineering and performance*, Vol. 22 (2013) 2056-2063

76. M. Jelani, S. Bashir, M. K. Rehman, R. Ahmad, F. Ul. Haq, D. Yousaf, M. Akram, Naveed Afzal, M. Umer Chaudhry, K. Mahmood, A. Hayat, S. Ahmad, "Effect of laser fluence on surface, structural and mechanical properties of Zr after irradiation in the ambient environment of oxygen", *European Physical Journal D*, Vol. 67 (2013) 159-1-7

77. K.M. Deen, Naveed Afzal, R. Ahmad, Z. Niazi, R. Ayub, A.Farooq, I.H. Khan, M. Khaleeq-ur-Rahman, "Intergranular Pitting Tendency of Yttrium Implanted Inconel 600 in Acidic Chloride Media", *Surface & Coatings Technology*, Vol. 212, (2012) 61-66

78. R. Ayub, Naveed Afzal, R. Ahmad, "Phase Transformation Studies in unirradiated and proton beam irradiated NiTi alloy between 25-100 °C" *Philosophical Magazine*, Vol. 92 (2012) 2164-2172

79. Mohsin Rafique, Naveed Afzal, R. Ahmad, S. Ahmad, I.M. Ghauri "Mechanical behavior of low-dose-neutron irradiated polycrystalline Zirconium" *Radiation Effects and Defects in Solids*, Vol. 167 (2012) 289-297

80. I.M. Ghauri, R. Ahmad, F.E. Mubarak, Naveed Afzal, Sajjad Ahmad, R. Ayub, "Effects of Plasma Nitriding on the Tensile Properties of Al-Mg-Si, *Journal of Materials Engineering and Performance*, Vol. 21 No. 7 (2012) 1309-1312

81. Naveed Afzal, I.M. Ghauri, F.E. Mubarik, F. Amin, "Mechanical Response of Proton Beam Irradiated Nitinol" *Physica B: Condensed Matter*, Vol. 406 (2011) 8-11 (I.F=2.988)

82. I.M. Ghauri, Naveed Afzal, M. Shahzad, F.E. Mubarik, "Tensile Behavior of Post Irradiation Annealed Cu-Ni Alloy" "Radiation Effects and Defects in Solids" Vol. 166 (2011) 228-232

83. I.M. Ghauri, Naveed Afzal, Yasir Idrees "A study of microstructure and tensile properties of proton beam irradiated Al-Mg-Si alloy" *International Journal of Modern Physics B*, Vol. 25 (2011) 1645-1652

84. K. Mahmood, N. Frid, I.M. Ghauri, Naveed Afzal, Y. Idress, F.E. Mubarak "Effects of Laser Irradiation on the Mechanical Response of Polycrystalline Titanium" *Physica Scripta*, Vol. 82 (2010) 045606

85. I.M. Ghauri, Naveed Afzal, Nawaz Muhammad, Sajjad Ahmed, "Stress relaxation behavior of irradiated copper in the temperature range 150- 300 K" *Modern Physics Letters B*, Vol. 23 (2009) 655-660

86. M. Anwar, I.M. Ghauri, S.A. Siddiqi, Naveed Afzal, DC Conduction Mechanism in Al-SnO₂-Al structure Deposited by Thermal Evaporation, *Surface Review and Letters*, Vol. 15 (2008) 207-216

87. I.M. Ghauri, Naveed Afzal, M. Akram Raza, "Irradiation effects on microstructure and tensile behavior of polycrystalline nickel" *Surface Review and Letters* Vol. 14 (2007) 1199-1203

88. I.M. Ghauri, Naveed Afzal, N.A. Zyrek "A study of stress relaxation rate in un-irradiated and irradiated stainless steel" *Modern Physics Letters B*, Vol. 21 (2007) 295-301
89. I.M. Ghauri, Naveed Afzal, M. Akram Raza, "Irradiation energy dependence of stress relaxation rate and activation volume in polycrystalline nickel" *Physica Scripta*, Vol. 75 (2007) 419-423
90. I.M. Ghauri, Naveed Afzal, M. Anwar, S.A. Siddiqui, "Anomalous stress relaxation behavior of polycrystalline aluminum at low temperature" *International Journal of Modern Physics B*, Vol. 21 (2007) 1745-1754
91. I.M. Ghauri, Karrar Haider, Naveed Afzal, S.A. Siddique, "A comparative study of stress relaxation rate in un-irradiated and irradiated titanium at low temperature" *International Journal of Modern Physics B*, Vol. 21 (2007) 5247-5255
92. I.M. Ghauri, Naveed Afzal, Karrar Haider "Rate controlling process of stress relaxation in high purity irradiated titanium" *Journal of Physics D: Applied Physics*, Vol. 39 (2006) 2829-2831
93. M Yousaf, I Ali, MA Arif, GM Mustafa, S Ahmad, Naveed Afzal, IM Ghauri, Effects of Microbiologically Influenced Corrosion by *Bacillus Megaterium* Bacteria on the Mechanical Properties of Al-Cu Alloy, *Materials Today Proceedings*, Vol. 2 (2015) 5669-5673
94. M. Yousaf , M. A. Arif , I. Alia , S. Ahmad , G. M. Mustafa , Naveed Afzal, I. M. Ghauri, Mechanical response of electron beam irradiated Nitinol, *Materials Today: Proceedings*, Vol. 2 (2015) 5622–5626
95. Naveed Afzal and I.M. Ghauri, Karrar Haider and Nawaz Muhammad, "Irradiation Effects on the Tensile Behavior of Stainless Steel" *Proceedings of 1st International Conference on Frontiers of Advanced Engineering Materials* (2005) pages 385- 390