

DR. ATHAR JAVED

Professor of Physics

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EDUCATION

Ph.D Materials Physics	University of Sheffield, UK
M.Phil Solid State Physics	University of the Punjab, Lahore
M.Sc Physics	University of the Punjab, Lahore
Bachelor of Science (B.Sc.)	University of the Punjab, Lahore
F.Sc / Higher Secondary School Certificate	Board of Intermediate and Secondary Education, Faisalabad
Matriculation / Secondary School Certificate	Board of Intermediate and Secondary Education, Faisalabad

AWARDS / DISTINCTIONS / FELLOWSHIPS

- 1st position in Secondary School / Matric Examination at District Level.
- President Scholarship during Secondary school and Higher Secondary School / College education.
- Merit Scholarship in M. Sc awarded by University of the Punjab, Lahore-Pakistan.
- University Grant Commission (UGC) Scholarship (awarded by UGC during two years of M.Phil study).
- HEC Overseas Scholarship (*under Faculty Development Program*) for three years PhD study (2007-2010).

HONOURS / AWARDS ON THE BASIS OF PERFORMANCE

- Recipient of Incentive Award on Research Publications for consecutive **Years 2011-2020**. This award was given by the University of the Punjab, Lahore on the basis of research publications.
- Recipient of Performance Evaluation Award (PEA) for consecutive **Years 2011-2020**. This award was given by University of the Punjab, Lahore on the basis of annual performance.

FIELD OF RESEARCH INTEREST

- Semiconductor materials
- Carbide and ceramic oxide materials
- Magnetic materials, Heusler alloys, diluted magnetic semiconductors
- Hard ceramic coatings / TBC materials

LIST OF RESEARCH PUBLICATIONS¹

1. **A. Javed**, Nauman Khan, S. Bashir, M. Ahmad, M. Bashir “*Thickness dependent structural, electrical and optical properties of cubic SnS thin flms*” *Materials Chemistry and Physics* **246** (2020) 122831.
2. M. A. Rafiq, **A. Javed**, M. N. Rasul, M. A. Khan, A. Hussain, “*Understanding the structural, electronic, magnetic and optical properties of spinel MFe_2O_4 ($M = Mn, Co, Ni$) ferrites*” *Ceramics International* **46** (2020) 4976-4983.
3. M. N. Rasul, **A. Javed**, M. A. Khan, A. Hussain “*Study of the structural, mechanical, electronic and magnetic properties of quaternary $YFeCrX$ ($X = Al, Ga, In, Si, Ge, Sn, P, As, Sb$) Heusler alloys*” *Journal of Magnetism and Magnetic Materials* **476** (2019) 398-411.
4. M. N. Rasul, **A. Javed**, M. A. Khan, A. Hussain “*Structural stability, mechanical, electronic and magnetic behaviour of quaternary $ScNiCrX$ ($X = Al, Ga$) Heusler alloys under pressure*” *Materials Chemistry and Physics* **222** (2019) 321-332.

¹All research papers are published in Peer-Reviewed International Journals which exist in the list of Journal Citation Reports (JCR) indexed by International Scientific Indexing (ISI web of science) according to Thomson Reuters Citation Report 2019/2020.

5. **A. Javed**, T. Szumiata, A. Sarwar, T. Fatima “Structure and Mössbauer spectroscopy studies of $Ni_{0.5}Zn_{0.5}Nd_xFe_{2-x}O_4$ ($0.00 \leq x \leq 0.10$) ferrites” Materials Chemistry and Physics **221** (2019) 99-107.
6. **A. Javed**, Qurat-ul-Ain, M. Bashir “Controlled growth, structure and optical properties of Fe-doped cubic π -SnS thin films” Journal of Alloys and Compounds **759** (2018) 14-21.
7. S. Mehmood, **A. Javed**, M. N. Rasul, M. A. Khan, A. Hussain “Electronic structure, bonding behavior and optical properties of $(HfC)_mAl_4C_3$ ($m = 1, 2, 3$) carbides” Journal of Alloys and Compounds **741** (2018) 76-84.
8. T. Szumiata, M. Gzik-Szumiata, K. Brzózka, B. Górka, M. Gawroński, **A. Javed**, K. Farman, T. Fatima “Magnetism and structure evolution in Ni–Zn ferrites thin films-CEMS study” Acta Physica Polonica A **131** (2017) 836-838.
9. M. N. Rasool, A. Hussain, **A. Javed**, M. A. Khan “Study of the structural, electronic and magnetic properties of $ScFeCrT$ ($T = Si, Ge$) Heusler alloys by first principles approach” Journal of Magnetism and Magnetic Materials **426** (2017) 421-428.
10. M. N. Rasool, A. Hussain, **A. Javed**, M. A. Khan, F. Iqbal “Structural stability, electronic and magnetic behaviour of spin-polarized $YCoVZ$ ($Z = Si, Ge$) and $YCoTiZ$ ($Z = Si, Ge$) Heusler alloys” Materials Chemistry and Physics **183** (2016) 524-533.
11. A. Hussain, **A. Javed**, S. Mehmood, M. N. Rasool, M. A. Khan, F. Iqbal “Structure, electronic, mechanical and optical properties of ternary YAl_3C_3 carbide” Journal of Solid State Chemistry **237** (2016) 336-342.
12. **A. Javed**, Hina G. Durrani, C. Zhu “The effect of vacuum annealing on the microstructure, mechanical and electrical properties of tantalum films” Int. Journal of Refractory Metals and Hard Materials **54** (2016) 154-158.
13. X. Y. Liu, X. Z. Wang, **A. Javed**, C. Zhu, G. Y. Liang “The effect of sintering temperature on the microstructure and phase transformation in tetragonal YSZ and LZ/YSZ composites” Ceramics International **42** (2016) 2456-2465.

14. Q. Mahmood, **A. Javed**, G. Murtaza, S. M. Alay-e-Abbas “*Study of the $Zn_{0.75}M_{0.25}Te$ ($M = Fe, Co, Ni$) diluted magnetic semiconductor system by first principles approach*” *Materials Chemistry and Physics* **162** (2015) 831-838.
15. X. Z. Wang, X. Y. Liu, **A. Javed**, C. Zhu, G. Y. Liang “*Phase transition behavior of yttria-stabilized zirconia from tetragonal to monoclinic in the lanthanum zirconate/yttria-stabilized zirconia coupled-system using molecular dynamics simulation*” *Journal of Molecular Liquids* **207** (2015) 309-314.
16. C. Zhu, Y. G. Wang, L. N. An, **A. Javed**, P. Xiao, G.Y. Liang “*Microstructure and oxidation behavior of conventional and pseudo graded NiCrAlY/YSZ thermal barrier coatings produced by supersonic air plasma spraying process*” *Surface and Coatings Technology* **272** (2015) 121-128.
17. F. Guo, **A. Javed**, Ping Xiao “*Microstructure, oxidation behaviour and mechanical properties of Fe_2O_3 doped yttria-partially-stabilized zirconia coatings produced on metallic substrates by electrophoretic deposition*” *Surface and Coatings Technology* **264** (2015) 17-22.
18. Y. Long, **A. Javed**, J. Chen, Z. -k. Chen, X. Xiong “*The effect of deposition temperature on the microstructure and mechanical properties of TaC coatings*” *Materials Letters* **121** (2014) 202-205.
19. Y. Long, **A. Javed**, J. Chen, Z. -k. Chen, X. Xiong “*Phase composition, microstructure and mechanical properties of ZrC coatings produced by chemical vapor deposition*” *Ceramics International* **40** (2014) 707-713.
20. Y. Zhang, **A. Javed**, M. Zhou, S. Liang, P. Xiao “*Fabrication of Mn-Co spinel coatings on Crofer 22 APU Stainless Steel by electrophoretic deposition for interconnect applications in solid oxide fuel cells*” *Inter. J. Appl. Ceram. Technol.* **11** (2014) 332-341.
21. Y. Long, **A. Javed**, Z. -k. Chen, X. Xiong, P. Xiao “*Deposition rate, texture, and mechanical properties of SiC coatings produced by chemical vapor deposition at different temperatures*” *Int. J. Appl. Ceram. Technol.* **10** (2013) 11-19.

22. Y. Zhang, S. Liang, **A. Javed**, D. Guan “*Effect of pass deformation on microstructure, corrosion and electrochemical properties of aluminum alloy anodes for alkaline aluminum fuel cell applications*” *Met. Mater. Int.* **19** (2013) 555-561.
23. Y. Long, **A. Javed**, Y. Zhao, Z. -k. Chen, X. Xiong, P. Xiao “*Fiber/matrix interfacial shear strength of C/C composites with PyC-TaC-PyC and PyC-SiC-TaC-PyC multi-interlayers*” *Ceramics International* **39** (2013) 6489-6496.
24. S. Kotapati, **A. Javed**, N. Reeves-McLaren, M. R. J. Gibbs, N. A. Morley “*Effect of the Ni₈₁Fe₁₉ thickness on the magnetic properties of Ni₈₁Fe₁₉/Fe₅₀Co₅₀ bilayers*” *J. Magn. Magn. Mater.* **331** (2013) 67-71.
25. T. Szumiata, B. Górka, K. Brzózka, M. Gawroński, M. Gzik-Szumiata, **A. Javed**, N. A. Morley, M. R. J. Gibbs “*Mössbauer study of vacuum annealed Fe_{100-x}Ga_x (10 ≤ x ≤ 35) thin films*” *Nukleonika* **58** (2013) 27-30.
26. C. Zhu, **A. Javed**, P. Li, G. Y. Liang, P. Xiao “*Study of the effect of laser treatment on the initial oxidation behaviour of Al-coated NiCrAlY bond-coat*” *Surf. Interface Anal.* **45** (2013) 1680-1689.
27. W. Huang , C. Zhu, X. Y. Liu, **A. Javed**, P. Li, G. Y. Liang, P. Xiao “*A comparative study of the microstructure and oxidation behavior in supersonic and conventional air plasma sprayed thermal barrier coatings*” *Surface and Coating Technology* **235** (2013) 853-859.
28. C. Zhu, **A. Javed**, P. Li, F. Yang, G.Y. Liang , P. Xiao “*A study of the microstructure and oxidation behavior of alumina/yttria-stabilized zirconia (Al₂O₃/YSZ) thermal barrier coatings*” *Surface and Coating Technology* **212** (2012) 214-222.
29. C. Zhu, P. Li, **A. Javed**, G.Y. Liang, P. Xiao “*An investigation on the microstructure and oxidation behavior of laser remelted air plasma sprayed thermal barrier coatings*” *Surface and Coating Technology* **206** (2012) 3739-3746.
30. H. Zhang, E. L. Honorato, **A. Javed**, I. Shapiro, P. Xiao “*A Study of the Microstructure and Vickers Indentation Fracture Toughness of Silicon Carbide Coatings on TRISO Fuel Particles*” *J. Am. Ceram. Soc.* **95** (2012) 1086-1092.

31. H. Zhang, E. L. Honorato, **A. Javed**, X. Zhao, J. Tan, P. Xiao “A study of the microstructure and mechanical properties of SiC coatings on spherical particles” J. Euro. Ceram Soc. **32** (2012) 1775-1786.
32. F. Guo, **A. Javed**, I. P. Shapiro, P. Xiao “Effect of HCl concentration on the sintering behavior of 8 mol% Y_2O_3 stabilized ZrO_2 deposits produced by electrophoretic deposition (EPD)” J. Euro. Ceram Soc. **32** (2012) 211-218.
33. Y. Long, **A. Javed**, I. Shapiro, Z. -k Chen, X. Xiong, P. Xiao “The effect of substrate position on the microstructure and mechanical properties of SiC coatings on carbon/carbon composites” Surface and Coating Technology **206** (2011) 568–574.
34. J. Dean, M. T. Bryan, N. A. Morley, G. Hrkac, **A. Javed**, Gibbs, M. R. J. Gibbs, D. A. Allwood, “Numerical study of the effective magnetocrystalline anisotropy and magnetostriction in polycrystalline FeGa films” J. Appl. Phys. **110** (2011) 043902.
35. **A. Javed**, N. A. Morley, T. Szumiata, M. R. J. Gibbs “A comparative study of the microstructural and magnetic properties of $\langle 110 \rangle$ textured thin polycrystalline $Fe_{100-x}Ga_x$ ($10 \leq x \leq 35$) films” Appl. Surf. Sci. **257** (2011) 5977-5983.
36. **A. Javed**, N. A. Morley, M. R. J Gibbs “Effect of growth parameters on the structure and magnetic properties of thin polycrystalline Fe films fabricated on Si(100) substrates” Appl. Surf. Sci. **257** (2011) 5586-5590.
37. T. Szumiata, K. Brzózka, M. Gawroński, B. Górka, **A. Javed**, N. A. Morley, M. R. J. Gibbs “Structural and Magnetic Ordering in Fe-Ga Thin Films Examined by Mössbauer Spectrometry” Acta Physica Polonica A **119** (2011) 21-23.
38. **A. Javed**, J. B. Sun “An investigation of structural phase transformation and electrical resistivity in Ta films” Appl. Surf. Sci. **257** (2010) 1211-1215.
39. **A. Javed**, T. Szumiata, N. A Morley, M. R. J. Gibbs, “An investigation of the effect of structural order on magnetostriction and magnetic behavior of Fe-Ga alloy thin films” Acta Mater. **58** (2010) 4003-4011.
40. **A. Javed**, N. A. Morley, M. R. J. Gibbs, “Thickness dependence of magnetic and structural properties in $Fe_{80}Ga_{20}$ thin films” J. Appl. Phys. **107** (2010) 09A944.

41. J. B. Sun, **A. Javed**, Z. X. Zhang, C. X. Cui, M. X. Zhang, R. P. Han “*Effect of B addition on the microstructure and magnetic properties of melt-spun $Sm_{12}Co_{60-x}Fe_{19}Cu_6Zr_3B_x$ ($0 \leq x \leq 3$) ribbons*” J. Mater. Sci. Eng. B **167** (2010) 102-106.
42. **A. Javed**, N. A. Morley, M. R. J. Gibbs, “*Structure, magnetic and magnetostrictive properties of as-deposited Fe-Ga thin films*” J. Magn. Mater. **321** (2009) 2877-2882.
43. N. A. Morley, **A. Javed**, M. R. J. Gibbs, “*Effect of a forming field on the magnetic and structural properties of thin Fe-Ga films*” J. Appl. Phys. **105** (2009) 07A912.
44. N. A. Morley, S.-L Yeh, S. Rigby, **A. Javed**, M. R. J. Gibbs, “*Development of a co-sputter-evaporation chamber for Fe-Ga films*” J. Vac. Sci. Technol. A **26** (2008) 581-586.

CONFERENCE, WORKSHOPS AND SYMPOSIUMS ATTENDED

1. Tutorial Course and Symposium on “**Topics in Semiconductors and Workshop on Nanotechnologies**” held at Quaid-i-Azam University, Islamabad – Pakistan. (April 12-17, 2004)
2. “**10th National Symposium on Frontiers in Physics**” at Government College University, Lahore – Pakistan. (January 11-14, 2005)
3. **HEC Staff Development Course** under the scheme “**National Academy of Higher Education**” held from May 9th - June 4th, 2005 at Human Resource Development Centre, University of the Punjab, Lahore – Pakistan.
4. 30th International Nathiagali Summer Collage on Physics and Contemporary Needs, 2005 (Participate in Acativity-2) on “**Nano-Science and its Applications**” from 4th - 9th July, 2005.
5. 7th HRDC Faculty Orientation Program 2005, held from October 3rd-14th, 2005 at Human Resource Development Centre, University of the Punjab, Lahore-Pakistan.
6. Attend “**1st Meeting of Nobel Laureates with Pakistani Students / Young Scholars**” in the Bokhari Auditorium GC University, Lahore – Pakistan, on March 30th and 31st, 2006. (Selected by the Organizing Committee for this unique opportunity).

7. One Day International Symposium on Relativity held on April 6, 2006, at Department of Mathematics, University of the Punjab, Q.A.C Lahore-54590-Pakistan.
8. Workshop on “Advanced Material Analysis for Solving Industrial Problems” Organized by Sorby Nano Investigation Centre on April 2, 2008 at The Millennium Galleries, Sheffield, UK.
9. One day Workshop on “**Magnetism at the Interface between magnetism and biological sciences**” Organized by UKRI Chapter of the IEEE Magnetic Society on July 23, 2008 at North Campus Conference Centre, University of Sheffield, UK.
10. “Materials Microscopy Workshop” organized by Imaging Associates Limited on April 7, 2009 held at University of Sheffield, UK.
11. “Postgraduate Workshop on Magnetic Imaging” organized by The Magnetism Group of the Institute of Physics (IOP) on June 17, 2009 at University of Leeds, Leeds, UK.
12. Postgraduate Conference organized by UKRI Chapter of the IEEE Magnetic Society, Wolfson Centre for Magnetism, Cardiff University, July 9, 2009. (Poster Presentation).
13. EUROMAT Conference, September 7-10, 2009, Glasgow, UK (Oral Presentation).
14. One day workshop on “Image-based Simulation for Biomechanics, Materials Applications, and Reverse Engineering” University of Sheffield, September 30, 2009.
15. One day Symposium on “Magnetism-IEEE Magnetic Society Meeting and IEEE distinguish lectures” organized by UKRI Chapter of the IEEE Magnetic Society at University of York, UK, May 07, 2010.
16. Participated in “*International Conference on Impact of Nanoscience on Energy Technologies (Nano-SET 2014)*” held on March 18-22, 2014 at COMSATS Institute of Information Technology, Lahore-Pakistan.
17. Conference on “*Frontiers of Nanoscience and Nanotechnology*” held on June 03-05, 2014 at Pakistan Institute of Nuclear Science and Technology (PINSTECH), Islamabad-Pakistan (Oral Presentation).
18. International Conference on Solid State Physics, 2015 (ICSSP’15) held on December 13-17, 2015 at University of the Punjab, Lahore (Poster Presentation).
19. 16th Czech and Slovak Conference on Magnetism, 2016 (CSMAG’16) held on June 13th-17th 2016, Košice, Slovakia (Poster Presentation on “*Magnetism and Structure Evolution in Ni-Zn Ferrites Thin Films – CEMS Study*”. This poster was presented by one of the co-worker’s Dr. T. Szumiata in this work).

20. PU International Symposium on “*Advanced Energy Storage Materials (PU-AESM-2019)*” held on November 04-06, 2019 at Department of Physics, University of the Punjab, Lahore-Pakistan (*Member, Local Advisory Committee*).
21. One day National Symposium on “*Advanced Nanomaterial’s and their Applications*” held on Nov. 13, 2019 at Lahore Garrison University, Lahore. (Oral Presentation/Invited Talk).

PROFESSIONAL EXPERIENCE / EMPLOYMENT HISTORY

- **Professor**, Department of Physics, University of the Punjab, Quaid-i-Azam Campus, Lahore-54590, Pakistan.
(August 25, 2020 – To date)
- **Assistant Professor**, Department of Physics, University of the Punjab, Quaid-i-Azam Campus, Lahore-54590, Pakistan.
(October 20, 2011 – August 24, 2020)
- **Lecturer**, Department of Physics, University of the Punjab, Quaid-i-Azam Campus, Lahore-54590, Pakistan.
(July 1, 2004 – October 20, 2011)
- **Scientific Officer**, Pakistan Institute of Nuclear Science and Technology (PINSTECH), P. O. Nilore, Islamabad – Pakistan.
(February 26, 2004 – June 30, 2004)
- **Research Associate / Lecturer**, Centre of Excellence in Solid State Physics, University of the Punjab, Quaid-i-Azam Campus, Lahore-54090, Pakistan.
(March 1, 2003 – February 25, 2004)
- **Lecturer**, Government Zimindar Degree Science College, Gujrat, Pakistan.
(September 6, 2002 – February 28, 2003)

MEMBERSHIP OF PROFESSIONAL ORGANIZATIONS / SOCIETIES

- Life Member, Association of Ex-Students of Physics (AESOP), University of the Punjab, Lahore, Pakistan
- Life Member, Pakistan Institute of Physics (PIP)
- Life Member, Pakistan Physical Society (PPS)
- Member, IEEE Magnetic Society

- Member, Institute of Physics (IOP)

MEMBER DEPARTMENTAL COMMITTEES

- Member, Departmental Doctoral Programme Committee (DDPC)
- Member, Board of Studies (BOS) in Physics
- Member, Curriculum Review Committee
- Member, Graduate Admissions Committee
- Member, Undergraduate Admissions Committee
- Member, Laboratories and Infrastructure Committee
- Member, Technical Review Committee
- Member, Departmental Purchase Committee
- Member, Departmental Quality Enhancement Cell (QEC)
- Coordinator, Departmental Research and Development Committee

MEMBER UNIVERSITY STATUTORY BODIES / COMMITTEES

- Member Senate, University of the Punjab, Lahore (Since August 2020 – To date)
- Member Academic Council, University of the Punjab, Lahore (Since August 2020 – To date)
- Member, Board of Faculty of Science (Since August 2020 – To date)
- Member Board of Studies (BOS) in Physics (Since August 2020 – To date)

INTERNATIONAL SCIENTIFIC COMMITTEES

- Scientific Committee Member at *The 5th International Conference on Nano Science and Nanotechnology (ICNSNT) 2018* held in Colombo, Sri Lanka from 13th - 14th of December 2018.

(Role was to review abstracts and papers to be presented at the ICNSNT 2018 conference)