

Curriculum Vitae

PERSONAL INFORMATION



Syed Shahbaz Ali (Ph.D)

(HEC Approved Ph.D Supervisor)

📍 School of Physical Sciences, University of the Punjab, Lahore, Pakistan

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Sex Male | Nationality Pakistani

WORK EXPERIENCE

Sept. 2020-Continue

Assistant Professor

School of Physical Sciences, University of the Punjab, Lahore, Pakistan

Dec. 2015-Sept. 2020

Assistant Professor

Dept. of Physics, The University of Lahore, Lahore, Pakistan

Nov. 2010-May 2011

Lecturer (CTI)

Dept. of Physics, Govt. Science College, Lahore, Pakistan

EDUCATION AND TRAINING

2011-2016

Ph.D - Condensed Matter Physics

Institute of Physics, Chinese Academy of Sciences, Beijing, China

2008-2010

M.Phil - Microelectronics Engineering and Semiconductor Physics

University of the Punjab, Lahore, Pakistan

2006-2008

M.Sc - Physics

University of the Punjab, Lahore, Pakistan

PERSONAL SKILLS

Organisational / managerial skills

- Program coordinator M.Phil/Ph.D (Optics and Photonic Systems), SPS, University of the Punjab
- Member/Convener of several departmental committees, SPS, University of the Punjab
- Established research laboratory in The University of Lahore after getting research grant from HEC-Pakistan
- **May 2019-Sept. 2020**-Incharge of Materials Synthesis and Research Lab, The University of Lahore
- **Feb. 2017-Sept. 2020**-Departmental Sports Coordinator, The University of Lahore

Job-related skills

- XRD, SEM, TEM, UV-Vis, VSM, PPMS, SQUID
- Several fabrication techniques including Electrochemical deposition, Solgel, Coprecipitation
- Technical software including Multisim, MDI Jade, Origin

ADDITIONAL INFORMATION

Honours and awards

1. Si-Nan award for best JMMM paper, Chinese Physical Society Fall meeting 2023
2. Best poster Award with a cash prize of 100USD, Chinese Physical Society Fall meeting 2022
3. Certification on getting passing grade in "Structure of Materials" through online learning offered by Massachusetts Institute of Technology, USA, 2020
4. Outstanding reviewer award from Journal of Magnetism and Magnetic Materials, 2017
5. HEC-Pakistan Approved PhD Supervisor since 2017
6. Full scholarship for PhD studies awarded by Chinese Scholarship Council and University of Chinese Academy of Sciences, 2011-2015
7. Best research paper (Oral presentation) in the 3rd Symposium on Engineering Sciences, University of the Punjab, Quaid-e-Azam Campus, Lahore, Pakistan, 2010

Courses taught

1. Fundamentals of Photonics, M.Phil
2. Photonic Devices and Applications, M.Phil
3. Nanotechnology, Ph.D
4. Magnetic Materials, Ph.D
5. Materials Science, M.Phil/Ph.D
6. Methods and Techniques in Experimental Physics, M.Phil/Ph.D
7. Solid State Physics I and II, M.Sc
8. Electronics, M.Sc
9. Modern Physics and Electronics, BS

Research supervision

1. Successfully supervised 24 M.Phil research students
2. One PhD supervision successfully completed, One is continue

Research Grant

1. Research Grant of 0.5 Million PKR under SRGP from HEC, Pakistan, 2016
2. Research Grant of 9.79 Million PKR under NRPU from HEC, Pakistan, 2022

Selected Oral/Poster presentations

1. Online Poster presentation, Chinese Physical Society Fall meeting, 18th Nov. 2022, Received Best poster Award with a cash prize of 100USD.
2. International Conference on Recent Trends in Materials Science and Nanotechnology, Department of Physics, Forman Christian College (A Chartered University) Lahore, 15-16 Sept. 2021 (Oral Speaker)
3. 2019 Joint MMM-Intermag Conference, Marriott Wardman Park hotel, Washington DC, USA, 14-18 January, 2019 (Oral speaker)
4. International Conference on Recent Advances in Physics (ICRAP-2018), The University of Lahore, Lahore, Pakistan, 7-9th April, 2018 (Oral Speaker)
5. International Scientific Spring (ISS) 13-17 March, 2017, National Center for Physics (NCP), Islamabad, Pakistan (Oral Speaker)
6. International Conference on Materials Science and Nanotechnology (ICMSN), The University of Lahore, Lahore Pakistan, 25th Sep. 2016 (Oral Speaker)
7. IEEE International Magnetic Conference, Intermag, Beijing, China, 11-15th May, 2015 (Poster Presentation)
8. The Third International Conference of Asian Union of Magnetism Societies (IcAUMS), Haikou, China, Oct. 28th -Nov. 02nd, 2014 (Poster Presentation)
9. Chinese Physical Society Fall Meeting, Harbin Institute of Technology, Harbin, China 12-15th Sep. 2014 (Poster Presentation)
10. International Conference on Solid State Physics, University of the Punjab, Lahore, Pakistan, 01-06th Dec. 2013 (Oral Speaker)

Curriculum Vitae

Book Chapters

1. "Magnetic Random Access Memory (MRAM), Data Storage at the Nanoscale: Advances and Applications", Han Xiufeng and Syed Shahbaz Ali, Copyright © 2015 Pan Stanford Publishing Pte. Ltd. ISBN 978-981-4613-19-4, 281-362
2. Properties and Types of Superconductors, Superconductors Materials and Applications, M.S. Hasan and S.S. Ali* , Copyright © 2022, Published by Materials Research Forum LLC Millersville, PA 17551, USA
3. High Temperature Superconductors: Materials and Applications, Superconductors Materials and Applications, M.S. Hasan and S.S. Ali* , Copyright © 2022, Published by Materials Research Forum LLC Millersville, PA 17551, USA
4. Superconductors for Medical Applications, Superconductors Materials and Applications S.S. Ali* and M. Zulqarnain, Copyright © 2022, Published by Materials Research Forum LLC Millersville, PA 17551, USA
5. Superconductors for Magnetic Imaging Resonance Applications, Superconductors Materials and Applications, Ali Raza and S.S. Ali*, Copyright © 2022, Published by Materials Research Forum LLC Millersville, PA 17551, USA

Publications

1. Transition metals (Zn,Co) interplay in structural modifications of ferrites followed by low temperature magnetic features and optoelectronic trends, M. Zulqarnain, S. S. Ali, M. Rizwan, M. I. Khan, C. H. Wan and Ghalib ul Islam, J. Mater. Sci., published online <https://doi.org/10.1007/s10853-023-08906-5>
2. Structural modifications, low temperature magnetic behaviour and optoelectronic trends in A-site substituted spinel ferrites, M. Zulqarnain, S. S. Ali, C. H. Wan, Uzma Hira, Asif Hussain, Ghulam Farid, Mater. Sci. Eng. B, 298, 116829, 2023
3. Structural, optical, electrical and magnetic tuning based on Zn substitution at A site in yttrium doped spinel ferrites, M.S. Hasan, S.S. Ali, M.I. Khan, M. Rizwan, M. Zulqarnain, A. Hussain, Materials Chemistry and Physics, 301, 127538, 2023
4. Tailoring the structural, optical, photoluminescence, dielectric and electrical properties of $Zn_{0.6}Ni_{0.2}Mg_{0.2}Fe_{2-x}La_xO_4$ ($x=0.00, 0.0125, 0.0250, 0.0375$), A. Mujtaba, M.I. Khan, M.S. Hasan, S.S. Ali, W. Shahid, M. Fatima, H. S. M. Abd-Rabboh, A. sadaf, N. Alwadai, Journal of Materials Research and Technology, 23, 1-13, 2023
5. Structural, optical, electrical and magnetic properties of $Cu_{0.2}Zn_{0.2}Ni_{0.6-x}Mg_xFe_2O_4$ ($x = 0.00, 0.15, 0.30, 0.45, 0.60$) soft ferrites, M.S. Hasan, S.S. Ali, M. Rizwan, M.I. Khan, H.M. Naeem Ullah, M. I. Irfan, Journal of Alloys and Compounds, 956, 170392, 2023
6. Efficient hydrogen storage in $KCaF_3$ using GGA and HSE approach, S. Fatima, M. Rizwan, H. M. Naeem Ullah, S. S. Ali, H. Naeem, Z. Usman, Int. J. Hydrogen Energy, 48, 3566-3582, 2023
7. Effect of electronic alteration on hydrogen storage and optical response in $NaMgF_3$ using DFT approach, M. Rizwan, H. M. Naeem Ullah, Z. Usman, M. W. Yasin, Q. Ali, S. S. Ali, Published online, Int. J. Hydrogen Energy, 48, 33599-33609, 2023
8. $g-C_3N_4/Fe_3O_4$ composites synthesized via solid-state reaction and photocatalytic activity evaluation of methyl blue degradation under visible light irradiation, A. Ali, M. Amin, M. Tahir, S. S. Ali, A. Hussain, I. Ahmad, A. Mahmood, M. U. Farooq and M. A. Farid, Published online, Front. Mater. 10:1180646, 2023
9. Structural tuning interlinking various optical, dielectric and magnetic trends in annealed $Mn_{0.5}Zn_{0.5}Fe_2O_4$ spinel ferrites nanostructures, M. Zulqarnain, S. S. Ali, C. Cheng, K. Nadeem, M. Rizwan, Tauseef Anwar, J. Mag. Magn. Mater. 565,170252, 2023
10. Redshift of the optical gap in ferrite doped Gd_2O_3 , M. Azeem H. Khurshid, M. Ahmad and S. S. Ali, J. Appl. Phys. 132, 175113, 2022
11. Structural, optical, dielectric and photovoltaic properties of Sn doped CdS films prepared with green synthesis route, R. Jaffar, M. I. Khan, G. M. Mustafa, S. S. Ali, L. B. Farhat, Z. M. Elqahtani, N. Alwadai, Optical Materials 133, 112964, 2022
12. A DFT study of optical, elastic, mechanical, and overall water-splitting photocatalytic properties of pristine and Cd substituted $BaZrO_3$: A lead free environment friendly material, H. M. Naeem Ullah, M. Rizwan, S. S. Ali, Z. Usman, C. B. Cao, Mater. Sci. Eng. B, 286, 116041, 2022
13. Improved High-Temperature Thermoelectric Properties of Dual Doped $Ca_3Co_4O_9$, U. Hira, S. S. Ali, S. Latif, N. Pryds and F. Sher, ACS Omega, 7, 6579–6590, 2022

14. Recent advances in biox-based photocatalysts to enhanced efficiency for energy and environment applications, A. Hussain, J. H. Hou, M. Tahir, S. S. Ali, Z. Rehman, M. Bilal, T. T. Zhang, Q. Dou, and X. Z. Wang, *Catalysis Reviews*, Published online 24 March 2022, <https://doi.org/10.1080/01614940.2022.2041836>
15. A computational study for mechanical, thermoelectric and optoelectronic applications of BiAlO₃ under static pressure, H. M. Naeem Ullah, M. Rizwan, S. S. Ali, Z. Usman, X. Ma, C. B. Cao, *Journal of Physics and Chemistry of Solids*, 168, 110819, 2022
16. Taming the optical response via (Ca:Zr) co-doped impurity in c-BaTiO₃: A comprehensive computational insight, M. Maraj, A. Fatima, S.S. Ali, U. Hira, M. Rizwan, Z. Usman, W. H. Sun, A. Shaukat, *Materials Science in Semiconductor Processing* 144, 106573, 2022
17. Diverse morphological study for nonmetal-doped g-C₃N₄ composites with narrow bandgap for improved photocatalytic activity, A. Hussain, N. Ali, S. S. Ali, J. H. Hou, I. Aslam, H. Naeem, M. Boota, M. Hussain, J. Yin, X. Z. Wang, *Research on Chemical Intermediates*, 48,2857–2870, 2022
18. Fabrication, structural and magnetic behavior of novel one-dimensional Fe₂MnGa nanostructures, S. S. Ali, C. Cheng, S. Parajuli, X. M. Zhang, J. F. Feng, X. F. Han, *J. Mag. Magn. Mater.* 549, 169022, 2022
19. Superparamagnetic contributions, optical band gap tuning and dominant interfacial resistive mechanisms in ferrites nanostructures, M. Zulqarnain, S. S. Ali, U. Hira, J. F. Feng, M. I. Khan, M. Rizwan, K. Javed, G. Farid, M. S. Hasan, *Journal of Alloys and Compounds*, 894, 162431, 2021
20. Green Synthesis and Characterization of Copper Nanoparticles Using *Fortunella margarita* Leaves, R. Amjad, B. Mubeen, S. S. Ali, S. S. Imam, S. Alshehri, M. M. Ghoneim, S. I. Alzarea, R. Rasool, I. Ullah, M. S. Nadeem and I. Kazmi, *Polymers*, 13, 4364, 2021
21. Effect of Ce doping on the structural, optical, and photovoltaic properties of TiO₂ based dye-sensitized solar cells, M. I. Khan, A. Suleman, M. S. Hasan, S. S. Ali, T. I. Al-Muhimeed, A. A. Al Obaid, M. Iqbal, M. M. Almoneef, N. Alwadai, *Materials Chemistry and Physics*, 274, 125177, 2021
22. A computational study to explore the effects of copper doping concentration on phase stability, electronic band structure and optical properties of CsSrF₃ fluoro-perovskite, Muhammad Rizwan, Waqar Azam, S. S. A. Gillani, I. Zeba, M. Shakil, S. S. Ali & Riaz Ahmad, *Molecular Physics*, 119, 1892226, 2021
23. Temperature-Dependent Variations in Structural, Magnetic, and Optical Behavior of Doped Ferrites Nanoparticles, M. Saqib, S. S. Ali, M. Zulqarnain, Muhammad U. Qadri, M. Riaz, M. S. Hasan, M. I. Khan, M. Tahir, M. I. Arshad, H. S. Rani, *J. Supercond. Nov. Magn.* 34, 609-616, 2021
24. Titania nanotube array decorated in polymer matrix as a free-standing anode material for lithium-ion batteries, T. Anwar, R. R. Sagar, S. Sheraz, F. Nosheen, S. Aslam, S. N. Shah, S. S. Ali, Y. Hui, T. X. Liang, *Materials Today Communications*, 26, 101760, 2021
25. Study of Electrical Transport Properties of Cadmium-Doped Zn–Mn Soft Ferrites by Co-precipitation Method, M. Ajaz Un Nabi, M. Moin, M. S. Hasan, M. I. Arshad, A. Bibi, N. Amin K. Mahmood, S. S. Ali, 34, 1813-1822, 2021
26. Magnetization behavior of NiMnGa alloy nanowires prepared by DC electrodeposition, K Javed, X. M. Zhang, S. Parajuli, S. S. Ali, N. Ahmad, S. A. Shah, M. Irfan, J. F. Feng, X. F. Han, *J. Magn. Mater.*, 498, 166232, 2020
27. A two-step fabrication and characterization of 1D hybrid ferromagnetic-multiferroic Ni-BiFe_{1-x}Co_xO₃ core-shell nanostructures, K. Javed, X. M. Zhang, S. Parajuli, S. S. Ali, N. Ahmad, M. Irfan, J. F. Feng and X. F. Han, *J. Magn. Mater.*, 493, 165738, 2020
28. Fabrication, structural and magnetic properties of one-dimensional anti-ferromagnetic FeMn nanostructures, S. S. Ali, W. J. Li, X. M. Zhang, M. Irfan, J. F. Feng, K. Javed, G. J. Zhai and X. F. Han, *AIP Advances*, 9, 035225, 2019
29. Stacked Layer Effect of ZnO/TiO₂ on the Efficiency of Dye Sensitized Solar Cells, M. I. Khan, Muhammad Saleem, Saif Ur Rehman, S. S. Ali, Muhammad U. Qadri, Naseeb Ahmed, M. Sufyan Javed and Javed Iqbal, *J. Nanoelectron. Optoelectron.* 13, 1-6, 2018
30. Mg and La co-doped ZnNi spinel ferrites for low resistive applications, S. Hasan, M. Arshad, A. Ali, K. Mahmood, N. Amin, S. S. Ali; Khan, M. G. Mustafa, J. Khan, M. Saleem, *Mater. Res. Express*, 6, 016302, 2018

31. Magnetic field annealing effect and superparamagnetic contributions in one-dimensional CoPt nanostructures, S. S. Ali, W. J. Li, K. Javed, M. Irfan, Fazal-e-Aleem, G. J. Zhai and X. F. Han, *J. Alloys Comp.* 722, 83-87, 2017
32. Influence of Nd³⁺ substitution on physical, electrical and dielectric properties of Ba₂Zn₂Fe₁₂O₂₂ hexagonal ferrites prepared by sol-gel auto combustion method, M. Irfan, M. Usman, A. Elahi, U. Khan, T. Khan, K. Javed, S. S. Ali, A. Shakoor, *Mater Sci: Mater Electron*, 27, 3637, 2016
33. Utilizing the anti-ferromagnetic functionality of multiferroic shell to study exchange bias in hybrid core-shell nanostructures, S. S. Ali, W. J. Li, K. Javed, D. W. Shi, S. Riaz, Y. Liu, Y. G. Zhao, G. J. Zhai and X. F. Han, *Nanoscale*, 7, 13398, 2015
34. Exchange bias in two-step artificially grown one dimensional hybrid Co-BiFeO₃ core-shell nanostructures, S. S. Ali, W. J. Li, K. Javed, D. W. Shi, S. Riaz, G. J. Zhai and X. F. Han, *Nanotechnology*, 27, 4, 2015
35. Low frequency noise in magnetic tunneling junctions with Co₄₀Fe₄₀B₂₀/Co_{70.5}Fe_{4.5}Si₁₅B₁₀ composite free layer, Z. H. Yuan, J. F. Feng, Peng Guo, C. H. Wan, H. X. Wei, S. S. Ali, X. F. Han, T. Nakano, H. Naganuma, Y. Ando, *J. Magn. Magn. Mater.* 398, 215, 2015
36. Enhanced exchange bias and improved ferromagnetic properties in Permalloy-BiFe_{0.95}Co_{0.05}O₃ core-shell nanostructures, K. Javed, W. Li, S. S. Ali, D. W. Shi, U. Khan, S. Riaz, and X. F. Han, *Scientific Reports*, 5, 18203, 2015
37. Spin Hall magnetoresistance in CoFe₂O₄/Pt Films, H. Wu, Q. T. Zhang, C. H. Wan, S. S. Ali, Z. H. Yuan, Lu You, J. Wang and X. F. Han, *IEEE Transactions on Magnetism*, VOL. 51, NO. 11, 2015
38. Nonlocal ordinary magnetoresistance in indium arsenide, Pan. Liu, Zhonghui. Yuan, Hao. Wu, S. S. Ali, Caihua. Wan, Shiliang. Ban, *J. Magn. Magn. Mater.* 385, 292, 2015
39. Post magnetic field annealing effect on magnetic and structural properties of Co₈₀Pt₂₀ nanowires and nanotubes fabricated by electrochemical method, S. S. Ali, K. Javed, D. W. Shi, L. L. Tao, J. Jiang, G. J. Zhai and X. F. Han, *J. Appl. Phys.* 115, 17A762, 2014
40. Exchange-biased hybrid ferromagnetic-multiferroic core-shell nano-structures, D. W. Shi, K. Javed, S. S. Ali, J. Y. Chen, P. S. Li, Y. G. Zhao and X. F. Han, *Nanoscale*, 6, 7215, 2014
41. Magnetic Field Annealing Effects on Magnetic Properties of Electrodeposited Co/Cu Multilayered Nanowires, K. Javed, D. W. Shi, S. S. Ali, J. Jiang, P. Liu and X. F. Han, *IEEE Transactions on Magnetism*, Vol. 50, No. 8, 2014
42. Perpendicular magnetic anisotropy in Ta|Co₄₀Fe₄₀B₂₀|MgAl₂O₄ structures and perpendicular CoFeB|MgAl₂O₄|CoFeB magnetic tunnel junction, B. S. Tao, D. L. Li, Z. H. Yuan, H. F. Liu, S. S. Ali, J. F. Feng, H. X. Wei, X. F. Han, Y. Liu, Y. G. Zhao, Q. Zhang, Z. B. Guo and X. X. Zhang, *Appl. Phys. Lett.* 105, 102407, 2014
43. Perpendicular magnetic tunnel junction and its application in magnetic random access memory, L. H. Fang, S. S. Ali and X. F. Han, *Chin. Phys. B*, Vol. 23, No. 7, 077501, 2014
44. Nonlocal magnetoresistance due to Lorentz force in linear transport region in bulk silicon, C. H. Wan, Z. H. Yuan, P. Liu, H. Wu, P. Guo, D. L. Li and S. S. Ali, *Appl. Phys. Lett.* 103, 262406, 2013
45. MgO(001) barrier based magnetic tunnel junctions and their device applications, X. F. Han, S. S. Ali & S. H. Liang, *Science China*, Vol. 56, 29, 2013
46. Power Macromodelling for CMOS inverter of 0.12 μm Technology, S. Naseem, S. Riaz, M. Azam, S. S. Ali, Y. A. Durrani, *International Conference on Advance Computer Science and Electronics Information (ICACSEI)*, 2013