ZAHID USMAN

PERSONAL INFORMATION

Nationality: Pakistani
Present Address: Department of Physics, University of Education
Lahore, Dera Ghazi Khan Campus, Pakistan
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RESEARCH INTEREST

- Synthesizes and characterization of ZnO/Cu_2O thin film solar cells.
- Green Synthesis of different nanoparticle for waste-water treatment.
- Spectroscopic investigation of III-V nitrides (GaN, InN, AlN).
- Studying deep defects in wide band gap Semiconductors (GaN)
- Simulation of III-V Nitrides, Oxides and Perovskites using density functional theory.

ACADEMIC QUALIFICATIONS

PhD in Material Science & Engineering (2009- 2013)

At Beijing Institute of Technology, China

- Field of Specialization: Materials Physics and Chemistry (Theoretical)

Academic Achievements and Awards

- Alexander-von-Humboldt Postdoctoral fellowship at Institute of Experimental Physics (2015-2017) Otto-von-Guericke University, Magdeburg, Germany
- Fully funded PhD scholarship at Beijing Institute of Technology under Chinese Govt. scholarship scheme (2009-2013).
- Best International Student Award for PhD research in Year 2012, at BIT China

RESEARCH Skills

a. Synthesis and Characterization Skills

- Hydrothermal and Green Synthesis Techniques
- UV-Visible Spectroscopy
- Thin Film preparation using Spin Coater
- Spectroscopic Ellipsometry (UV and IR)
- Photoluminescence Spectroscopy (Low temperature/ room temperature)
- Raman Spectroscopy
- SEM

b. Computational Skills

- CASTEP
- DMole3
- ARTEMIS (SILVACO)

RESEARCH PROJECTS/GRANTS/DONATIONS WON AT NATIONAL/INTERNATIONAL LEVEL

1. Lab equipment grant for University of Education to initiate research on the topic entitled "Water purification via $Co(OH)_2$ coated ZnO nanocomposite" approved by Alexander von Humboldt Foundation Germany, under Lab Equipment Subsidy programme on June 30, 2019, Worth PKR 3.125 Million (Completed).
2. Perovskite Solar Cell, Startup Research grant as co- P.I, worth PKR PKR 0.991 Million awarded by HEC Islamabad 2021/22 (Completed).
3. Experimental synthesis and computational modeling of Hetrostructures for solar cell application as co-P.I worth PKR 2.9665 Million under NRPU, awarded by HEC, Islamabad (In Progress).
4. Book donation grant for University of Education Lahore, worth Rs. 0.172M secured from Alexander von Humboldt Foundation (AvH Alumni programme), on November 07, 2019.

EMPLOYMENT HISTORY

1. Associate Professor of Physics and Principal, University of Education Lahore, D. G. Khan Campus (October 12, 2020 to date)
2. Assistant Professor, Department of Physics, University of Education Lahore, D. G. Khan Campus (January 05,2018 to October 12, 2020)
3. Assistant Professor, Department of Physics, The University of Lahore, Lahore Pakistan (December 10,2014 to January 04,2018)
4. Assistant Professor, Department of Physics, Gomal University, D. I. Khan, Pakistan (October 10, 2013 to September 2014)
5. Lecturer Physics, Department of Physics, University of Science & Technology Bannu, Pakistan (October 13, 2008 to September 10, 2009)
6. Research Associate at Department of Physics, Gomal University, D. I. Khan, Pakistan (January 15, 2007 - October 10, 2008)

Major Administrative Posts Held at University of Education Lahore

- Presently serving as Principal D. G. Khan Campus
- Coordinator Department of Physics (at Present)
- Chairman Campus level admission Committee (at Present)
- Convener Purchase Committee (at Present)
- Coordinator Student Counseling (at Present)
- Member of BOS and Faculty BOS and BASR (at Present)
- Member PhD Committee for Course designing for Physics at University Level (at Present)
- Programme Assessment Team Member (2018-2020)
- Security In-charge Campus D. G. Khan (2018)

LIST OF PUBLICATIONS

1. Probing hydrogen storage through cation replacement in CaNiH3 for clean environment: A computational explaination, Muhammad Rizwan, Muhammad Mohsin Iqbal, Muhammad Waseem Yasin, Abdul Hafeez, Zahid Usman, Zia ur Rehman, Surajudeen Sikiru, Salahuddin Khan, Muhammad Jahangir Khan, Journal of Physics and Chemistry of Solids 204, 112778 (2025). **(I.F: 4.00)** https://doi.org/10.1016/j.jpcs.2025.112778.
2. Tuning the properties of SrI2: A DFT study on the contributions of S and Se doping, Hafeez Ur Rehman, Zahid Usman, M Usman Abdullah, Ahmad Usman, Chemical Physics, 598, 112841 (2025). **(I.F:)** https://doi.org/10.1016/j.chemphys.2025.112841
3. Unveiling pressure-driven tunability of structural, electronic, mechanical and optical characteristics in CsPbBr3 based on a DFT study, Sheeza Mumtaz, M Rizwan, M Abaid Ullah, SS Ali, Z Usman, T Mahmood, Next Materials, 8,100761 (2025). **(I.F:0)** https://doi.org/10.1016/j.nxmate.2025.100761.
4. Facile eco-friendly synthesis of magnesium oxide nanocarriers using Bauhinia variegata for biomedical and photocatalytic applications, Farooq Aziz, Allah Bakhsh Gulshan, Zahid Usman, Mubashar Rehman, Qandeel Khalid, Muhammad Naeem Khan, Muhammad Usman Munir, Hafiz Tariq Masood, Muhammad Rafique, Results in Chemistry, 15, 02248 (2025). **(I.F:4.20)** https://doi.org/10.1016/j.rechem.2025.102248.
5. Density Functional Theory (DFT) perspectives of thermoelectric transportation in Sr-doped LaCoO3, oha Afzal, Sajid Butt, Muhammad Rizwan, Sajid Ur Rehman, Saeeda Sajjad, Zahid Usman, Ghulam M Murtaza, Next Materials. 7.100383 (2025).**(I.F:0)** https://doi.org/10.1016/j.nxmate.2024.100383.

6. Exploring novel characteristics of GaBaX3 (X= F, Cl, Br, I, H) for energy harvesting applications: A DFT-based analysis, Hamza Naeem, Muhammad Abaid Ullah, Abid Hussain, Yahya Sandali, Zahid Usman, Muhammad Rizwan, International Journal of Hydrogen Energy, 05, 203-213 (2025). **(I.F: 8.30)** https://doi.org/10.1016/j.ijhydene.2025.01.318 .

7. DFT calculations of pressure effects on structural stability, optoelectronic and thermoelectric properties of SrZrO3, Muhammad Rizwan, Hafiz Muhammad Naeem Ullah, Syed Shahbaz Ali, Uzma Hira, Hamza Naeem, Zahid Usman, Journal of Optical and Quantum Electronics, Volume 56, Issue 12, 1902 (2024). **(I.F: 4.00)** https://doi.org/10.1007/s11082-024-06495-4.

8. Engineering of self-assembled silver-peptide colloidal nanohybrids with enhanced biocompatibility and antibacterial activity, Nyla Saeed, Atia Atiq, Farhat Rafiq, Iliyas Khan, Maria Atiq, Muhammad Saleem, Dalaver H Anjum, Zahid Usman, Manzar Abbas, Scientific Reports 14 (1), 26398, (2024). **(I.F: 3.90)** https://doi.org/10.1038/s41598-024-78320-7 .

9. Computational systematic study of pressure driven changes in electronic, optical, elastic, mechanical, thermodynamic and thermoelectric properties of CaZrO3 for optoelectronic Applications, Muhammad Rizwan, Hafiz Muhammad Naeem Ullah, Syed Sajid Ali Gillani, Muhammad Farman, **Zahid Usman**, Zia ur Rehman, ***Journal of Physics and Chemistry of Solids***, 112150,2024 **(I.F: 4.00).** https://doi.org/10.1016/j.jpcs.2024.112150.

10. A DFT investigation on halide double perovskites X2ScTlI6 (X= Rb, Cs) for thermoelectric and optoelectronic applications, Hafeez Ur Rehman, Muhammad Jamil, Ning Wang, G Murtaza, Maleeha Shafiq, Muhammad Usman, Zahid Usman, Muhammad Zulfiqar, Moonis Ali Khan,

Materials Today Communications 40,109806 (2024). **(I.F:4.50).** https://doi.org/10.1016/j.mtcomm.2024.109806.

11. Computational study to investigate effectiveness of titanium substitution in CaFeH3 perovskite-type hydride: An approach towards advanced hydrogen storage system, Muhammad Rizwan, Hafiza Fiza Arooj, Faiza Noor, Kashaf Nawaz, Muhammad Abaid Ullah, Zahid Usman, Ali Akremi, Tariq Mahmood, Journal of Materials Research and Technology, 31, 2676-2684 (2024). **(I.F:6.00).** https://doi.org/10.1016/j.jmrt.2024.07.028.

12. Evaluating hydrogen storage potential of $NaNbO_{3-x}Hx$: DFT-based approach, Hira Hameed, Muhammad Abaid Ullah, Uzma Hira, Muhammad Abid, Zahid Usman, Youssef Bakkour,Muhammad Rizwan, ***Chinese Journal of Physics***, 89, 1725-1738, 2024 **(I.F:5.00).** https://doi.org/10.1016/j.cjph.2024.04.039.

13. Enhanced solar-driven photocatalytic and photovoltaic performance of polymer composite containing carbon black and calcium titanate nanoparticles, Ariba Bibi, Abdul Shakoor, Niaz Ahmad Niaz, Muhammad Raffi, Muhammad Salman, **Zahid Usman**, ***Polymer Bulletin***, 81, issue 9, 8359-8382 (2024). **(I.F:3.2).** https://doi.org/10.1007/s00289-023-05108-6.

14. Developing the insight for systematic exploration of hydrogen storage in RbMgF3, Muhammad Shahzad, Hamza Naeem, Muhammad Waseem Yasin, **Zahid Usman**, Syed Shahbaz Ali, Muhammad Rizwan, ***International Journal of Hydrogen Energy***, 64, 148-157, 2024 **(I.F:8.30).** https://doi.org/10.1016/j.ijhydene.2024.03.272.

15. Impact of Zn alloying on structural, mechanical anisotropy, acoustic speeds, electronic, optical, and photocatalytic response of KMgF3 perovskite material, A Ayub, HMN Ullah, M Rizwan, AA Zafar, **Z Usman**, U Hira, ***Materials Science in Semiconductor Processing*** 173, 108049 2024. **(I.F:4.1).** https://doi.org/10.1016/j.mssp.2023.108049.

16. Fine band gap tuning via Sr incorporated PbTiO3 for optoelectronic application: a DFT study, M Rizwan, H Naeem, HM Naeem Ullah, **Z Usman**, N Amjed, M Abid, ***Optical and Quantum Electronic,s*** 56 (1), 122, 2024. **(I.F:4.00).** https://doi.org/10.1007/s11082-023-05775-9.

17. Exploration energy harvesting through impurity-induced phenomena in barium titanate: First principle calculations , M Rizwan, SS Ali, U Sabahat, M Sana, **U Zahid**, M Abaid Ullah, ***Chinese Journal of Physics***, 86, 418-430, 2023 **(I.F:5.00).** https://doi.org/10.1016/j.cjph.2023.11.004.

18. Effect of electronic alteration on hydrogen storage and optical response in NaMgF3 using DFT approach Muhammad Rizwan, Hafiz Muhammad Naeem Ullah, **Zahid Usman**, Muhammad Waseem Yasin, Qasim Ali, Syed Shahbaz Ali, ***International Journal of Hydrogen Energy***, 48(86), 2023, Pages 33599-33609, 2023. **(I.F:7.20).** https://doi.org/10.1016/j.ijhydene.2023.05.135.

19. Effect of non-local hybrid functional on electronic band structure, manipulation of photocatalytic properties and optical response of Cu alloyed NaMgF3, Asma Ayub, HM Naeem Ullah, M

Rizwan, **Zahid Usman**, AA Zafar, Waseem Ahmad, ***Materials Science and Engineering***: B, 294, 116541, 2023. **(I.F:3.6).** https://doi.org/10.1016/j.mseb.2023.116541.

20. Efficient O–O coupling at catalytic interface to assist kinetics optimization on concerted and sequential proton–electron transfer for water oxidation, Chen Qiao, **Zahid Usman,** Jie Wei, Lin Gan, Jianhua Hou, Yingying Hao, Youqi Zhu, Jiatao Zhang, Chuanbao Cao, ***ACS Nano***, 17(13), 12278-12289, 2023. **(I.F:16.2).** https://doi.org/10.1021/acsnano.3c00893.

21. Theoretical description of structural, electronic, elastic, mechanical, and optical response of Ba1−xCdxTiO3 for optoelectronic applications, Aleena Fatima, HM Naeem Ullah, Muhammad Rizwan, Sana Maqbool, Faryal Idrees, **Zahid Usman**, ***Materials Today Communications***, 35, 105925, 2023. **(I.F:3.8).** https://doi.org/10.1016/j.mtcomm.2023.105925.

22. A lead-free environment-friendly material for optoelectronic and photocatalytic applications: A computational approach, Seerat Fatima, Hafiz Muhammad Naeem Ullah, Abrar Ahmad Zafar, **Zahid Usman**, MU Farooq, Muhammad Rizwan, ***Materials Science in Semiconductor Processing***, 159, 107363, 2023. **(I.F: 4.1).** https://doi.org/10.1016/j.mssp.2023.107363.

23. and HSE approach, Seerat Fatima, Muhammad Rizwan, Hafiz Muhammad Naeem Ullah, Syed Shahbaz Ali, Hamza Naeem, Zahid Usman, International Journal of Hydrogen Energy, 48, Issue 9, 3566-3582 (2023). https://doi.org/10.1016/j.ijhydene.2022.10.187

24. A DFT study of optical, elastic, mechanical, and overall water-splitting photocatalytic properties of pristine and Cd substituted BaZrO3: A lead free environment friendly material, HMN Ullah, M Rizwan, SS Ali, **Z Usman**, C Cao, ***Materials Science and Engineering: B*** 286, 116041, 2022. **(I.F: 3.6).** https://doi.org/10.1016/j.mseb.2022.116041.

25. A comprehensive DFT study of physical and photocatalytic properties of Sr1-xCdxTiO3, Chuanbao Cao H.M. Naeem Ullah, M. Rizwan, U. Zahid, A. Imran. Materials Today Communications, 33, 104495 (2022). https://doi.org/10.1016/j.mtcomm.2022.104495.

26. A computational study for mechanical, thermoelectric and optoelectronic applications of BiAlO3 under static pressure, Hafiz Muhammad Naeem Ullah, Muhammad Rizwan, Syed Shahbaz Ali, Zahid Usman, Xilan Ma, Chuanbao Cao, Journal of Physics and Chemistry of Solids, 168, 110819 (2022). https://doi.org/10.1016/j.jpcs.2022.110819.

27. Effect of Sc and Zn doping on structure and electro-optical behavior in c-BiAlO3: A DFT trial, M Rizwan, M Farman, A Akgül, A Ayub, **Z Usman**, ***Materials Science in Semiconductor Processing*** 146, 106633, 2022. **(I.F: 4.1).** https://doi.org/10.1016/j.mssp.2022.106633.

28. First principles study on optical and thermal properties of $BaTiS_3$, SF Gillani, N Yasmin, **Z Usman**, HM Khan, M Safdar, M Mirza, ***Optik*** 261, 169196, 2022**. (I.F:3.1).** https://doi.org/10.1016/j.ijleo.2022.169196.

29. Taming the optical response via (Ca: Zr) co-doped impurity in c-$BaTiO_3$: A comprehensive computational insight, M Maraj, A Fatima, SS Ali, U Hira, M Rizwan, **Z Usman**, W Sun, A

Shaukat, ***Materials Science in Semiconductor Processing*** 144, 106573, 2022. **(I.F: 4.1).** https://doi.org/10.1016/j.mssp.2022.106573.

30. Pressure-induced elastic, mechanical and opto-electronic response of $RbCdF_3$: A comprehensive computational approach, I Ilyas, AA Zafar, HMN Ullah, M Rizwan, **Z. Usman**, SSA Gillani, ***Journal of Physics and Chemistry of Solids*** 165, 110642, 2022. **(I.F: 4.0).** https://doi.org/10.1016/j.jpcs.2022.110642.

31. Variation in electronic and optical responses due to phase transformation of SrZrO3 from cubic to orthorhombic under high pressure: a computational insight, Rizwan, M., Farman, M., Akgül, A., **Zahid Usman**., Anam, S. ***Indian Journal of Physics***, 118, 2022. **(I.F: 1.78).** https://doi.org/10.1007/s12648-021-02031-2.

32. Oxynitride Perovskite: Computational Approach to Correlate Structural, Electronic, and Optical Properties of c-$BiAlO_3/N_3$ M Naeem, M Rizwan, R Bakhtawar, **Z. Usman**, X Ma, C Cao, ***ACS Applied Electronic Materials*** 4 (1), 375-385, 2022. **(I.F: 4.49).** https://doi.org/10.1021/acsaelm.1c01053.

33. Correlated Electronic and Opto-magnetic Properties of Cobalt Doped GaN, Zahid Usman,Waseem Ahmad, Materials Innovation, 2, Issue 06,153-159 (2022), Doi: 10.54738/MI.2022.2601 , Doi URL: http://doi.org/10.54738/MI.2022.2601. ((**I.F:0.0).**

34. High-valence Ni and Fe sites on sulfated NiFe-LDH nanosheets to enhance O-O coupling for water oxidation, Chen Qiao , **Zahid Usman** , Tai Cao, Souleymen Rafai Zhitao Wang, Youqi Zhu, Chuanbao Cao, Jiatao Zhang, ***Chemical Engineering Journal***, 426, 130873, 2021. **(I.F:15.1).** https://doi.org/10.1016/j.cej.2021.130873.

35. Putting DFT to trial: For the exploration to correlate structural, electronic and optical properties of M-doped (M = Group I, II, III, XII, XVI) lead free high piezoelectric c-$BiAlO_3$, Rizwan, M., Ayub, A., Shakil, M., **Zahid Usman**, S.S.A Gillani ...Jin, H.B., Cao, C.B. ***Materials Science and Engineering B: Solid-State Materials for Advanced Technology*** 264, 114959, 2021. **(I.F: 3.6).** https://doi.org/10.1016/j.mseb.2020.114959.

36. Smooth Growth, Characterization and Optical Properties of Cu_2SnS_3 Thin Film via Spray Pyrolysis Method, Sajad Hussain, Ghulam Nabi, Farrukh Amin, M. Bilal Tahir, Muhammad Tanveer, Zahid Usman, Jolly Jacob, ***Physica B: Condensed Matter, 2020*** (**2021, 602, 412498**). **(I.F:2.8).** https://doi.org/10.1016/j.physb.2020.412498.

37. First-Principles Investigation of Structural, Electronic, and Optical Response of SnZrO3 with Al Inclusion for Optoelectronic Applications, M. Rizwan, I. Iqra, S. S. A. Gillani, I. Zeba, M. Shakil, and **Z. Usman,** ***Physics of the Solid State,*** 2021, Vol. 63, No. 1, pp. 134–140. **(I.F: 0.85).** https://doi.org/10.1134/S1063783421010182.

38. Substitutional site effects of Cr (II) ions on optical and magnetic properties of 1D CdS semiconductor nanoneedles for optoelectronic and spintronic applications, Ghulam Nabi, Muhammad Arshad Kamran, Zahid Usman, Abdul Majid, Thamer Alharbi, Ali Abdullah,

Muhammad Shoaib, Muhamad Arshad, Tanveer Ul Hassan Shah, ***Inorganic Chemistry Communications, 108224, 2020.*** **(I.F:3.8).** https://doi.org/10.1016/j.inoche.2020.108224.

39. First-principles investigation of structural modification, fine band gap engineering and optical response of La1-xBaxGaO3 for optoelectronic applications, Muhammad Rizwan, A. Khadija, I. Zeba, M. Shakil, Zahid Usman, S. S. A Gillani, ***Applied Physics A 2020*** (2020, 126(9), 688). **(I.F: 2.98).** https://doi.org/10.1007/s00339-020-03813-x.

40. Electronic, structural and optical properties of BaTiO3 doped with lanthanum (La): Insight from DFT calculation, M. Rizwan, Hajiea, I. Zeba, M.Shakil, S.S.A Gillani, **Zahid Usman**, ***Optik, 2020211, 164611.*** **(I.F: 3.1).** https://doi.org/10.1016/j.ijleo.2020.164611.

41. Electronic and Optical behaviour of Lanthanum Doped CaTiO3 Perovskite, Muhammad Rizwan, **Zahid Usman**, Muhammad Shakil1, S. S. A. Gillani et.al ***Mater. Res. Express (2020) 7, 015920.*** **(I.F:2.3).** DOI 10.1088/2053-1591/ab6802.

42. Implementation of Magnesium Doping in SrTiO3 for Correlating Electronic, Structural and Optical Properties: A DFT Study, Muhammad Rizwan, Maida Anwar, **Zahid Usman,** M.Shakeel, S. S. A. Gillani, H. B. Jin, C. B. Cao, **2019,** ***Chinese Journal of Physics***, 62, 388-394. **(I.F: 5.00).** https://doi.org/10.1016/j.cjph.2019.09.036.

43. Band Gap modulation effect on electronic and optical properties in PbTio3 under stress: A DFT Study. Muhammad Rizwan, Rabia Bibi, Tariq Mahmood, Imran Aslam, S. S. A. Gillani,H. B. Jin, C.B. Cao, **Zahid Usman**, ***European Journal of Physics, 88, 10501 (2019)*** , **(I.F:0.7).** https://doi.org/10.1051/epjap/2019190178.

44. "Length dependent performance of Cu_2O/ZnO nanorods solar cells" S. Hussaina, Jolly Jacob, **Zahid Usman**, K. Mahmood, A. Ali, M.I. Arshad, Waheed S. Khan, Z. Farooq, M.U. Farooq, A. Ashfaaq, U. Rehman, ***Superlattices and Microstructures,*** **2019, 126, pp 181–185.** **(I.F:3.1).** https://doi.org/10.1016/j.spmi.2019.01.004.

45. "Structural, Electronic and Optical Properties of Copper-doped SrTiO3 Perovskite: A DFT Study", Muhammad Rizwan, Adnan Ali, **Zahid Usman,** N. R. Khalid, H. B. Jin, C. B. Cao, ***Physica B: Condensed Matter, 2019, 552, , Pages 52-57***. **(I.F: 2.8).** https://doi.org/10.1016/j.physb.2018.09.022.

46. "Effect of films morphology on the performance of Cu_2O PEC solar cells", Sajad Hussain, Chuanbao Cao, **Zahid Usman**, Ghulam Nabi, Faheem K. Butt, K. Mahmood, A. Ali, M.I. Arshad, N. Amin, ***Optik,*** **2018, 172, 72-78.** **(I.F: 3.1).** https://doi.org/10.1016/j.ijleo.2018.07.026.

47. Elastic, electronic and optical properties of baddeleyite TiO2 by first-principles, Tariq Mahmood, Chuanbao Cao, Abrar Ahmed Zafar, Talab Hussain, Maqsood Ahmed, M.A. Saeed, **Zahid Usman**, Waheed S. Khan, **Materials Science in Semiconductor Processing**, **(2014), 27, 958–965.** **(I.F: 4.1).** https://doi.org/10.1016/j.mssp.2014.09.001.

48. "Parameters optimization of electroless deposition of Cu on Cr-coated diamond", A. R. Niazi, Shu-kui Li, Ying-chun Wang, Jin-xu Liu, Zhi-yu Hu, **Zahid Usman**, **Trans. Nonferrous Met. Soc. China**, **(2014) 24, 136-145.** **(I.F:4.5).** https://doi.org/10.1016/S1003-6326(14)63039-9.

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50. "Pressure based First-principles Study of the Electronic, Elastic, Optic and Phonon properties of Zincblende InN"**, Zahid Usman,** Chuanbao Cao, Tariq Mahmood**, Physica B: Condense Matter, 2013, 430, pp 67-73. (I.F: 2.8).** https://doi.org/10.1016/j.physb.2013.07.031.
51. Thermo Physical Properties of Copper/Diamond Composites Fabricated by Spark Plasma Sintering, A.R. Niazi, Li Shukui, Wang Yingchun,Hu Zhiyu, ,**Zahid Usman**, **Advanced Materials Research, 712-715 (2013) pp 208-212. (I.F:0.5).** https://doi.org/10.4028/www.scientific.net/AMR.712-715.208
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53. Electronic, elastic, acoustic and optical properties of cubic TiO_2:A DFT approach, Tariq Mahmood, Chuanbao Cao, Muhammad Tahir, Faryal Idrees, Maqsood Ahmed, M. Tanveer,, Imran Aslam, **Zahid Usman**, Zulfiqar Ali, Sajad Hussain, **Physica B 420 (2013) 74–80**. **(I.F: 2.8).** https://doi.org/10.1016/j.physb.2013.03.039.
54. Effect of Spark Plasma Sintering Temperature on Microstructures and Properties of Copper-Diamond Composites, Abdul Rehman Khan Niazi, Li Shukui, Wang Yingchun, Liu Jinxu 1,d, Hu Zhiyu, **Zahid Usman, Advanced Materials Research, Vol 683 (2013) pp 573-576. (I.F:0.5).** https://doi.org/10.4028/www.scientific.net/AMR.683.573 **.**
55. "Improvement of a high velocity compaction technique for iron powder" Dil Faraz Khan, Haiqing Yin, **Zahid Usman**, Matiullah Khan, Xianjie Yuan, Wenhao Wang, Xuanhui Qu. **Acta Metallurgica Sinica, 2013, 26, 4. (I.F:2.9).** https://doi.org/10.1007/s40195-012-0147-8
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57. "Hydrogen storage and PL properties of novel Cd/CdO shelled hollow microspheres prepared under NH3 gas environment", Waheed S. Khan, Chuanbao Cao, Faheem K. Butt, Zulfiqar Ali, **Zahid Usman**, Ghulam Nabi, Ayesha Ihsan, Asma Rehman, Irshad Hussain, M. Tanveer, Sajad Hussain, **International Journal of Hydrogen Energy 38(5) (2013) 2332-2336. (I.F: 7.20).** https://doi.org/10.1016/j.ijhydene.2012.11.121.
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LIST OF BOOK CHAPTERS

1. Synthesis and purification of carbon nanotubes, Syed Awais Rouf, Zahid Usman, Hafiz Tariq Masood, Abdul Mannan Majeed, Mudassira Sarwar, Waseem Abbas, published in a book titled" Carbon Nanotubes - Redefining the World of Electronics" by Intechopen, DOI: 10.5772/intechopen.9822, (07-06-2021)

Contributed Talks，Conferences & Seminar

1. Delivered a Seminar on "**How to write research proposal**" at UE DG Khan on *26-09-2024*.
2. Invited Talk on **"Going Beyond Conventional Synthesis Techniques in Materials Science",** in 1st National Conference on Recent Trends in Physics and Materials Science, *25-27 March,2019*, at Physics Department University of Science and Technology, Bannu
3. Invited Talk on **"Prospects of Density Functional Theory in Materials Science",** *February 18 – 20, 2019*, International Conference on Material Science and Nanotechnology (MSNANO-2019), GC Faisalabad Spring meeting
4. Invited Talk on **"p-type Conductivity in GaN",** *February 18 – 20, 2018*, International Conference on Material Science and Nanotechnology (MSNANO-2018), GC Faisalabad Spring meeting.
5. Invited Talk on **"Deep Defects in GaN",** *April 7-9 2018,* International Conference on Recent Advances in Phvsics, University of Lahore.

6. Invited Talk on **"Interplay between yellow and blue luminescence bands in GaN:C",** Zahid Usman, Martin Feneberg, Andreas Lesnik, Marc Hoffmann, Armin Dadger, Rudiger Goldhahn : German Physical Society, Spring meeting March 19-24, 2017"
7. Abstract presentation on **How Exciting** Workshop (August 3-11, 2016), Humboldt University, Berlin.
8. International Symposium on **Contemporary Physics** (March 26-30,2007), National Centre for Physics Quaid- i- Azam University Campus, Islamabad (Pakistan).
9. International Nathiagali **Summer College on Physics and Contemporary Need**, 23rd June to 05th July, 2008
10. National Workshop on **Plasma Physics** (14-15) November, 2005, Department of Physics Quaid- i-Azam University Campus, Islamabad-(Pakistan)
11. Two Weeks Refresher course on Physics (7-22) April, Department of Physics Gomal University D. I. Khan (Pakistan).

M.S SCHOLARS SUPERVISION

1. **Aqsa Mobin (2019)**, "The effect of Pressure on Structural, Electronic and Optical properties of $ZnAl_2Se_4$" University of Lahore (**completed**).

2. **Tahira (2019-21),** MSF-1900391, Tailoring the Electronic and Optical Properties of Cubic BaTiO3 via Transition Metal Doping University of Education Lahore, Campus D. G. Khan (**completed**).

3. **Muhammad Tahir (2020-2022),** Msf2000329, Effect of Berylium and Zirconium Co-Doping on Structural, Electronic and Optical Properties of MgSiO3 using Ab-initio method. University of Education Lahore, Campus D. G. Khan (**completed as Co-P.I**).

4. **Ghulam Jafar (2020-2022),** Msf2000354, Effect of Sn and Sr substitution with Ca in Calcium carbonate using first principle studies, University of Education Lahore, Campus D. G. Khan (**completed as Co-P.I**).

5. **Muhammad Yousif (2020-2022),** Msf2000339, First-Principle Investigation of the Structural, Electronic, Elastic and Optical Properties of Cuprous Oxide (CuO), University of Education Lahore, Campus D. G. Khan (**completed**).

6. **Tauqeer Nasir (2021-2023),** Msf2100552, A First-Principle Investigation of Silicon doped Gallium Oxide Thin Film, University of Education Lahore, Campus D. G. Khan (**completed**).

7. Muhammad Farooq Ahmad (2021-2023), Msf2100547, Incorporating Zinc, Calcium, Magnesium, Phosphorous and Potassium in Carbon based Biochar: A-First-Principles Analysis. University of Education Lahore, Campus D. G. Khan (**completed**).

8. **Zarmeena Ghafoor (2021-2023),** Msf2100505, Green Synthesis and Photodegradation Capability of Copper Oxide Nanoparticles using Psidium Guajava Leaf extract, University of Education Lahore, Campus D. G. Khan (**completed**).

9. **Farrah Muneer (2021-2023),** Msf2100497, Green Synthesis of Copper Oxide Nanoparticles using Ocimum Basilicum Leaf extract, University of Education Lahore, Campus D. G. Khan (**completed**).
10. **Nabila (2021-2023),** Msf2100583, Synthesis of Silver Nanoparticles using Beet Root via Microwave Oven, University of Education Lahore, Campus D. G. Khan (**completed**).
11. **Muhammad Usman Abdullah (2021-2023),** Msf2100527, Impact of Sulphur and Selenium doping on Structural and optoelectronic properties oif Srontium Iodide (SrI_2): A-First-Principles Investigation. University of Education Lahore, Campus D. G. Khan (**completed**).
12. **Tahira Batool (2021-23)**, 21-UE-03939, Synthesis and UV-Visible spectroscopy of Zinc Oxide Using Azadirachta Indica Leaves, University of Education Lahore, Campus D. G. Khan (**Completed**).
13. **FARHAT ABBAS (2021-23)**, MSF 2100544, To Investigate the effects titanium and Zirconium doping on Structural, Electronic and Photocatalytic Properties of Cerium oxide (CeO2), University of Education Lahore, Campus D. G. Khan (**Completed**))
14. **Misbah Shahid (2022-24),** MSF 2204096, To enhance the conductivity of Tin Dioxide (SnO 2) using Silver (Ag) doping for solar cell applications, University of Education Lahore, Campus D. G. Khan (**Completed**))
15. **Mahnor Fatima (2022-24),** MSF2204094 Green Synthesis and Photodegradation Capability of Tungsten Oxide Nanoparticles using Psidium Guajava Leaves, University of Education Lahore, Campus D. G. Khan (**Completed**)

B.S SCHOLARS SUPERVISION

1. **Sundus Zahra (2020-24),** BSF2002151, Green Synthesis of Silver Nanoparticles Using Psidium Guajava Leaves Extract and Quantitative Measurement of Photo-degradation of Rhodamine Dye, University of Education Lahore, Campus D. G. Khan (completed).
2. **Aqsa Nawaz (2020-24),** BSF2002105, Preparation and Characterization of Cobalt nanoparticles Using Guava Leaves, University of Education Lahore, Campus D. G. Khan (completed).
3. **Samina Razaq, (2020-24)**, BSF2002472, UV-Visible Spectroscopy of Cerium Oxide nanoparticle prepared via Green Route, University of Education Lahore, Campus D. G. Khan (completed).
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POTENTIAL REVIEWER OF INTERNATION SCI JOURNALS

1. Materials Science & Engineering B.
2. Electrochimica Acta
3. Ceramics International
4. Physica B: Physics of Condensed Matter
5. Materials Research Express
6. Journal of Materials Science: Materials in Electronics (JMSE).
7. International Journal of Modern Physics B.
8. Chinese Physics Letters
9. Journal of Physical Chemistry
10. Nanotechnology
11. Chemical Physics Letters
12. Physica Scripta
13. Microstructures and Superlattices

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- English, German, Chinese, Urdu, Saraiki

REFERENCES

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