Professor
Department of Physics
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Women University

Dr. Tariq Mahmood

(PhD in Physics and Chemistry),

HEC Approved Supervisor

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Academic Qualification

1.	M.Sc.	2001	Computational Physics	Allama Iqbal Open University, Islamabad
2.	M.C.S	2002	Computer Science	National College of Computer Science, Lahore
3.	M.Phil.	2007	High Energy Physics	University of the Punjab
4.	Ph.D.	2013	Computational Materials Physics	Beijing Institute of Technology, Beijing, P. R. China.

Research Experience

- Now I am Working as Professor of Physics at Department of Physics, Government College Women University Sialkot since 26 April 2023.
- I worked as an Assistant Professor at Department of Physics, Government College Women University, Sialkot since 01 March 2016 to 25 April 2023.
- Developed a Central Research Laboratory to facilitate the research scholars of Department of Botany, Chemistry, Environmental Sciences, Physics and Zoology at GC Women University, Sialkot.
- Developed curriculum of MS/Ph.D Physics and got NOC from HEC Islamabad to start MS/Ph.D Physics programs at GC Women University.
- Worked as a Senior Research Associate/Assistant Professor at Centre of Excellence in Solid State Physics from 01 October, 2014 to 29 February, 2016.
- Developed two Theoretical Solid State Physics labs (besed on TCAD, ADF, NSys15 and Wein2k) at Centre of Excellence in Solid State Physics, University of the Punjab, Lahore, Pakistan.
- Worked as an Assistant Professor at Centre for High Energy Physics, University of the Punjab, Lahore. I have published three research publications in International journals with impact factor. As an Assistant Professor, I have supervised one M. Phil. Student and 11 (eleven project students at M.Sc level).
- Pursued PhD research for four years (September 2009 to August-2013) in the field of Computational Materials Physics at Beijing Institute of Technology, P. R. China under Chinese Government Scholarship (CSC) Scheme. Prof. Dr. Chuanbao Cao supervised my PhD research work and the title of the thesis was "*Investigations of electronic, elastic, acoustic and optical properties of TiO2 polymorphs by First Principles*". Owing to excellent PhD research work, I have been able to publish 70 international research articles

as a first author and co-author in the reputed SCI journals with good impact factor. The cumulative impact factor of the published work as listed below is more than 150.

- Carried out M. Phil research work (2004-2007) in the area of High Energy Physics at Centre for High Energy Physic, University of the Punjab, Lahore. The title of the thesis was "*Geant 4: Applications of High Energy Physics*". On the basis of good results obtained, I had published one research article in the internationally reputed conference proceedings "Conf. Proc. *AIP-888*" of American Institute of Physics (AIP) publishers.

Administrative Experience

- Incharge, Faculty of Natural Sciences, Government College Women University Sialkot since March 2025 to todate.
- Chairperson, Department of Physics, Government College Women University Sialkot since April 2023 to todate.
- Chairperson, Department of Computer Science, Government College Women University Sialkot since April 2025 to todate.
- Incharge, Department of Physics, Government College Women University Sialkot, since July 2020 to April 2023
- Director, Purchase and Store, Government College Women University Sialkot since 10 May 2023 to todate.
- Additional Director, Purchase and Stire, Government College Women University Sialkot since 10 October, 2022 to 09 May 2023.
- Chairperson, Project Procurement Committee, Government College Women University Sialkot since March 2023 to todate.
- Chairperson MS/PhD programs at Department of Physics since 2016, GC Women University, Sialkot.
- Chairperson departmental Research Committee since 2016, Department of Physics, GC Women University Sialkot.
- Chairperson MS/PhD Admission Committee since 206, Department of Physics, GC Women University Sialkot.
- Chairperson Central Research Laboratory since 2017, GC Women University Sialkot.
- Member, Central Admission Committee since 2016.
- As a Chairperson of IT Support Committee Planed and developed a fiber optic based local area network on campus at GC Women University, Sialkot.
- Performed additional duties as Incharge Computer section (computer labs and the whole local area network) as well as Theoretical Solid State Physics (simulation and modeling) Labs at Centre of Excellence in Solid State Physics.
- July 2002 to 02 October, 2013, working as a System Administrator at Centre for High Energy Physics, University of the Punjab, Lahore.
- I have developed 7 computer labs (40 computers per lab) and setup a local area network by myself. Also performed lot of responsibilities for example, official documentation, drafting and preparation of PC-I.
- During My job I have prepared a PC-I for school of Physical Sciences (200 million rupees) at University of the Punjab with the coordination of senior professors. I worked with Higher Education Department of the Government of the Punjab, Planning and Development Department, Works Department, Architect Department, the office of the Governor Punjab and Accountant General Office for this Project.

Research Students (M.Phil)

Student Name	Thesis Title	Session
Saher Ijaz (P.U. Lhr)	First Principles Calculations of Electronic, Elastic and Optical Properties of Monoclinic VO_2.	2012-14
Khush Bakhat (P.U. Lhr.)	First Principles Calculations of Electronic, Elastic and Optical Properties of Rutile SnO2 under pressure. (work published in IF SCI Journal)	2013-15
Rabia Farooq (U.E.T. Lhr.)	First-Principles Calculation of Electronic and Optical Properties of Graphene like ZnO (G-ZnO) (Published in IF SCI Journal)	2014-16
Ghadah Niaz Abbasi (U.E.T. Lhr.)	Adsorption of Water Molecule on Graphene: A Theoretical Study (Presented for publication in Materials Today Proceedings, ICSSP'15)	2014-16
Saira Shabbir	DFT based study of electronic, elastic and optical properties of Bi2Te3 (with Dr Maqsood sb)	2015-17
Ms. Zahida Parveen	Electronic, Elastic and Optical Properties of SnO2 by using Density Functional Theory with and without "U"	2016-18
Ms. Arbab Arif	Electronic and Optical Properties of Zirconium Dioxide (ZrO2) by First Principle Calculations	2016-18
Ms. Maryam Tariq	First Principles Calculations of Electronic and Optical Properties of Graphene Like Silicon Oxide (g-SiO)	2016-18
Ayesha Liaqat	Electronic, Elastic and Optical Properties of MoS2 by using DFT	2017-19
Ayesha Manzoor Khan	Electronic, Elastic and Optical Properties of ZnS by using DFT	2017-19
Ms. Samina Naseeb	Magnetic Properties of Doped and Ondoped ZnO using Density Functional Theory	2017-19
Ms. Faiza Fiaz	Characterization of Synthesized thin film Opto-Chemical Sensors based on ZnO	2017-19
Mr. Raza Hameed	A Theoretical Study of Graphene Oxide using Density Functional Theory	2017-19
Miss Sidra Nisar	Fabrication and Characterization RF-Sputtering TiO_2 based Opto-Chemical Sensors	2017-19
Mr. Ali Raza	Fabrication and Characterization RF-Magnetron Sputtered CrN based Opto-Chemical Sensors	2017-19
Ms. Anam Haider	Modelling and Simulation of J-V Data of Heterojunction Solar Cells using Model	2017-19
Mr. Muhammad Azhar Nazir	Electronic, Elastic and Optical Properties of Zirconia Under Pressure: A DFT Study	2017-19
Mr. M. Naeem Akhtar	First Principles Investigations of Electronic and Optical Properties of Graphene like Zinc Oxide (g-ZnO) under Pressure	1017-19
Mr. Najam ul Haq	Synthesis and Characterization of Nanocomposites for Lithium-Ion Batteries	2017-19
Zunera Asghar	DFT Study of Electronic and Optical Properties of Ba Doped Na2WO4	2018-20
Aqsa Zafar	Synthesis, Structural Characterization and Reactivity of Zinc Tungstate ($ZnWO_4$) nanoparticles in the oxidative degradation of Toxic materials	2018-20
Zartar Fatima	DFT Study of Electronic and Optical Properties of Zn Doped $Na2WO_4$	2018-20
Hafiza Sadia Ayyub	Synthesis and Characterization of Zinc Tungstate ($ZnWO_4$)	2018-20
Ume Habiba	Theoretical studies of electronic and optical properties of Nickel Ferrites ($NiFe_2O_4$).	2019-21
Sameeha Farruk	DFT based studies of electronic, elastic, and optical properties of Lithium Maganese Oxide ($LiMn_2O_4$).	2019-21
Rida Fatima	Electronic, elastic, and optical properties of Iron oxide (Fe_2O_3) by DFT study.	2019-21
Muntaha Sarfraz	Electronic and optical properties of Calcium Fluoride (CaF_2) by using DFT.	2019-21
Saira	Effect of doping on electronic and optical properties of Cesium Iodide a theoretical study.	2019-21
Zaima Afzal	First Principle Study of electronic and Optical Properties of $CaWO_4$ and $MgWO_4$	2020-22
Sadia Afzaal	Theoretical Studies of electronic and Optical Properties of $NiWO_4$ & $CuWO_4$	2020-22

Funded Projects

Sr.#	Project Title	Funded By	Amount	Year
1	Synthesis of Tungstate based Nanomaterials using Uniform Strategy for Efficient and Low-Cost Photocatalytic Degradation of Toxic Materials (NRPU-10823) (PI)	HEC, Islamabad	2.3 Million	2017-18
2	Lab scale membrane bioreactor for treatment of waste water (1848/SRGP/R&D/HEC/2018) (Co-PI)	HEC, Islamabad	0.4899 Million	2018
3	Enhancing performance in HPC Parallel Computing systems under Power Consumption Limitations (Co-PI)	HEC Islamabad	0.5 Million	2018

Remarkable Contributions as:

1. Chairperson, Main Procurement and Auction Committee, GC Women University, Sialkot Since August 2020 to August 2023.
2. Chairperson, Central Research Laboratory Committee at GC Women University, Sialkot since 2017 to 2023.
3. Chairperson, Internal Audit Committee, GC Women University, Sialkot.
4. Chairperson, Departmental MS/Ph.D. Admission Committee, Department of Physics, GC Women University, Sialkot.
5. Chairperson, Departmental Research Committee, Department of Physics, GC Women University Sialkot.
6. Chairperson, Technical Committee (HEC funded project for universities in backward areas), GC Women University, Sialkot.
7. Chairperson, IT Support Centre Committee, GC Women University, Sialkot.
8. Member, Departmental Research Program Committee, Department of Physics, GC Women University Sialkot.
9. Member, Prospectus Committee, GC Women University Sialkot since 2016.
10. Member, Central Admission Committee, GC Women University, Sialkot since 2016.
11. Member, Main Procurement and Auction Committee, GC Women University, Sialkot.
12. Member, Board of Faculty of Arts and Social Sciences, GC Women University, Sialkot.
13. Member Board of Studies, Department of Physics, GC Women University, Sialkot.
14. External Examiner for MS/PhD Thesis Evaluation, Department of Physics, University of Gujrat, Gujrat.
15. External Examiner for MS/PhD Thesis Evaluation, Centre for High Energy Physics, University of the Punjab, Lahore.
16. External Examiner for MS/PhD Thesis Evaluation, Department of Physics, University of the Lahore, Lahore.
17. External Examiner for MS Thesis Evaluation, Department of Physics, Division of Science and Technology, University of Education, Lahore.
18. Member, Inventory/Physical Verification Committee, GC Women University, Sialkot.
19. Member, Technical Committee for IT Equipment and LAN/WAN, GC Women University, Sialkot.
20. Member Financial and Tender Opening Committee, GC Women University, Sialkot.
21. Member, Campus Management Committee, GC Women University, Sialkot.
22. Member, Solarization Committee, GC Women University, Sialkot.
23. Member, External Linkages Committee, GC Women University, Sialkot.
24. Member, Rain Water Harvesting Committee, GC Women University, Sialkot.

25. Member, Clean Drinking Water Committee, GC Women University, Sialkot.

Subjects Taught (BS/MSc and M.Phil/PhD)

Course Name	Degree Program/Semester
Undergraduate Programs (BS/M.Sc)	
Solid State Physics	BS (Hons.)/8th semester (CHEP, P. U. Lhr.)
Infinite Series	BS(Hons)/3rd semester (CHEP, P. U. Lhr.)
Computational Physics-I	M.Sc/2nd semester (CHEP, P. U. Lhr.)
Computational Physics Lab-I	BSc (Hons)/6th Semester (CHEP, P. U. Lhr.)
General Physics Lab	BSc (Hons.)/5th Semester (CHEP, P. U. Lhr.)
Particle Physics	BS/8th Semester (Dept. of Phys., GCWUS)
Quantum Mechanics-I	BS/6th Semester (Dept. of Phys., GCWUS)
Computer Programming for Physics	BS/2nd Semester (Dept. of Phys., GCWUS)
Mathematical Methods in Physics-I	BS/5th Semester (Dept. of Phys., GCWUS)
Mechanics	BS Chemistry/3rd Semester (Dept. of Phys., GCWUS)
Post Graduate Programs (MS/PhD)	
Computational and Theoretical Materials Science/DFT	M.S./1st Semester (CSSP, P. U. Lhr.)
Introduction to Computer Science	Undergraduate Classes, GCWU, Sialkot
Advanced Mathematical Methods in Physics	MS Physics, Department of Physics, GCWUS, Sialkot
Computational Physics/DFT	MS Physics, Department of Physics, GCWUS, Sialkot
Optical Properties of Solids	Ph.D Physics, Department of Physics, GCWUS, Sialkot

Experimental Methods and Characterization Techniques

- Growth of thin film by using Molecular Beam Epitaxy (MBE)
- Spectroscopy Ellipsometry
- Chemical Vapor Deposition
- Hydrothermal Methods
- SEM
- XRD
- PL Properties

Theoretical/Computational Tools

- CASTEP with Materials Studio interface
- Wein2k and associated softwares
- VASP and associated analysis software
- DMOL3 with Materials Studio interface
- ADF-BAND
- Gaussian
- Nsys-2015
- TCAD (Synopsys)
- Origin Lab

Research Articles Published

2025

1- Sana Islam, Imran Aslam, Tariq Mahmood, M. Hassan Farooq, Facile synthesis of $WO_3.H_2O$ nanostructures for efficient photocatalytic and electrochemical properties, Journal of Crystal Growth, Volume 652, (2025), 128017 (**Impact Factor 1.7**).

2024

2- Muhammad Rizwan, Hafiza Fiza Arooj, Faiza Noor, Kashaf Nawaz, Muhammad Abaid Ullah, Zahid Usman, Ali Akrmi, Imen kebaili, Tariq Mahmood, Computational Study to Investigate Effectiveness of Titanium Substitution in $CaFeH_3$ Perovskite-type Hydride: An Approach Towards Advanced Hydrogen Storage System, Journal of Materials Research and Technology 31 (2024) 2676–2684 (**Impact Factor 6.3**)

3- Rahat Batool, Tariq Mahmood, Sajid Mahmood, Abdul Aziz Bhatti, A Computational Study of Alkali (Na, K, Cs) incorporated Methylammonium Lead Iodide Perovskite Physica B: Condensed Matter, 672 (2024) 415469 (**Impact Factor 2.8**)

2023

4- B. Zaidi, A. Kerboub, T. Bouarroudj, C. Shekhar, T. Mahmood, M. A. Saeed, Enhancement of performance of TiO2/Cu2O solar cells, Journal of Optoelectronics and Advanced Materials 25 (11-12) (2023) 549-553 (**Impact Factor 0.6**).

5- Muhammad Rizwan, Muhammad Moin, Hafiz Muhammad Naeem Ullah, Abdul Waheed Anwar, Uzma Mushtaq, and Tariq Mahmood, Investigations of electronic, elastic, and optical properties of (Ag, Cd)-doped LaAlO3: a computational insight, Canadian Journal of Physics, 101 (12) (2023) 694-701(**Impact Factor 1.1**).

6- Aliza Zahoor, Muhammad Isa, Tariq Mahmood, Computational study of Be doped LaAlO3 perovskite, Physica B: Condensed Matter, 652, 2023, 414631 (Impact Factor 2.8)

7- Aliza Zahoor, Muhammad Isa, Tariq Mahmood, Mg-doped LaAlO3 structure: A theoretical investigation of indirect to direct bandgap and brittle to ductile transition, Canadian Journal of Physics, 101 (7), 2023, 330-338. (**Impact Factor 1.1**).

8- Rahat Batool, Tariq Mahmood, A comparative study of cubic methylammonium lead iodide (CH3NH3PbI3) perovskite by using density functional theory, Materials Today Communications 35 (2023) 105814 (**Impact Factor 3.7)**

2022

9- Mahwish Bashir, Farzana Majid, Rabia Sabir, Attia Falak, Babar Shahzad Khan, Tariq Mahmood, Ahmed M. Fouda & Adnan Ali, Facile green synthesis, analysis, in vitro antidiabetic and antimicrobial activity of ZnO macropores, Bioprocess and Biosystems Engineering, 45, 2022, 1993–2006 (**Impact Factor 3.434**)

10- Muhammad Rizwan, H.M. Naeem Ullah, S.S.A. Gillani, Sheraz Ahmad, Tariq Mahmood, Photocatalytic and optical properties of (Mg:La) CaTiO3: Insights from first principles studies, Journal of Physics and Chemistry of Solids, 169, 2022, 110830. (**Impact Factor 3.995**)

11- K. Hussain, P.H. Du, T. Mahmood, Y. Kawazoe, Q. Sun, Three-dimensional tetrahexcarbon: Stability and properties, Materials Today Physics, 23, 2022, 100628 (**Impact Factor 9.298**)

12- Muhammad Azhar Nazir, Tariq Mahmood, Naeem Akhtar, Kashif Hussain, Waheed S. Khan, Muhammad Asad Waqar, Fazal-E-Aleem, Aamir Saeed, Muhammad Fareed-Un-Nabi Saqi, Jafar Raza , Effect of high pressure on structural, electrical, and optical properties of graphene-like zinc oxide (g-ZnO) structure, *Materials Science in Semiconductor Processing*, 23, 2022, 100628 (**Impact Factor 3.927**)

2021

13- Robina Ashraf, Zanib Shehzadi, Tariq Mahmood, Samia Naeem, Noreen Shehzadi, Shan iftikhar, Zahida Parveen, DFT based investigations of BAWO4: Electronic and optical properties, Physica B: Condensed Matter, 621, 2021, 413309 (**Impact Factor 2.436**)

14- Kashif Hussain, Imran Muhammad, Wei Wu, Yu Qie, Tariq Mahmood, and Qiang Sun, 3D Porous Metallic Boron Carbide Crystal Structure with Excellent Ductility, Adv. Theory Simul. 2021, 2100325, (**Impact Factor 4.oo4**)

15- Muhammad Azhar Nazir, Tariq Mahmood, Abrar Ahmad Zafar, Naeem Akhtar, Talab Hussain, Muhammad Alam Saeed, Fazal-e-Aleem, Aamir Saeed, Jafar Raza, Chuanbao Cao, Electronic, optical and elastic properties of cubic zirconia (c-ZrO2) under pressure: A DFT study, Physica B: Condensed Matter, 604, 2021, 412462 (**Impact Factor 2.436**)

16- Muhammad Rizwan, Z. Khadija, Tariq Mahmood, S. S. A. Gillani, Muhammad Isa Khan, Alteration impact of electronic properties of c-SrTiO3 on optical response due to Ca inclusion: A DFT study, Physica B: Condensed Matter, 602, 2021, 412553 (**Impact Factor 2.436**)

17- Muhammad Rizwan, Miss Samina Gul, **Tariq Mahmood**, M. Shakil, Abdul Majid, M. Rafique, Abrar Ahmad Zafar, H.B. Jin, Dr. C.B. Cao, Tailoring Electronic and Optical Properties of $LaAlO_3$ by Cu Inclusion: A DFT Study, Canadian Journal of Physics, 99(1), 2021, 38-43 (**Impact Factor 1.032**).

18- Imran Aslam**,** M. Saqib**,** M. W. Iqbal**,** Rajender Boddula**, Tariq Mahmood,** Usman Ghani**,** *Synthesis of Non-Toxic Fe2(WO4)3 Photocatalyst with Efficient Performance*, Current Analytical Chemistry, 17 (5), 2021, 628-639 (**Impact Factor 1.365**).

2020

19- Muhammad Rizwan S. Aleena M. Shakil **Tariq Mahmood** Abrar Ahmad Zafar Talab Hussain M. H. Farooq, A computational insight of electronic and optical properties of Cd-doped $BaZrO_3$, Chinse Journal of Physics, Volume 66, August 2020, 318-326 (**Impact Factor 2.638**)

2019

20- Souleymen Rafai, Chen Qiao, Zhitao Wang, Chuanbao Cao, **Tariq Mahmood**, Muhammad Naveed, Waqar Younas, and Syed Khalid, Cobalt Phosphide Ultrathin and Freestanding Sheets Prepared through Microwave Chemical Vapor Deposition: A Highly Efficient Oxygen Evolution Reaction Catalyst, ChemElectroChem 6, (2019) 5469–5478. (**Impact Factor 3.975**).

21- Muhammad Rizwan, Rabia Bibi, **Tariq Mahmood**, Imran Aslam, Syed Sajid Ali Gillani, Hai Boa Jin, Chuan Bao Cao, Zahid Usman, and Ahmad Maqsood Band gap modulation effect on electronic and optical properties in PbTiO3 under stress: a DFT study, Eur. Phys. J. Appl. Phys. 88 (2019) 10501. (**Impact Factor 0.765**)

22- Muhammad Rizwan, Azeem Shahid; **Tariq Mahmood**, Imran Aslam, N. Adnan, PhD; Abrar Ahmad A Zafar, Talab Hussain, H. B Jin, C. B Cao, Effect of Magnesium on Structural and Optical Properties of CaTiO3: A DFT Study, Physica B: Condensed Matter, 568, (2019) 88-91 (**Impact Factor 1.902**)

23- Syed Muhammad Raza Shah Naqvi, Taseer Muhammad, Hyun Min Kim, **Tariq Mahmood**, Adnan Saeed and Babar Shahzad Khan, Numerical treatment for Darcy-Forchheimer flow of nanofluid due to a rotating disk with slip effects, Canadian Journal of Physics, 97(8), (2019) 856-863 (**Impact Factor 0.983**)

2018

24- M. Younis Ali Khan, Mehvish Zahoor, Ayesha Shaheen, Nuzhat Jamil, M. Imran Arshad, Sadia Zafar Bajwaa, Naveed Akhtar Shad, Rehman Butt, Israt Ali, M. Zubair Iqbal, Aiguo Wu, Ghulam Nabi, Sajad Hussain, ***Tariq Mahmood***, Imran Aslam, Waheed S. Khan, Visible light photocatalytic degradation of crystal violet dye and electrochemical detection of ascorbic acid & glucose using BaWO4 nanorods, , Materials Research Bulletin, Volume 104, August 2018, Pages 38-43. (**Impact Factor 2.873**)

25- Muhammad Rizwan, Imran Haider, **Tariq Mahmood**, Muhammad Shakil,Mahmood ul Hassan, Jin Hai-Bo, Cao Chuan Bao, First principles investigation of electronic and optical properties of $AgAlO_2$, Chinese Journal of Physics, 56 (2018) 2186-2190. (**Impact Factor 1.051**)

2017

26- **Tariq Mahmood**, Humma Malik, Rahat Batool, Zahida Perveen, Farhat Saleemi, Haris Rasheed, M.A. Saeed, Chuanbao Cao, Muhammad Rizwan, Elastic, electronic and optical properties of anatase TiO_2 under pressure: A DFT approach, ***Chinese Journal of Physics***, 55 (2017), 1252–1263 ((**Impact Factor 1.051**).

27- Robina Ashraf, **Tariq Mahmood**, Saira Riaz, Shahzad Naseem, Study of the structural and electronic properties of FeO at the LDA and GGA level, ***Chinese Journal of Physics***, 55 (2017), 1135–1141 ((**Impact Factor 1.051**).

2016

28- Muhammad Rizwan, **Tariq Mahmood**, H. M. Rafique, M. Tanveer, Syed Fawad Haider, Design of a negative refractive index material based on numerical simulation, ***Chinese Journal of Physics***, 54(4), 2016, 587-591. (**Impact Factor 1.051**)

29- A. M. A. Bakheet, M. A. Saeed, Riadh Sahoun, A. R. M. Isa, Lawal Mohammed, **Tariq Mahmood**, Density Functional Theory Study of the Electronic and Optical Properties of Pure and Magnesium Doped B-Tricalcium Phosphate Compound, ***Journal Technology (Sciences & Engineering)***, 78:3 (2016) 167-172 (**Impact Factor 0.096**).

30- Rabia Farooq, **Tariq Mahmood**, Abdul Waheed Anwar, Ghadah Niaz Abbasi, First-Principles Calculation of Electronic and Optical Properties of Graphene like ZnO (G-ZnO), ***Superlattices and Microstructure,*** 90 (2016) 165-169 ***(***Impact **Factor 2.097)*.**

31- Khush Bakht, **Tariq Mahmood**, Maqsood Ahmed, Kamran Abid, Pressure induced Electronic and Optical Properties of Rutile SnO2 by First Principle Calculations, ***Superlattices and Microstructure,*** 90 (2016) 236-241 ***(***Impact **Factor 2.097)*.**

32- L. Mohammed, A. R. Mat Isa, A. Musa, **Tariq Mahmood**, M. A. Saeed, Structural, Electronic, Optical and Thermoelectric Pproperties of β Phase Spinel: Prospects for Solar Cells Applications, ***Chalcogenide Letters***, 13(1) (2016) 1 – 8. ***(*** **Impact Factor 0.913)**

2015

33- M. M. Alsardia, M.A. Saeed, **Tariq Mahmood**, S Islam, Ahmad Radzi Mat Isa, DFT Investigations of the Structural and Electronic Properties of XN (Al, Ga, In) Compounds, ***Advances in Alloys and compounds*** (2015) Vol. 2 No. 1 30-36.

34- Muhammad Tahir, Nasir Mahmood , Xiaoxue Zhang , **Tariq Mahmood** , Faheem. K. Butt , Imran Aslam , M. Tanveer , Faryal Idrees , Syed Khalid , Imran Shakir , Yi-

Ming Yan , Ji-Jun Zou , ChuanbaoCao (*), and Yanglong Hou, Bi-functional Catalysts of Co3O4@GCN tubular nanostructured (TNS) hybrids for Oxygen and Hydrogen Evolution Reactions, ***Nano Research***: 8(11) (2015) 3725-3736.**(Impact Factor 7.01)**

2014

35- **Tariq Mahmood**, Chuanbao Cao, R. Ahmed, M. A. Saeed, Maqsood Ahmed, Comparitive Study of Structural and Electronic Properties of TiO_2 at GGA and GGA+U Level, ***Journal of Optoelectronics and Advanced Materials:*** 16(1-2) (2014) 117-122 **(Impact Factor 0.563)**

36- Faheem K Butt; Chuanbao Cao; **Tariq Mahmood**; Faryal Idrees; Muhammad Tahir; Waheed S Khan; Zulfiqar Ali; Muhammad Rizwan; M. Tanveer; Sajad Hussain; Imran Aslam; Dapeng Yu, Metal Catalyzed Synthesis of Ultralong SnO2 Nanobelts: Their Electrical and Optical Properties with oxygen vacancies related Orange Emission, ***Materials Science in Semiconductor Processing***, 26 (2014) 388-394. **(Impact Factor 1.761)**.

37- **Tariq Mahmood,** Chuanbao Cao, Zahid Usmana, Zhuo Chena, Waheed S. Khan Yankun Duoa, Elastic, electronic and optical properties of baddeleyite TiO_2 by first-principles, ***Materials Science in Semiconductor Processing*** 27 (2014) 958-965. **(Impact Factor 1.761).**

2013

38- **Tariq Mahmood**, Chuanbao Cao, Rashid Ahmed, Maqsood Ahmed, M.A. Saeed, Abrar Ahmed Zafar, Talab Husain & M.A. Kamran, Pressure Induced Structural and Electronic Bandgap properties of Anatase and Rutile TiO_2, ***Sains Malaysiana*** 42(2) (2013) 231–237 (**Impact Factor 0.48**).

39- **Tariq Mahmood**, Chuanbao Cao, Muhammad Tahir, Faryal Idrees, Maqsood Ahmed, M. Tanveer, Imran Aslam, Zahid Usman, Zulfiqar Ali, Sajad Hussain, Electronic, elastic, acoustic and optical properties of cubic TiO_2: A DFT approach, ***Physica B:*** 420 (2013) 74-80 **(Impact Factor 1.327)**.

40- Waheed S. Khan, Chuanbao Cao, Imran Aslam, Zulfiqar Ali, Faheem K. Butt, **Tariq Mahmood**, Ghulam Nabi, Ayesha Ihsan, Zahid Usman, Asma Rehman, Single crystalline multi-petal Cd nanoleaves prepared by thermal reduction of CdO, ***Materials Research Bulletin*** 48 (2013) 819–822 **(Impact Factor 2.105)**.

41- Waheed S. Khan, Chuanbao Cao, Faheem K. Butt, Zulfiqar Ali, Ayesha Ihsan, M. Tanveer, Imran Aslam, Ghulam Nabi, Asma Rehman, **Tariq Mahmood**, Sajad Hussain, Preparation of highly pure CdSe hollow structures: Their PL and hydrogen absorption properties, ***Materials Letters*** 92 (2013) 263–266 **(Impact Factor 2.307).**

42- Faryal Idrees, Cao Chuanbao, Faheem Butt, Muhammad Tahir, Muhammad Tanvir, Imran Aslam, Zulfiqar Ali, **Tariq Mahmood**, Jianhua Hou, Facile Synthesis of Novel Nb_3O_7F Nanoflowers, their Optical and Photocatalytic Properties, ***CrystEngComm***, **15** (2013), 8146-8152 **Impact Factor 3.88)**..

43- Muhammad Tahir, Cao Chuanbao, Faheem Butt, Sajid Butt, Faryal Idrees, Zulfiqar Ali, Imran Aslam, Muhammad Tanvir, Tariq Mahmood, Sajad Hussain, Youqi Zhu,

Tubular graphitic-C3N4: a prospective material for energy storage and green photocatalysis***, J. Mater. Chem. A,*** **1** (2013), 13949-13955 **(Impact Factor 5.97).**

44- Khan, Waheed S.; Cao, Chuanbao; Butt, Faheem K.; Ali, Zulfiqar; Nabi, Ghulam; Rehman, Asma; Ihsan, Ayesha; Tanveer, M.; Aslam, Imran; Hussain, Sajad; Usman, Zahid; **Mehmood**, **Tariq,** Preparation of Single-Crystalline Zinc Nitride Dandelion-Like Nanostructures: Their Photoluminescence and Hydrogen-Absorption Properties, ***Science of Advanced Materials***, 5(4), April (2013) , 328-332 **(Impact Factor 2.51)**.

45- Zahid Usman, Chuanbao Cao, **Tariq Mahmood**, "Pressure based First-principles Study of the Electronic, Elastic, Optic and Phonon properties of Zincblende InN" ***Physica B:*** 430 (2013) 67-73 **(Impact Factor 1.327)**.

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60- Zahid Usman, Chuanbao Cao, Waheed S. Khan, **Tariq Mehmood**, Sajad Hussain, Ghulam Nabi, Structural, "Elastic Constant, and Vibrational Properties of Wurtzite Gallium Nitride: A First-Principles Approach", ***The Journal of Physical Chemistry A (ACS)***, 115 (2011) 14502–14509. **(Impact Factor 2.732).**

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photovoltaic properties of the p-Cu_2O/n-ZnO solar cells", ***Electrochimica Acta*** ***(Elsevier)*** 56 (2011) 8342– 8346. **(Impact Factor 3.777)**

63- Waheed S. Khan, Chuanbao Cao, Zahid Usman, Faheem K. Butt, Zulfiqar Ali, Sajad Hussain, Ghulam Nabi, **Tariq Mahmood**, "Thermal evaporation and condensation synthesis of metallic Zn layered polyhedral microparticles", ***Materials Research Bulletin, (Elsevier),*** 46 (2011) 2261–2265. **(Impact Factor 2.13)**

Conference Publications

2015

64- Tariq Mahmood et al., Sahar Ijaz, Shahzad Naseem, Saira Riaz, Chuanbao Cao, Electronic, Elastic and Optical Properties of Monoclinic VO2 by using Density Functional Theory, presented as an invited speaker, International Conference on Solid State Physics 2015 December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

65- Rabia Farooq et al. First Principle Calculations of electronic and optical properties of grapheme like ZnO, *International Conference on Solid State Physics 2015* December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

66- Ali Hassan Tahir et al. Comparative Study of structural and elecetronic properties of ZnSe at LDA and LDA+U, *International Conference on Solid State Physics 2015* December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

67- Ghadah Niaz Abbasi et al. Absorption of Water Molecule on Graphene: A Theoretical study, *International Conference on Solid State Physics 2015* December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

68- Robina Ashraf et al. Comparison of Structural, Optical and Magnetic Properties of Iron Oxide by using GGA+U and LDA+U, *International Conference on Solid State Physics 2015* December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

69- Robina Ashraf et al. DFT Analysis of Iron Oxide by using GGA and GGA+U Approach in ADF, *International Conference on Solid State Physics 2015* December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

70- Robina Ashraf et al. Effect of Hubbard Potential on Electronic, Structural, Optical and Manetic Properties of Hematite, *International Conference on Solid State Physics 2015* December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

71- Robina Ashraf et al. Investigation of Electronic, Optical and Manetic Properties of Manetite by using DFT+U Approach, ***International Conference on Solid State Physics 2015*** December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

72- Robina Ashraf et al. Study of Electronic, Optical and Magnetic Properties of Magnetite by Density Functional Theory, ***International Conference on Solid State Physics 2015*** December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

73- Khush Bakhat et al. Pressure Induced Eletronic and Optical Properties of Rutile SnO2 by First Principle Calculations, ***International Conference on Solid State Physics 2015*** December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

74- M. Haroon Saeed et al. Pressure Induced Structural and electronic properties of Gallium Phosphide by First Principle Calculations, ***International Conference on Solid State Physics 2015*** December 13-17, 2015 at CSSP, University of the Punjab, Lahore, Pakistan.

2012

75- A DFT+U calculations: Band structural and equation of states for anatase and rutile TiO2, ***Enabling Science and Nanotechnology (ESciNano), 2012 International Conference*** on, January 5-7, 2012, Johor Bahru, Malaysia (IEEE, 10.1109/ESciNano.2012.6149648).

76- DFT calculations: Stress dependence structural and band gap study of anatase and rutile TiO2, ***Enabling Science and Nanotechnology (ESciNano), 2012 International Conference*** on, January 5-7, 2012, Johor Bahru, Malaysia (IEEE, 10.1109/ESciNano.2012.6149663).

2007

77- **Tariq Mahmood**, Abrar Ahmed Zafar, Talib Hussain, and Haris Rashid, "GEANT4: Applications in High Energy Physics", ***AIP Conf. Proc***. 888, (2007) 301-304.

Reviewer/Referee of International Journals

- Journal of Advanced Materials and Optoelectronics, Romania.
- Journal of Physics and Chemistry for Solids, Elsevier Publisher, USA.
- Physica B: Condensed Matter Physics, Elsevier Publisher, Netherlands.
- Journal of Physics Latter A, Elsevier Publisher, USA.
- Heliyon, Cell Press, Elsevier Inc., USA.

Award/Honour/Scholarship

- Cash prize Rs. 36000/- in response of international research articles published in international Science Indexed journals with impact factor in year 2013-2014.

- H-Index= 12 (from Researcherid on 09-01-2020), h-Index=12 (Google Scholar on 09-01-2020).
- Has been included, in the Highly Cited Researchers 2016 list provided by Thomson Reuters.
- Cumulative Impact factor (CIF)~90
- Total No of Publications (journal=44, Conference=14)
- More than 500 number of citations of research publication (from Publones/Researcherid on 09-01-2020), Citations from Google Scholar=591 on 09-01-2020
- CSC (Chinese Scholarship Council) Scholarship for PhD studies in China.

International Conferences/Workshops Attended

- Second International Meeting on Frontiers of Physics (IMFP2005), July 25-29, 2005, University of Malaya, Kuala Lumpur, Malaysia.
- MODERN TRENDS IN PHYSICS RESEARCH: Second International Conference on Modern Trends in Physics Research MTPR-06, April 6-11, 2006, University Cairo, Cairo, Egypt.
- Enabling Science and Nanotechnology (ESciNano), 2012 International Conference on, January 5-7, 2012, Johor Bahru, Malaysia.

International Conferences/Workshops Oral Presentation

- Tariq Mahmood, Abrar Ahmed Zafar, Talib Hussain, and Haris Rashid, GEANT4: Applications in High Energy Physics, MODERN TRENDS IN Physics Rresearch: Second International Conference on Modern Trends in Physics Research MTPR-06, April 6-11, 2006, University Cairo, Cairo, Egypt (AIP Conf. Proc. 888, pp. 301-304).
- DFT calculations: Stress dependence structural and band gap study of anatase and rutile TiO2, Enabling Science and Nanotechnology (ESciNano), 2012 International Conference on, January 5-7, 2012, Johor Bahru, Malaysia (IEEE, 10.1109/ESciNano.2012.6149663).

National Conferences/Workshops/Trainings

- Training of Electronic Database "Institute of Electrical and Electronics Engineer (IEEE)", Wednesday January 22, 2014 at main Library of University of the Punjab, Lahore.
- Workshop on Industrial Vaccume Applications at Centre for High Energy Physics, University of the Punjab, Lahore, dated January 28-30, 2014.
- Indigenous on-Campus Training Program for Management Team, December 22 to 26, 2014, Institute of Administrative Sciences, University of the Punjab, Lahore.
- Faculty Orientation Program 2015, 17th to 20th August 2015.
- New World Concepts, an Accredited Business Edge Training, 18th August, 2015.
- One Day Workshop on Use of Turnitin Software and Digital Library, 22 July, 2016.
- One Day Hands-on-Training for Available Resources in collaboration with HEC, Islamabad.

- Two Days Seminar-Cum-Workshop on "Procurement, Procurement Processes and Allied Matters", 21st and 22nd December, 2018 organized by Pakistan Institute of Public Finance Accounts, Lahore.
- Short Course on "Public Financial Management", held on 15th and 16th February, 2019 organized by Pakistan Institute of Public Finance Accounts, Lahore.
- A training/Workshop on Functional Nano Materials "First Functional Nano Materials Summer Camp 2019" held on 29 July to 02 August, 2019, COMSAATS University Islamabad, Lahore.

International Conferences/Workshops Poster Presentation

- A DFT+U calculations: Band structural and equation of states for anatase and rutile TiO_2, Enabling Science and Nanotechnology (ESciNano), 2012 International Conference on, January 5-7, 2012, Johor Bahru, Malaysia (IEEE, 10.1109/ESciNano.2012.6149648).

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Official URL: http://www.gcwus.edu.pk/faculties/physics/faculty-members **at** **www.pu.edu.pk**