Curriculum Vitae

Personal Information

Name: Dr. Ambreen Kalsoom
Email: kalsoom.ambreen@gscwu.edu.pk

Current Status

Assistant Professor
Department of Physics
The Govt Sadiq College Women University
Bahawalpur

Academics

- **PhD:** Nuclear Science and Technology-Physics
  Tsinghua University, Beijing, China
- **MSc: Physics**
  Bahauddin Zakariya University, Multan
- **BSc: Physics**
  Bahauddin Zakariya University, Multan

Experience

- **Assistant Professor (February 7, 2017- Present)**
  Department of Physics
  The Govt. Sadiq College Women University, Bahawalpur
- **Lecturer Physics/Subject Specialist-Physics (BPS-17): 04 Years**
  Divisional Public School & College, Sahiwal, Pakistan.

Honors & Awards

Sr. No	Title	Agency/ Organization	Total Amount Awarded
1	Won COMSTECH "Best Research Paper Award in Physics 2023"	OIC, COMSTECH, Islamabad	Certificate, Shield, 1255 USD
2	Won Project "PAK-UK Education Gateway Mobility Partnership Grant for Faculty" in 2023	British Council	£4000
3	Won Project as Principal Investigator in 2017-18	Higher Education Commission (HEC), Pakistan	0.495M
4	Won Project as Co-Principal Investigator in 2017-18	Higher Education Commission (HEC), Pakistan	0.479M
5	Won PhD fellowship (2011)	Chinese Government	Fully Funded

6	Won "Best Project Evaluation Award" 2017	Pakistan Science Foundation	Certificate, Shield
7	Research Productivity Award (RPA, 2021,2022,2023,2024,2025,2026)	ORIC, The Govt. Sadiq College Women University Bahawalpur	Cash Prize, Certificate
8	Teacher Merit Certificate	Divisional Public School & College, Sahiwal, Pakistan.	Certificate

MS Thesis supervised

Programme	No. of Students	Year
MS Physics	07	2021-2023
MS Physics	04	2022-2024
MS Physics	04	2023-2025

Conferences/workshops (National /International)

- **Invited Speaker** in 3rd International Conference **"Emerging Trends in Physics" International Conference on Collaborative Strategies of Higher Education Institutions and Industry to Promote Sustainable Development Goals**" held **on 5th to 6th December 2025** at The Islamia University Bahawalpur.
- Focal Person of One Day International Seminar Under WOMEN INI STEM TIATIVE AT GSCWU entitled **Women in STEM: Challenges, Opportunities and Achievements** held on 19th May 2025 at The Govt. Sadiq College Women University, Bahawalpur.
- Organized One day seminar entitled **Challenges in Higher Education, Leadership Development, Professional Growth, and Conflict Management** under the Women Empowerment and Mentoring Programme held on 20th March 2025 at The Govt. Sadiq College Women University, Bahawalpur.
- Organized **"Physics Project Exhibition"** on 4th June 2025 at The Govt. Sadiq College Women University, Bahawalpur.
- Imparted Training to Mentees under WOMEN EMPOWERMENT & MENTORING PROGRAM (WEMP) awarded by NATIONAL ACADEMY OF HIGHER EDUCATION (NAHE), Higher Education Commission (HEC), Islamabad, Pakistan, held on 14th January to 14th April, 2025
- Successfully completed Faculty Development Training under the *National Outreach Program for Higher Education Faculty*, awarded by the **National Academy of Higher Education (NAHE), Higher Education Commission (HEC), Islamabad**, in collaboration with **The Govt. Sadiq College Women University Bahawalpur**, from **January 27 to February 21, 2025**.
- Invited talk at "**Queen Marry University London**" UK held on **5 June 2024.**
- **Guest Speaker** in the 2nd International Conference **"Emerging Trends in Physics"** held on **6th to 8th May 2024** at the Institute of Physics, The Islamia University of Bahawalpur.
- **Invited Speaker** in International Conference "**International Conference on Collaborative**

Strategies of Higher Education Institutions and Industry to Promote Sustainable Development Goals" held **on 4th-5th March 2024** at The Women University Multan.

- **Chief Organizer** One Day Seminar "**Recent Development in Biophotonics and Nanotechnology**" held on **26th May 2022**.
- **Faculty Orientation Training Program for Universities** from May 24-28, 2021 organized by Punjab Higher Education Commission (PHEC).
- **Kalsoom Ambreen**, Mirza, M. " Comparative studies of transport properties of few atoms separately doped graphene quantum dots by non-covalently adsorbing 4, 4′- (ethane-1, 2-diyl) dibenzenethiol molecule" **International Meritorious Multidisciplinary Virtual Conference (IMMVC)**, **2020**, Organized by Meritorious Group of Publications.**17- 19 August, Reg IMMVC-P-46.**
- **"ONLINE EDUCATION: TOOLS AND STRATEGIES"** held on **21-23 JULY 2020**, organized by Punjab Higher Education Commission (PHEC).
- Participated in the training program "**Capacity Building**" held from **26th June to 31st August 2018.**
- Focal person to organize a one-day Seminar on **"Condensed Matter Physics and Nanotechnology**; **Research and Innovation"** at The Govt. Sadiq College Women University Multan on **11th May 2018.**
- The 6th International Conference on Nanoscience & Technology, **China 2015**. "**New Nano-Times: Opportunities and Challenges"** The 2014 UCAS National Doctoral Academic Forum was held from October 23 to 24 at the National Center for Nanoscience and Technology in Beijing.
- Participated in 2013 "**Frontier of Green Technology Training Workshop"** held in September **24- 29,2013, Beijing, China.**

Publications

2025

1. Bibi, Firdous; Zubair, Muhammad;**Kalsoom, Ambreen*;** Hossain, Ismail; Yasmeen, Kanwal; Aldosari, Eman; Raza, Qasim; Mahmood, Mudasir; Iqbal, Shahid; Development of a high-performance La/Cu Co-doped $BiFeO_3$/g-C_3N_4 nanocomposite for efficient degradation of moxifloxacin and crystal violet dye for environmental applications. **Journal of Sol-Gel Science and Technology, 2025. IF=2.5 (Principal Author)**
2. Qureshi, Waseem Akhtar; Al-Khayri, Jameel M; Khattak, Waseem Ahamed; Majeed, Muhammad; Farid, Afshan; Anas, Muhammad; **Kalsoom, Ambreen**; Hussain, Tanveer; Ihsan, Ayesha; Nisa, Mehrun; Waheed, Muhammad; Nanosensor for Drug Delivery, in Nanosensors in Biomedical Technology, D. Kala, H. Kumar, and N. Akhtar, Editors. 2025, Springer Nature Singapore: Singapore. p. 181-211. **(Book Chapter)**
3. **Kalsoom, A**., Fatima, E., Tariq, M., Mirza, M., Qureshi, W. A., & Mubarik, S. (2025). First principle Study of Adenine, Cytosine, Guanine and Thymine of Nucleobase DNA on Graphene Layer. **New Trends in Physics 2025. (Principal Author)**
4. Mobeen, Maida.,Majeed, Muhammad.,Fatima, Samreen.,Oladokoun, Aki.,Akbar, Ayesha.,Umar, Aftab.,Al-Khayri, Jameel M..,Quresh, Waseem Akhtar.,**Kalsoom, Ambreen.**,Iqbal, Javed., Abbasi, Banzeer Ahsan. (2025). Regulations and Ethical Considerations for Nanotechnology in Agri-food Applications. In J.-T. Chen (Ed.),

Nanobiosensors for Crop Monitoring and Precision Agriculture (pp. 307-334). Singapore: Springer Nature Singapore. **(Book Chapter)**

5. Iqbal, Shahid. Bibi, Firdous. Jamshaid, Muhammad. **Kalsoom, Ambreen.** Al-onazi, Wedad A. Elshikh, Mohamed S. Karim, Md Rezaul Hossain, Ismail. Z-scheme design of hydrothermally synthesized Sm-Fe-doped LaNiO3/g-C3N4 heterostructure photo-catalyst for the efficient elimination of methylene blue & moxifloxacin pollutants, **2025, Polyhedron, p 17446 IF=2.4**
6. Iqbal, Shahid.Jamshaid, Muhammad Bibi, Firdous Al Masoud, Najla Alomar, Taghrid S. Iqbal, Rashid Raza, Qasim, **Kalsoom, Ambreen*,** Magnetically recyclable Mn and Co doped r-GO based LaFeO3 nano-composite for tuning the optical and solar light driven photo-catalytic applications, **Journal of Water Process Engineering, 2025. IF=6.3 (Principal Author)**
7. Bibi, Firdous. Jamshaid, Muhammad. Al-onazi, Wedad A. **Kalsoom, Ambreen***. Hossain, Mohammad Ashraf. Iqbal, Rashid. Elshikh, Mohamed S. Iqbal, Shahid, Design of Sm-doped GdFeO3/g-C3N4 heterostructure Z-scheme photo-catalyst for the elimination of malachite green dye from industrial water, **Optical Materials, 2025 p. 116696 IF=3.8 (Principal Author)**
8. Raza, Qasim. Iqbal, Shahid.Bibi, Firdous. Aldosari, Eman. **Kalsoom, Ambreen**. Jamshaid, Muhammad, Iqbal, Rashid.Lim, Sooman. A novel g-C3N4 based CeO2 loaded ternary CeO2/CoFe2O4@g-C3N4 hetero-junction catalyst for the efficient removal of enrofloxacin from the veterinary wastewater, **Journal of Sol-Gel Science and Technology, 2025. IF=2.5**
9. Kalsoom, Ummay. **Kalsoom, Ambreen***. Hussain, Altaf. Rafiq, Muhammad Amir. Mirza, Misbah Qureshi, Waseem Akhtar Tariq, Maha. Batool, Zahida. Nisa, Mehrun. Density-functional theory based structural, mechanical, thermal, electronic, and thermoelectric properties of Zr2XNiSb2 (where X = Fe, Pd, Pt) double half-Heusler alloys, **Physica B: Condensed Matter, 2025. IF=2.8 (Principal Author)**
10. Yaqoob, Umbreena. Atiq, Atia. Ain, Qura Tul. **Kalsoom, Ambreen.** Rasul, Muhammad Nasir. A comprehensive Ab-Initio study of ternary XCo2S4 (X = Mg, Zn) chalcogenides, **Materials Science in Semiconductor Processing, 2025:p. 109261 IF=4.2**
11. Fatima, Fareeha; **Kalsoom, Ambreen**; Ain, Qura Tul; Fareed, Ishfaq; Ammar, Mohamed Ben; Mehmood, Memoona Rasul, Muhammad Nasir. Comprehensive and comparative density functional theory based study of LiZnZ (Z = Sb, Bi) compounds via GGA, WC and mBJ schemes. **Indian Journal of Physics, 2025. 99(12): p. 4513-4531 IF=1.7**

2024

12. M. Mahmood, S. Iqbal, M. Jamshaid, **A. Kalsoom**, A.M. Al-Mohaimeed, R. Iqbal, F. Bibi, Q. Raza, M.S. Elshikh, Efficient tetracycline removal from hospital wastewater using visible light active M-type lead hexaferrite/g-C3N4 composites, **Journal of Sol-Gel Science and Technology**, **(2024). IF=2.5**
13. Iqbal, Shahid, Bibi, Firdous Taha, Safaa S. Mohany, Mohamed Iqbal, Rashid, **Kalsoom, Ambreen** Ahmad, Khursheed Ahmed, Adeel Jamshaid, Muhammad. A versatile GdFeO3/NiO@g-C3N4 ternary hetero-structure photo catalyst for effective photo-degradation and adsorption of tetracycline and ciprofloxacin from wastewater. **Synthetic Metals**, 2024: p. 117757. **IF=4.0**
14. Ahmad, S., Nasir, W. H., Ashraf, M. B., **Kalsoom, A***., Fatima, F., Manzoor, A., & Rasul, M. N. **(2024).** Detailed DFT-based exploration on spin-gapless features of IrCoNbX (X= Al, Ga, In) alloys. **Journal of Magnetism and Magnetic Materials,** 172502. **IF=2.5 (Principal Author)**

15. Raza, A., Ahmad, Z., Hassan, **A., Kalsoom**, A., Fatima, F., Abumousa, R., & Rasul, M. N. **Eur. Phys. J. Plus**,. **(2024).** Exploring the physical attributes of NaCaX (X = As, Sb) semiconductors by first principles calculations. 139(7), 564. **IF=2.8**
16. Bibi, F., Jamshaid, M., Iqbal, S., Al-Mohaimeed, A. M., Al-onazi, W. A., Ahmed, A., & **Kalsoom, A*.** (2024). Impact of Co and Cu co-doping on the Structural, Electrical, Magnetic and Solar Light Driven Photo-Catalytic Properties of NiFe2O4 Nano-crystals for Crystal Violet Dye Removal. **ChemistrySelect**, **2024**, 9(21), e202400372. **IF=2.3 (Principal Author)**
17. Abbass, M. A., Khan, M. T., **Kalsoom, A.,** Khalid, M. A Abbass, Muhammad Ahsan, et al. "The investigation of optoelectronic properties of doped and co-doped Tm3+ and Tb3+ Bi4Ge3O12 scintillation crystal: new insights from the First principle study." **Journal of Solid State Chemistry, (2024):** 124817. **IF=2.72**
18. Iqbal, Shahid. Bibi, Firdous, Farouk Elsadek, Mohamed. Al-Mohaimeed, Amal M. **Kalsoom, Ambreen**.Mahmood, Mudasir. Tahir, Asif A. Jamshaid, Muhammad. Gd and Ni co-doped BiFeO3 ferrite/r-GO nanocomposite for photocatalytic environmental remediation applications. **Materials Science in Semiconductor Processing, 2024**, 179. **IF=4.1**
19. F. Hussain, M. Nisa, M. Riasat, W. Shafqat, N. Batool, F. Afzal, A. Nazir, **A. Kalsoom,** Enhancing Liver Disease Diagnosis Through Texture-Based Classification Of Ct Images: A Computer-Aided Diagnostic Approach, **Journal of Population Therapeutics Clinical Pharmacology** 31 **(2024)** 1740-1750. **IF=0.6**
20. Tariq M, Kalsoom **A, Kalsoom*** U, Khan K, Mirza M, Qureshi WA, Mubarik S, Parveen S. Theoretical Investigation of Transport Properties of X-doped (X= Cl, P, N) Graphene Quantum Dots Layer Adsorbed with Ammonia Molecule Using Non-Equilibrium Green's Function. **JOURNAL OF NANOSCOPE (JN)**. **2024** Jun 30;5(1):1-4. **(Principal Author)**
21. Bibi, Firdous, Ahmed, Adeel, Ajaj, Yathrib Dawood, Ahmed Abd Al-Sattar, Usman, Muhammad, Alodhayb, Abdullah Mohammad, Saikh Ahmad Zubair, **Kalsoom Ambreen**, Iqbal Shahid, Fabrication of Ni and Mn co-doped ZnFe2O4 spinel ferrites and their nanocomposites with rGO as an efficient photocatalyst for the remediation of organic dyes. **Polyhedron**, **2024**. 250. **IF=2.6**

2023

22. A. Khalid, N. Yasmin, **A. Kalsoom**, Y. Abbas, T. Shahid, M. Safdar, M. Mirza, Investigation of photocatalytic properties of bismuth vanadium based oxyselenide for textile dye removal, **Journal of Dispersion Science and Technology, (2023)** 1-8. **IF=1.9**
23. M. Rasheed, F. Saira, Z. Batool, J. Yaseen, M. Arshad, **A. Kalsoom**, H.E. Ahmed, M.N.J.R.a. Ashiq, Facile synthesis of a CuSe/PVP nanocomposite for ultrasensitive non-enzymatic glucose biosensing, **RSC Advances** 13(38) **(2023)** 26755-26765. **IF=3.9**
24. Ahmad, M. Safdar, N. Yasmin, A. Iftikhar, **A. Kalsoom**, S. Khalid, M.J.W.P. Mirza, Technology, Rare earth ions (La3+, Nd3+) substituted cobalt–strontium spinel ferrites for photocatalytic degradation of textile dyes, (**2023**). **Water Practice and Technology. IF=1.6**
25. S. Parveen, N. Bukhari, N. Ramzan, S. Musaddiq, S. Mubarak, **A. Kalsoom**, W.A. Qureshi, Green Synthesis of Value-Added Fluorescent Carbon Dots from Sugarcane Bagasse and Their Antioxidant, Reducing and Catalytic Activities, **Sugar Tech (2023)**. **IF=1.8**
26. Firdous Bibi, Shahid Iqbal, **Ambreen kalsoom***, Muhammad Jamshaid, Adeel Ahmed, Misbah Mirza, Waseem Akthar Qureshi, Magnetically separable Nd and Mn co-doped SrFe12O19 hexa-ferrites nanostructures for the evaluation of structural, magnetic and photo-catalytic studies

under solar irradiation for the crystal violet dye removal from the industrial wastes. **IF=5.5 (Principal Author)**

2022

27. Yasmin, N., Liaqat, A., Ali, G., **Kalsoom, A.**, Safdar, M., & Mirza, M. **(2022)**. Synthesis and Characterization of silver-indium and antimony selenide: role in photocatalytic degradation of dyes. **Heliyon,** 8(10), e11088. **IF=3.7**
28. Batool, Z., Bashir, S., Ismail, M., Kousar, R., Manzoor, M. Z., Khan, H. M., & **Kalsoom, A**. **(2022).** Synthesis, structural, optical, and dielectric properties of novel barium-doped bismuth selenide. **Journal of Materials Science: Materials in Electronics, 33(21), 17212-17222. IF=2.78**
29. Nida, N. Yasmin, **A. Kalsoom**, H. Qayyum, M. Ahmad, M. Safdar and M. Mirza **(2022).** "Synthesis, characterization, and photocatalytic activity of quaternary selenide Composite using natural sunlight." **Optik 251: 10. IF=2.45**
30. M. Tariq, **A. Kalsoom**, M. Mirza, W. Qureshi, S. Mubarik, A. Mujahid, Z.J.M.I. Batool, Theoretical Elucidation of Tuning the Transport Properties of Doped and Co-Doped Graphene Quantum Dots layer with Adsorption of Porphyrin Molecule Using Non-Equilibrium Green Function, **Materials Innovations,** 2(12) **(2022)** 317-325. **(Principal Author)**
31. **Ambreen Kalsoom***, Misbah Mirza, Zoobia Shah, Anam Majeed, Shamroza Mubarik, Arooj Ali, Asma Tariq, Tooba Arshad, Sawera Ramzan, Waseem Akhtar Qureshi; Recent Developments in Graphene Quantum Dots in Energy Related Applications: A Review, **Materials Innovations,** 2(10) **(2022)** 317-325. **(Principal Author)**
32. Ali, A., F. Hussain, **A. Kalsoom***, T. Riaz, M. Zaman Khan, Z. Zubair, K. Shaker, J. Militky, M. T. Noman and M. Ashraf (2021). "Multifunctional Electrically Conductive Copper Electroplated Fabrics Sensitizes by In-Situ Deposition of Copper and Silver Nanoparticles." **Nanomaterials (Basel) 11(11). IF=5.7 (Principal Author)**
33. Mubarik, S., N. Qureshi, Z. Sattar, A. Shaheen, **A. Kalsoom**, M. Imran and F. Hanif **(2021).** "Synthetic Approach to Rice Waste-Derived Carbon-Based Nanomaterials and Their Applications." **Nanomanufacturing 1(3): 109-159. IF=0.64**
34. Kalsoom, A., A. N. Shankar, I. Kakaravada, P. Jindal, V. V. K. Lakshmi and S. Rajeshkumar **(2022)**. "Investigation of dynamic properties of a three-dimensional printed Thermoplastic composite beam containing controllable core under non-uniform magnetic fields." **Part L: Journal of Materials: Design and Applications 236(2): 404-412. IF=2.311 (Principal Author)**

2021

35. Ali, A., F. Hussain, S. Attacha, **A. Kalsoom**, W. A. Qureshi, M. Shakeel, J. Militky, B. Tomkova and D. Kremenakova **(2021).** "Development of Novel Antimicrobial and Antiviral Green Synthesized Silver Nanocomposites for the Visual Detection of Fe3+Ions." **Nanomaterials 11(8): 2076. IF=5.7**
36. Makhdoom, M., S. Azamz, A. Waheed, **A. Kalsoom***, A. Iqbal, B. Ul Haq, S. S. Ahmad, I. Zada and S. Khan **(2021).** "Ab Initio Studies of Li3AlH6 Materials for Hydrogen Storage Purposes and Optoelectronic Applications." **International Journal of Electrochemical Science 16(11). IF=1.76 (Principal Author)**
37. Bibi, F., S. Iqbal, H. Sabeeh, T. Saleem, B. Ahmad, M. Nadeem, I. Shakir, M. Aadil and **A. Kalsoom* (2021).** "Evaluation of structural, dielectric, magnetic and photocatalytic properties

of Nd and Cu co-doped barium hexaferrite." **Ceramics International 47(21): 30911-30921. IF=5.5 (Principal Author)**

38. Rahim, I., S. Azam, B. Gul, A. Khan, N. Yousaf, Z. Zada, M. Saqib, **A. Kalsoom,** F. Subhan, M. Ismail (2021). "Advances in tuning band gap of Graphene by potential doping using DFT: a review." **Digest Journal of Nanomaterials and Biostructures 16(3). IF=0.963**
39. Ullah, S., Azam, S., Gul, B., Subhan, F., Muhammad, S., Dahshan, **A., Kalsoom Digest Journal of Nanomaterials and Biostructures**. **(2021).** First principle study of Er, co-doped Fe and Yb of NaBiF 6; a promising materials for optoelectronic and transport properties; probed by DFT. 16(3). **IF=0.963**

2020

40. Amara Rafi, Muhammad Asif Alam, Tajwar Iqbal, Zahid Tahir, Zeeshan Elahi, Fiazan Sumra, Ayesha Ahmed Qureshi, Waseem Akhtar **Kalsoom, Ambreen.** Silver Nano Particles (AgNP) Synthesis Using Apple Extract. **Bull. Env. Pharmacol. Life Sci 2020**. 9: p. 103-106.

2019

41. Yasmin, N., Abdulsatar, S., Hashim, M., Zahid, M., Fatima Gillani, S., **Kalsoom, A.,** Mirza, M. (2019). Structural and magnetic studies of Ce-Mn doped M-type SrFe12O19 hexagonal ferrites by sol-gel auto-combustion method. **Journal of Magnetism and Magnetic Materials, 473, 464-469. IF=3.07**

2015

42. A. Kalsoom Wang, F. **(2015).** "Tuning properties of NC3H quantum dot by adsorption of ammonia and carbon dioxide." **Current Applied Physics 15(11): 1348-1352. IF=2.48 (Principal Author)**

2014

43. A. Kalsoom Song, S. **(2014).** "Current shot noise characteristics in biphenyl diamine and biphenyl dithiol devices." **Applied Physics A 116(3): 1489-1493. IF=2.58 (Principal Author)**