Muhammad Atif, PhD

Associate Professor

Physics and Astronomy Department, College of Science, King Saud University, Riyadh, Saudi Arabia.
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Guest Editor Special issue in Micromachines Impact Factor 3.523
Managing Editor Special Issue Frontier in Biosciences (USA) Impact Factor 4.009
Guest Editor Special Issue in Journal of King Saud University, Science Impact Factor 4.011
Guest Editor Special Issue in Current Pharmaceutical Design Impact Factor 3.1

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Citations (ISI) 5508
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A C A D E M I C Q U A L I F I C A T I O N S

Doctor of Philosophy (PhD) (2001-2005)
University of Hull, UK; Department of Physics;
Thesis title: Fluorescence dynamics studies of a Dye (PDT Photosensitiser)
Postgraduate certificate in research (PGCR) (2004)
University of Hull, UK; Department of Physics
Master of Philosophy (MPhil) (1993- 1995)
Quaid-I-Azam University, Islamabad, Pakistan; Department of Physics,
Thesis title: Construction of an atomic beam apparatus for laser spectroscopic studies.
Master of Science (MSc) (1991- 1993)
University of Agriculture, Faisalabad, Pakistan; Department of Physics,
Thesis title: Fabrication and performance study of digital anemometer.

E X T R A C O U R S E S

Basic communication skills	University of Hull
Safety in research in science and engineering	University of Hull
German language course Grundstufe-1 “Befriedigend”	German language centre
Confocal Laser Scanning Microscopy	Carl Zeiss company Jena, Germany

SPECIALIZATION: Laser Physics, Biophotonics, Photodynamic Therapy and Microscopy

HONORS & ACADEMIC AWARDS:

1. 2022 Stanford's list World Top 2% scientists
2. Award for presentation from Firat University Turkey.
3. Best Researcher Paper award from Higher Education Commission, Pakistan September 2015.
4. Best Researcher Paper award from Higher Education Commission, Pakistan September 2013.

5. RPA Award Winner 2012 and 2013
6. Best Researcher Paper award from Higher Education Commission, Pakistan October 2011.
7. Awarded *Tamgha-e-Baqa* by president of Pakistan for recognition of hard work and best performance in 1998.
8. International Science scholarship by the University of Hull, UK
9. Managing Editor Frontier in Biosciences
10. Science Direct Top 25 Hottest Articles Ranked 17
    M. Atif, Mark R Stringer, Janet E Cruse-Sawyer, and Stanley B Brown. (2004) "Fluence-Rate Effects upon mTHPC Photobleaching in a formalin-fixed cell system" *Photodiagnosis and Photodynamic therapy* Amsterdam: Elsevier.Volume 1(2), 173-180.
11. Scholarship of Higher Education commission for PhD.
12. Infaq Foundation Scholarship from Higher Education commission for MPhil.
13. 2nd position in the Department of Physics, Quaid-i-Azam University, Islamabad
14. 2nd position in the Department of Physics, University of Agriculture, Faisalabad

Member of Scientific societies:

Member Technical Program Committees 2014 International Conference on Biological Engineering and Biomedical will take place during January 10-12, 2014 in Yichang, China.

Major Achievements:

1. I participated in the establishment of Laser Spectroscopy Laboratory at Pakistan Institute of Lasers & Optics (PILO) Rawalpindi using different types of lasers, dye lasers, hotwire detector.
2. I participated in the establishment of Biophotonics Laboratory at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad using PDT laser, Double integrating Sphere, Muller Matrix Polarimetry.
3. I participated in the establishment of Biophotonics Laboratory at National Institute of Lasers & Optronics (NILOP) Islamabad using using PDT laser, Double integrating Sphere, Muller Matrix Polarimetry and Laser Scanning Confocal Microscope.
4. I participated in the start of Bio-photonics and Photodynamic therapy activity in Pakistan for the basic research and development in this innovative field and its application for the treatment of skin cancer and other malignant diseases during my stay at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad and National Institute of Lasers & Optronics (NILOP) Islamabad. We provide the basic research, diagnostic and treatment facility for optical laser tissue interaction.
5. About 04 Masters Thesis completed under my supervision two as supervisor and two as Co-Supervisor.
6. Two MPhil Physics thesis are completed under my Supervision as a Co-Supervisor.
7. Two PhD Physics thesis are completed under my Supervision one as a Supervisor and one as a Co-Supervisor.
8. Two PhD students prepared and published their three research papers in ISI indexed journals under my supervision.
9. The cancer treatment using laser was started when I was Assistant Professor at PIEAS and I participated on the clinical front in the photodynamic therapy (light based cancer treatment) and forty skin cancer patients are treated using this therapy. The results of treatment are published in ISI index journal of Laser Physics.
10. I participated at King Saud University for studying Optical Biopsy of Breast cancer tissue. Varieties of optical methods are used currently for the early detection of breast cancer. They include Fluorescence Emission Spectra (FES) and Synchronous

Fluorescence Spectra (SFS) a very promising technique due to its simplicity and reasonable reliability.

11. I participated in the research led to the discovery of lung cancer biomarker by synchronous fluorescence excitation spectroscopy.
12. I participated in the detection and diagnosis of Prostate Cancer by autofluorescence analysis of certain set of biomarkers in urine.
13. I participated in the developing methods to differentiate benign from the malignant tissue and also to do spectral grading of malignancy similar to Gleason Index.

Research Areas:
Laser/Optical Physics, Bio-Photonics Photodynamic Therapy and Confocal Microscopy, Nanomedicine.

Research Interests

1. Optical Biopsy of Breast cancer tissue. Varieties of optical methods are used currently for the early detection of breast cancer. They include Fluorescence Emission Spectra (FES) and Synchronous Fluorescence Spectra (SFS) a very promising technique due to its simplicity and reasonable reliability.
2. Discovery of lung cancer biomarker by synchronous fluorescence excitation spectroscopy of blood plasma and sputum.
3. Detection and diagnosis of Prostate Cancer by autofluorescence analysis of certain set of biomarkers in urine
4. Methods to differentiate benign from the malignant tissue and also to do spectral grading of malignancy similar to Gleason Index.
5. Laser Induced effects in different biological samples
6. Confocal microscopy of different cell lines.
7. Characterization of biomaterials using polarimetric techniques.
8. Polarization Sensitive Optical Imaging of Biomaterial using Mueller matrix Polarimetric Technique
9. The optical polarimetric study of blood malignancy in vitro for diagnostic and treatment of blood cancer
10. Mueller Matrix Polarimetry for the Charactrization of Normal and Malignant Tissue Samples
11. Optical Properties Measurement using Double Integrating Sphere
12. In vitro study of 5 Aminolevulinic acid (5-ALA) based photodynamic Therapy for apoptosis in human cervical HeLa cell line
13. Study of the efficacy of 5 ALA-mediated photodynamic therapy on human larynx squamous cell carcinoma (Hep2c) cell line
14. 5-ALA PDT for Basal & Squamous Cell Carcinoma (BCC & SCC)
15. Monte Carlo Simulation of laser light through human tissue
16. Labelling and optimization of Photofrin with ^{99m}Tc

Current Research

Currently my research is towards

1. **Bio-imaging:**
Confocal imaging of bio-materials
2. **Bio-photonics:**
Laser tissue interaction, Tissue parameter, Bio-material characterization
3. **Tissue polarimetry:**
Polarimetric study using Stokes-Muller matrix models for bio-materials.
4. **Modeling and Simulation:**
Monte carlo simulation of light interaction with tissues and optical materials..
5. **Photodynamic theraphy (PDT):**

Photodynamic therapy Skin diseases (Diagnostics, treatment)
6. **Nanobiotechnology:**
Development and culturimg of Cell lines, HeLa, fiberblast and Stems Cells (Cell line, therapy).

A. Collaboration with other Departments:

1. University of Washington USA
2. University of Toronto Canada
3. Firat University Elazig Turkey
4. GC University, Faisalabad, Pakistan
5. King Khalid Unversity Abha Saudi Arabia
6. Comsats University Islamabad
7. Government college for women University, Faisalabad
8. Naif Arab University for Security Sciences, Saudi Arabia
9. Prince Noura University, Saudi Arabia
10. Laser Laboratory, PIEAS, Islamabad.
11. PDT Laboratory, NORI, Islamabad.
12. Center for Virology, NIH, Islamabad.
13. NCVI, NUST, Islamabad.
14. Wellman Center for Photo medicine, Harvard University, USA.
15. Bio-medical Engineering Dept., Tufts, University, USA.
16. Department of Dermatlogy, University of Dundee, UK
17. Lund Institute of Technology, Sweden
18. Linkoping University, Sweden
19. King Faisal Specialist Hospital & Research Centre
20. King Saud Medical Complex and KKUH, Riyadh
21. Riyadh Military Hospital
22. Prince Noura center on prostate Cancer, KKUH

P R O F E S S I O N A L E X P E R I E N C E (33 years) 1993-2026

Associate Professor
Physics and Astronomy Department, College of Science, King Saud University, Riyadh, Saudi Arabia.
Since May 2015
Assistant Professor
Physics and Astronomy Department, College of Science, King Saud University, Riyadh, Saudi Arabia.
Since 2010
Assistant Professor,
Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
Department of Physics and Applied Mathematics,
National Institute of Lasers and Optronics (NILOP), Islamabad.
2006-2010
Senior Scientific officer
Pakistan Institute of Lasers & Optics Rawalpindi
1996-2001

U N I V E R S I T Y T E A C H I N G A N D R E S E A R C H E X P E R I E N C E (33 years) 1993-2026

1. Teaching General Physics Course (Physics-145, 103, 104, 105) to undergraduate in the Department of Physics and Astronomy, King Saud University, Riyadh Saudi Arabia.
2. Teaching Laser and its Application to undergraduate/graduate level at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
3. Teaching Laser Application in Medicine to PhD students at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
4. Teaching biomedical optics to PhD students at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
5. Teaching Laser Application in Medicine to PhD students at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
6. Teaching Laser Scanning Confocal Microscopy to PhD students at National Institute of Lasers and Optronics (NILOP), Islamabad.
7. Teaching Photo diagnosis and Photodynamic Therapy to PhD students at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
8. Postgraduate Laboratory Demonstrator of Level 2 in the Department of Physics University of Hull, UK.
9. Postgraduate Laboratory Demonstrator Level 3 in the Department of Physics University of Hull, UK.
10. General Physics Courses to undergraduates at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
11. Supervisor of one PhD student and one masters student at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
12. Co-supervisor of five Masters student at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
13. Co-supervisor of one PhD student at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
14. Research Adviser and facilitator for two PhD student for research publications at Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad.
15. Delivered 20 seminars at national and international forums.
16. Attended 10 conferences at national and international levels.
17. Organized 02 international conferences.
18. Optical Biopsy of Breast cancer tissue. Varieties of optical methods are used currently for the early detection of breast cancer. They include Fluorescence Emission Spectra (FES) and Synchronous Fluorescence Spectra (SFS) a very promising technique due to its simplicity and reasonable reliability.
19. Discovery of lung cancer biomarker by synchronous fluorescence excitation spectroscopy of blood plasma and sputum.
20. Detection and diagnosis of Prostate Cancer by autofluorescence analysis of certain set of biomarkers in urine
21. Methods to differentiate benign from the malignant tissue and also to do spectral grading of malignancy similar to Gleason Index.
22. Development of bio-nano particle in process
23. Significant contribution to the development of Biophotonics/Microscopy Laboratory at PIEAS & NILOP.
24. Preclinical and clinical evaluation of photosensitizers for photodynamic therapy.
25. Study of the light dosimetry and of the tissue optical properties.
26. Clinical detection of early cancers by fluorescence imaging during endoscopy.
27. Study of the histological and cellular localization of drugs by fluorescence microscopy.
28. Development of instrumentations for the endoscopic detection of early superficial cancers and for their treatment by photodynamic therapy.

29. Study to obtain fluorescence lifetime images in real time and endoscopically in the frequency domain.
30. Study to measure the fluorescence quantum yield of fluorophores in biological tissues.
31. Cellular level fluorescence photobleaching, studied using a micro-spectroscopic technique with 410 nm laser radiation.
32. Preclinical study of the fluence rate effects upon photosensitizer photobleaching.
33. In vitro studies of the photosensitizer concentration effects on photobleaching using fluorescence microscopy.
34. Two photon excited fluorescence and preliminary tests of PDT treatment of cells using trains of ~ 130 fs duration pulses from a Titanium Sapphire laser emitting at ~ 800 nm.
35. Research Associate at Yorkshire laser centre, Goole Hospital UK. Clinical sessions attended and familiarised myself with.
36. The principles of Fluorescence Bronchoscopy as used for the detection of Bronchopulmonary Cancer.
37. Endoscopic Photodynamic Therapy.
38. Spectroscopy Experiments Installed and coupled dye laser with Excimer laser. Aligned and run the dye laser and found performance is satisfactory.
39. Performed photo-ionization experiment, sodium vapor irradiated by a laser pulse in atomic beam apparatus and recorded the spectra of sodium atoms in the range of 580 to 590 nm.
40. Installation and alignment of all the parts of the vacuum chamber including electron gun.
41. Assembling of Vacuum System A complete new vacuum system has been assembled to attain the vacuum in the range $1x10^{-7}$mbar. Different parts like trolley, reducers, couplers, adapters and nozzles have been designed and fabricated for the new vacuum system.
42. Designing of 6 kW electron gun Designing and development of the various parts for the 6 kW electron gun including cathode assembly, anode assembly and cooling unit.

Book Published

- Laser Induced Effects, 2010, Lap Lambert Publishing, Germany
- Book Chapter Zinc Oxide Nanostructures : Advances and Applications 2013 by Pan Stanford Publishing
  ZnO nanostructures toxicity and phototoxicity characteristics towards biological samples; M. Willander, O. Nur, M. Fakhr-e-Alam, M. Atif, and M. S. AlSalhi
- Book Chapter Fluorescence-based techniques using plasma: A unique biomarker for different cancers 2021 by Biophotonics, Tryptophan and Disease Elsevier
  Mohamad Saleh AlSalhi , Muhammad Atif , Sandhanasamy Devanesan , Vadivel Masilamani , Karim Farhat , Danny Rabah , and Guozhong Cao.

C O M P U T E R S K I L L S

1. Mat lab,
2. Lab view,
3. Windows XP,
4. Windows NT,
5. MS Office,
6. Math Cad,
7. Microcal Origin,
8. Word 97,
9. Microsoft Excel,
10. Paint Shop Pro V6,
11. Power Point XP.

Top 5% Publications

1. Perumal Dhandapani, Mohamad S AlSalhi, Ramalingam Karthick, Fuming Chen, Sandhanasamy Devanesan, Woong Kim, Aruliah Rajasekar, Mukhtar Ahmed, Aljaafreh, Mamduh J, **Atif Muhammad** (2020) Biological mediated synthesis of RGO-ZnO composites with enhanced photocatalytic and antibacterial activity Journal of Hazardous Materials, Available online 25 November 2020, 124661.

Top 10% Publications

1. Quan Zong, Wei Du, Chaofeng Liu, Hui Yang, Qilong Zhang, Zheng Zhou, Muhammad Atif, Mohamad Alsalhi, Guozhong Cao (2021) Enhanced Reversible Zinc Ion Intercalation in Deficient Ammonium Vanadate for High-Performance Aqueous Zinc-Ion Battery Nano-micro letters 13 (1), 1-15.
2. Wenchao Bi, Guohua Gao, Guangming Wu, M Atif, MS AlSalhi, Guozhong Cao (2021) Sodium vanadate/PEDOT nanocables rich with oxygen vacancies for high energy conversion efficiency zinc ion batteries Energy Storage Materials 40, 209-218
3. Meng Tian, Chaofeng Liu, Jiqi Zheng, Xiaoxiao Jia, Evan P Jahrman, Gerald T Seidler, Donghui Long, **Muhammad Atif**, Mohamad Alsalhi, Guozhong Cao (2020) Structural engineering of hydrated vanadium oxide cathode by K+ incorporation for high-capacity and long-cycling aqueous zinc ion batteries. Energy Storage Materials Volume 29, 9-16.
4. **M. Atif**, Soundarrajan Ilavenil, Sandhanasamy Devanesan, Mohamad S. AlSalhi, Ki Choon Choi, Ponnuswamy Vijayaraghavan, Akram A. Alfuraydi, Naif Fahad Alanazi (2020) Essential oils of two medicinal plants and protective properties of jack fruits against the spoilage bacteria and fungi Industrial Crops & Products Volume 147, 112239.
5. Yiming Sui, Chaofeng Liu, Robert C. Masse, Zachary G.Neale, **Muhammad Atif**, Mohamad AlSalhi, Guozhong Cao (2020) Dual-Ion Batteries: the emerging alternative rechargeable batteries Energy Storage Materials 25, 1-32 https://doi.org/10.1016/j.ensm.2019.11.003.

P U B L I C A T I O N S

1. Fakhar-e-Alam, M., Hashim, M., … Aslam, M. J. (2025). Synthesis and characterization of Sr-doped Ce/Mn nanocomposites for fuel cell applications. Journal of King Saud University Science, 37(7).
2. Ali, A., Saadullah, M., … Atif, M. (2024). Appraisal of the anti-arthritic potential of Strelitzia reginae in Wistar rats via modulating molecular inflammatory cascades. Journal of King Saud University Science, 36(8).
3. Khan, M. I., Hussain, S., … Mendivil-Escalante, J. M. (2024). Iron-irradiated methylammonium lead iodide bromide ($MAPbI_2Br$) thin films with enhanced optical and electrical properties. Discover Sustainability, 5(1).
4. Khan, M. I., Hussain, S., … Mendivil-Escalante, J. M. (2025). Elevating photovoltaic efficiency: Cobalt doping approaches in perovskite solar cells. Results in Chemistry, 13.
5. Hussain, S., Khan, M., … Pellegrini-Cervantes, M. J. (2025). Impact of Ag doping on $MAPbI_2Br$ thin films. Clean Energy, 9(2), 132–139.
6. Chen, S. Z., Hou, C. Z., … Atif, M. (2024). Transient dynamics of nanocomposite reinforced concrete systems. Structural Engineering and Mechanics, 90(4), 417–428.
7. Rehman, A., Boota, M., … Ahmad, I. (2024). ZnO-Fe_2O_3 nanocomposite for catalytic activity enhancement. Journal of Ovonic Research, 20(5), 703–714.

8. Lu, Q., Yang, Q., … El-Meligy, M. (2024). Machine learning and Carrera formulation in thermal buckling analysis. Mechanics of Advanced Materials and Structures.
9. Ahmad, B., Irfan, M., … Sharif, A. (2024). ZnO nanorods synthesis for wastewater recycling. Journal of Ovonic Research, 20(6), 779–792.
10. Elkholy, H., Atif, M., … Othman, H. (2024). Properties of alkaline earth borate glasses. Physica Scripta, 99(8).
11. Khan, M. I., Hussain, S., … Nazneen, A. (2024). Mn-doped perovskite solar cells optimization. Results in Optics, 15.
12. Khan, M. I., Hussain, S., … Rodríguez-Rodríguez, M. (2024). Sm-doped $MAPbI_2Br$ solar cells properties. Results in Chemistry, 12.
13. Xu, X. S., Yan, G. X., … El-Meligy, M. (2024). Slope stability analysis of nanocomposite columns. Mechanics of Advanced Materials and Structures.
14. Nadeem, M., Atif, M., … Arqub, O. A. (2026). Fractional Emden-Fowler model analysis. International Journal of Geometric Methods in Modern Physics, 23(03).
15. Ding, J. J., Wang, S. F., … Kumar, A. (2025). ACr_2O_4/MIL-101(Cr) photocatalysts for degradation. Journal of Photochemistry and Photobiology A: Chemistry, 461.
16. Daud, S., Abid, O. U. R., … Rashad, M. (2024). Schiff base derivatives as enzyme inhibitors. Journal of Saudi Chemical Society, 28(5).
17. Amin, M., Mustafa, G. M., … Ali, M. (2024). Energy storage tuning of $BiFeO_3$ nanoparticles. Journal of Ovonic Research, 20(5), 651–665.
18. Javed, U., Sohail, H. A., … Khan, M. I. (2024). ZnO nanoparticles doping effects. Solid State Communications, 390.
19. Rizwan, M., Rasheed, A., … Ali, Z. (2024). Shear Alfven waves in relativistic plasma. Journal of King Saud University Science, 36(7).
20. Ahmed, N., Nazir, N., … Ali, S. (2026). ZnO nanoparticles for liver cancer treatment. Current Pharmaceutical Design, 32(1), 72–81.
21. Karamat, A., Khan, M., … Hussain, S. (2024). Be-doped V_2O_5 nanoparticles for photocatalysis. Results in Chemistry, 8.
22. Abbas, N., Zhang, J. M., … Aslam, M. J. (2024). Fe-doped Co_3O_4 nanoparticles properties. Journal of King Saud University Science, 36(11).
23. Targema, T. V., Babar, R., … Ali, R. (2025). Chaos and motion in monopole spacetime. International Journal of Geometric Methods in Modern Physics, 22(09).
24. Yan, T. W., Wu, P. Q., … Atif, M. (2024). Nano-MoS_2 in asphalt fracture performance. International Journal of Pavement Engineering, 25(1).
25. Ihtisham-Ul-Haq, Khan, M. I., … Hasan, M. S. (2025). Bandgap tuning in perovskite solar cells. Results in Chemistry, 13.
26. Yang, J. Y., Wang, S. F., … Kumar, A. (2025). Doped phosphors for anti-counterfeiting applications. Journal of Photochemistry and Photobiology A: Chemistry, 469.
27. Deng, H., Wang, S. F., … Kumar, A. (2025). $SrFe_{12}O_{19}$ properties and applications. Journal of Electronic Materials, 54(3), 2049–2064.
28. Bhatti, Q. A., Qazi, I., … Ali, Z. (2024). Antifungal potential of Bryum argenteum. Journal of King Saud University Science, 36(6).
29. Abduvalieva, D., Awad, S. A., … Altimari, U. S. (2024). ZnO nanowires for UV photodetection. Optical Materials, 157.
30. Manjunatha, K., Chiu, H. H., … Atif, M. (2025). $ZnFe_2O_4$/$CoCr_2O_4$ nanocomposites study. Journal of Electronic Materials, 54(1), 675–685.
31. Pallathadka, H., Ghazaly, N. M., … Castagne, X. P. (2024). AA1100/Fe_2O_3 composite properties. Powder Metallurgy and Metal Ceramics, 63(5–6), 280–291.
32. Kumar, A., Kaur, M., … Singh, P. (2024). Perovskite solar cells exceeding 20% efficiency. Journal of Materials Science: Materials in Electronics, 35(26).
33. Pallathadka, H., Alzubaidi, L. H., … Al-Tameemi, A. R. (2024). Light-induced torque in quantum waveguides. Applied Optics, 63(19), 5117–5124.
34. Angadi, V. J., Chethan, B., … Atif, M. (2024). Graphene oxide–bismuth oxide humidity sensors. Journal of Materials Science: Materials in Electronics, 35(30).

35. Kumar, A., Kaur, M., … Alhadrawi, M. (2024). Crystalline engineering of $FAPbI_3$ solar cells. RSC Advances, 14(46), 34027–34036.
36. Kumar, A., Pallathadka, H., … Hadrawi, M. (2024). SnSe/PANi electrodes for solar cells. Optical Materials, 157.
37. Manohar, A., Suvarna, T., … Kim, K. H. (2025). $CeO_2/MnFe_2O_4$ nanocomposite properties. Inorganic Chemistry Communications, 172.
38. Newaz, A. A., Kumar, A., … El-Meligy, M. (2025). Additive strategy in perovskite solar cells. RSC Advances, 15(9), 6678–6687.
39. Singh, D., Singh, K., … El-Meligy, M. A. (2025). Pd nanoparticle catalyst for coupling reactions. Journal of Molecular Structure, 1322.
40. Abioye, K. J., Harun, N. Y., … Pande, S. (2024). Co-gasification of biomass for syngas production. Biomass & Bioenergy, 191.
41. Sathish, T., Kumar, P. S., … Yusuf, M. (2024). Carbonization and gasification of cow-dung and Fe_3O_4 nanoparticles at different operating conditions for hydrogen production. ChemistrySelect, 9(35).
42. Manjunatha, K., Kubrin, S. P., … Pattar, V. (2025). Structural, electronic, and magnetic properties of lithium-doped magnesium ferrite nanoparticles. Journal of Solid State Chemistry, 347.
43. Singh, D., Singh, K., … Husseen, B. (2024). In situ decorated Pd nanoparticles on triazin-encapsulated Fe_3O_4/SiO_2-NH_2 as a magnetic catalyst for synthesis and oxidation reactions. Scientific Reports, 14(1).
44. Ali, R. H. M., Rodriguez-Benites, C., … Alzubaidi, L. H. (2024). Controllable optical effects in Landau-quantized graphene. Physica B: Condensed Matter, 691.
45. MI Khan, A Mujtaba, S Hussain, **M Atif**, AI Qureshi, W Shahid, A Ali (2024) Impact of molybdenum doping on the optoelectronic and structural properties of CsPbIBr2 perovskite solar cell Physica B: Condensed Matter 678, 415758
46. Malik Saadullah , M. Fakhar-e-Alam , **M. Atif** , Muhammad Asif , Kanwal Irshad , Zulfiqar Ali (2024) Biological and in silico investigation of isolated novel bioactive compound from Conocarpus lancifolius Journal of King Saud University – Science Volume 36, Issue 4, 103121.
47. M. Fakhar-e-Alam, Irsa Amjad, Malik Saadullah, M. Tahir, M. Jawad, M. Asif, **M. Atif**, Susi Zara, Muhammad Rashad (2024) Antitumor activity of zinc oxide nanoparticles fused with green extract of Nigella sativa Journal of Saudi Chemical Society Volume 28, Issue 2, 101814
48. Amanullah Fatehmulla, Belqes A Shamsan, Ahmed M El-Naggar, Abdullah M Aldhafiri, Nilam Qureshi, Taesung Kim, **Muhammad Atif**, Asif Mahmood, Mohammad Asif (2023) Physical Characteristics, Blue-Green Band Emission and Photocatalytic Activity of Au-Decorated ZnO Quantum Dots-Based Thick Films Prepared Using the Doctor Blade Technique Molecules 28(12), 4644; https://doi.org/10.3390/molecules28124644.
49. Muhammad Arslan Khan, Muhammad Raheel, Sajid Aleem Khan, Allah Ditta Abid, Sohail Shahzad, Hamza Zaffar Siddiqui, **Muhammad Atif**, Atif Hanif (2023) Eco-friendly management of wheat stripe rust through application of Bacillus subtilis in combination with plant defense activators Journal of King Saud University – Science Volume 35, Issue 4, 102587
50. Muhammad Tahir, M Fakhar-e-Alam, **M Atif**, Ghulam Mustafa, Zulfiqar Ali (2023) Investigation of optical, electrical and magnetic properties of hematite α-Fe2O3 nanoparticles via sol-gel and co-precipitation method Journal of King Saud University – Science Volume 35, Issue 5, 102695
51. Malik Saadullah , M. Fakhar-e-Alam , Saima Muzammil , Muhammad Asif , Muhammad Hussnain Siddique , Muhammad Rashad , **M. Atif** , Abid Hussain Sayyid , Muhammad Afzal (2023) Evaluation of molecular mechanisms responsible for in vivo anti-Alzheimer's property of Euphorbia cotinifolia methanol extract Journal of King Saud University – Science Volume 35, Issue 6, 102785

52. Tariq Munir, Arslan Mahmood, Shafaq Fatima, Amjad Sohail , Muhammad Fakhar-e-Alam , **Muhammad Atif** , Noman Rafaqat (2023) Structural, optical and thermoelectric properties of (Al and Zn) doped Co9S8-NPs synthesized via co-precipitation method Journal of King Saud University – Science Volume 35, Issue 7, 102836
53. Ambreen Ashar, Zeeshan Ahmad Bhutta, Muhammad Shoaib, Nada K Alharbi, Muhammad Fakhar-e-Alam, **Muhammad Atif**, Muhammad Fakhar-e-Alam Kulyar, Ashar Mahfooz, Prerona Boruah, Mohamed R Eletmany, Fatimah A Al-Saeed, Ahmed Ezzat Ahmed (2023) Cotton fabric loaded with ZnO nanoflowers as a photocatalytic reactor with promising antibacterial activity against pathogenic E. coli Arabian Journal of Chemistry Volume 16, Issue 9, 105084
54. Noureddine KAID, Mustafa BAYRAM, Jihad ASAD, **Muhammad ATIF**, Muataz S. ALHASSAN, Houari AMEUR,Hijaz AHMAD, and Younes MENNI (2023) Simulation of newly designed vortex generators for optimizing fluid mixing efficiency in compact static mixers with single-exit configuration THERMAL SCIENCE, Vol. 27, No. 4B, pp. 3337-3347
55. Tlili Salah, Kaddour Abdelmadjid, Osra Oumr A, Mustafa BAYRAM, **Muhammad ATIF**, Hijaz AHMAD, and Younes MENNI (2023) Enhancing thermal performance and sustainability parabolic trough concentrator systems in Djelfa's solar-integrated urban design Thermal Science Volume 27, Issue 4 Part B, Pages: 3251-3260
56. **M Atif**, Lothar Lilge, Atif Hanif, Shafiq Ahmad, S Devanesan (2023) Photoacoustic imaging a PDT response marker for monitoring vasculature changes Journal of King Saud University – Science Volume 35, Issue 2, 102480
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235. M. S. AlSalhi, **M. Atif**, A. A. AlObiadi, A. S. Aldwayyan Photodynamic damage study of HeLa cell line using ALA" Laser Physics 21(4), 733-739 (2011).
236. S. Firdous, **M. Atif**, M. Nawaz (2011) Stokes vector determination of polarized light propagation in turbid medium Optics & Spectroscopy 110 (3), 507-510.
237. M. Ikram, R. Khan, S. Firdous, **M. Atif**, M. Nawaz (2011) Photodynamic Therapy of Non-Melanoma Skin Cancers Laser Physics 21(2), 427-433.
238. Hafeez-Ullah, **M. Atif**, S. Firdous, M.S Mehmood, M.Y. Hamza, M. Imran, G. Hussain, M. Ikram (2011) Optical Properties of normal and thermally coagulated chicken liver tissue measured ex vivo with diffuse reflectance Optics & Spectroscopy 110 (2), 311-317.

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240. Hafeez-Ullah, **M. Atif**, S. Firdous, M.S Mehmood, M. Ikram, C. Kurachi, C. Grecco, G. Nicolodelli, V. S. Bagnato Femtosecond light distribution at skin and liver of rats: analysis for use in optical diagnostics *Laser Physics Letters Volume 7(12) 889-898 (2010).*

241. **M. Atif,** M.Fakhar-e-Alam, S.Firdous, S.S.Z.Zaidi, R.Suleman and M.Ikram (2010) Study of the efficacy of 5-ALA-mediated photodynamic therapy on human Rhybdomyosarcoma cell line (RD) *Laser Physics Letters Volume 7(10) 757-764.*

242. M. Fakhar-e-Alam, S. Roohi, **M. Atif**, S. Firdous, N. Amir, R. Zahoor (2010) Labelling and optimization of Photofrin with ^{99m}Tc Radiochimica Acta 98 (12), 813-818.

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245. **M. Atif**, S. Firdous, and M. Nawaz Laser induced effects in different biological samples (2010) Lasers in Medical Sciences Volume 25(4) 545-550.

246. **M. Atif**, S. Firdous, A. Khurshid, L. Noreen, S.S.Z. Zaidi and M. Ikram (2009) ‘‘In vitro study of 5 Aminolevulinic acid (5-ALA) based photodynamic Therapy for apoptosis in human cervical HeLa cell line’’ *Laser Physics Letters Volume 6(12) 886-891.*

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250. **M Atif**, M R Stringer, J E Cruse-Sawyer and S B Brown (2003) “Intracellular fluorescence photobleaching dynamics of mTHPC” *Lasers in medical science Volume 18 (1), S51.*

251. **M Atif** (2008) “In Vitro studies of the fluorescence changes during Photodynamic Therapy” College on Micro and Nano photonics for life Sciences ICTP, Trieste Italy.

252. **M Atif** (2007) “Fluorescence dynamic studies of a PDT photosensitiser ” 12th ESP Congress University of Bath, UK

253. A Rehman, **M Atif** and M Ikram (2007) “Study of Fluence effects in photodynamic therapy using photobleaching model” 6th International Workshop-cum-Training course on Microelectronics and Nano-Electronics and Photonics, Islamabad.

254. **M Atif** (2006) “PDT photosensitizer concentration effects upon photobleaching dynamics” 6th International Symposium on photodynamic diagnosis and therapy in clinical practice, Italy.

255. **M Atif** (2000) “A study of Sodium Spectrum using atomic beam apparatus.” Frontiers of Physics, 20-22, Government College, Lahore.

256. **M Atif** and M A Baig (1998) “Use of two step laser excitation for studying sodium spectrum” Frontiers of Physics, 19-23, Quaid-I-Azam university, Islamabad.

257. **M Atif** and R A Khan (1993) 'Fabrication and performance study of digital anemometer' Journal of the University of Agriculture.

MS / MPHIL/PhD T H E S I S/RESEARCH PUBLICATIONS S U P E R V I S I O N

1. Photosensitizer's Dynamics Studies in Different Biological Samples using Laser Irradiation, 2011 Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (completed)
2. Study of the efficacy of photodynamic therapy and nano particles as a drug delivery vehicle 2012 Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (Completed)
3. Study of the efficacy of Phtotfrin® mediated photodynamic therapy on human Rhabdomyosarcoma cell line (RD) 2011 Hazara University, Mansehra (completed)
4. Monte Carlo Simluation of Laser light through human tissue. 2009 Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (completed)
5. Invitro studies at the cellular level using laser radiation 2008 Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (completed)
6. Photodiagnostics study of biological tissues 2008 Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (completed)
7. Study of Fluence effects in photodynamic therapy using photobleaching model 2007 Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad (completed)
8. Photodynamic activity in Glioma cells 2011 Federal Urdu University of Arts, Science and Technology Islamabad (completed)

C O N F E R E N C E S/T R A I N I N G A T T E N D E D

1. Speaker, **Photo acoustic Imaging to predict tumour hypoxia and cell survival** World Conference On Multidisciplinary Research & Innovation (WCMRI) 28th and 29thOctober 2022 in Singapore
2. Invited Speaker, **Photodynamic therapy and its applications**"3rd International conference on Advances in theoretical and applied physics (ATAP)" from 24 Feb to 26 Feb 2021 under department of Physics, Government college women university Faisalabad, Pakistan.
3. Invited Speaker, **Overview of PDT in Biophotonics 2nd International Symposium on modern trends in Physics (ISMTP2021) 17th to 18th March 2021** under department of Physics, Government college university Faisalabad, Pakistan.
4. Speaker, **Associating vascular imaging with hypoxia and cell survival in vivo for Biophotonics applications** 2021 SBFoton International Optics and Photonics Conference (SBFoton IOPC) from May 31st to June 2nd Brazil
5. Invited Speaker, **Photodynamic Therapy (PDT) Applications in Biophotonics** 8th International Conference on Materials Science and Nanotechnology For Next Generation, MSNG2021 14th to 16th July 2021 Firat University, Turkey
6. **Presented one paper, 1st Conference of the Arabian Journal of Geosciences (CAJG-2018)** Study of the composition, mechanical and magnetic properties of Saudi meteorite **Hammamet, Tunisia on 12 – 15, November 2018.**
7. **Presented one paper, FACSS Presents SciX 2015 Rhode Island Convention Center Providence, Rhode Island USA,** Discrimination of polymers from plasma parameters using laser Induced Breakdown spectroscopy
8. **Presented two papers, NaNoNG-2015** which will be held at Antalya, Sherwood Club Kemer, TURKEY
    - Cytotoxic Effects of Magnetic Spinel Ferrites Nanoparticles in HepG2 cellular Model for Cancer Cure

- Characterization of Multi-Layered TiO2-ZnO-TiO2 Nano-structured Thin Film Prepared by Sol-Gel Spin Coating System.

9. **Presented a paper,** Aqueous Synthesis, Characterization and Interaction of CdS Quantum Dots with denatured Bovine Serum Albumin, The first international conference on nanotechnology & its application (ICNA (I) - 2014) 25 - 28 February 2014 (Qena – Luxor) – **Egypt**
10. **Presented a paper,** Advanced School of Biophotonics for Diagnosis and Treatment of Cancer and Microbial Control, 11-19 April 2013 Brazil
11. **Presented a paper**, twenty first annual International Laser Physics Workshop (LPHYS'12) took place from July 23 to July 27, 2012, in the city of Calgary, Canada, in the Hotel Hollywood, Congress Center, and University of Calgary, Calgary, Canada.
12. Member of the organizing committee of the Workshop on the effective use of Spectroscopy 4-7 April King Saud University Riyadh Saudi Arabia 2012.
13. KAUST-UCSB-NSF Workshop on Solid-State Lighting. February 13-14, King Abdullah University of Science & Technology. Thuwal Saudi Arabia 2012.
14. **Presented a paper** in IEEE Conference on Electronics, Communication and Photonics KACST, Riyadh Saudi Arabia 2011
15. **Presented a paper**, The twentieth annual International Laser Physics Workshop (LPHYS'11) will be held from July 11 to July 15, 2011, in the city of Sarajevo, Bosnia
16. Member of the organizing committee 35th International Nathiagali Summer College Islamabad Pakistan 2010
17. University College London, 2010 Biophotonics UK
18. Confocal Laser Scanning Microscopy Training at Jena, 2009, Germany
19. **Presented a paper**, College on Micro and Nano photonics for life Sciences ICTP, Trieste, 2008 Italy.
20. **Presented a paper**, 12th ESP Congress University of Bath, 2007 UK
21. **Presented a paper**, International Symposium on photodynamic diagnosis and therapy in clinical practice, October 2006, Italy.
22. **Presented a paper**, Joint International Laser conference, September 2003**,** Edinburgh, Scotland.
23. Lasers in Medicine, June 2001, International Congress Center Munich Germany.
24. **Presented a paper**, Eighth Symposium on Frontiers of Physics, November 2000, Government College, Lahore.
25. **Presented a paper**, Seventh Symposium on Frontiers of Physics, November 1998, Quaid-I-Azam University, Islamabad.
26. Comstech-Nist workshop on new trends and breakthroughs in solar energy research, August 1994, Islamabad, Pakistan.
27. Third International Symposium on Advanced materials, September 1993, Islamabad.

Reviewer of the following journals:

1. **Optik - International Journal for Light and Electron Optics**
2. **Applied Optics-OSA**
3. **Materials Chemistry and Physics**
4. **Silicon**
5. **Photodiagnosis and Photodynamic Therapy**
6. **Applied Surface Science**
7. **Journal of Optoelectronics and Advanced Materials**
8. **Materials Science in Semiconductor Processing**
9. **Current Nanoscience**

10. **Journal of Saudi Chemical Society**
11. **Engineering Science and Technology: an International Journal**
12. **Journal of Photochemistry and Photobiology B: Biology**
13. **Journal of Nanoparticle Research**
14. **Photochemistry and Photobiology**
15. **Photomedicine and Laser Surgery**
16. **Chinese Optics Letters**
17. **Frontier in Biosciences**
18. **Journal of Photochemistry and Photobiology A: Chemistry**
19. **International Journal of Spectroscopy.**
20. **Journal of Nanomaterials**
21. **Materials Research Express**
22. **Anti-Cancer Agents in Medicinal Chemistry**
23. **Journal of King Saud University Science**
24. **ACS applied materials & interfaces**
25. **Karbala International Journal of Modern Science**
26. **Current Nutrition and Food Sciences**
27. **International Journal of Nanomedicine**
28. **The Scientific Journal of King Faisal University: Basic and Applied Sciences**
29. **Biomarkers**
30. **International Journal of Health Planning and Management**
31. **Biologia**