

DR. MALIKA RANI

PhD (Physics)

Assistant professor (BPS-19) The Women University, Multan

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Research Projects Grants at WUM

1. Higher Education Commission of Pakistan (HEC) Grant under START UP Research Grant Program at total cost of **0.3723 Million.**
2. Higher Education Commission of Pakistan (HEC) under National Research Program for Universities (NRPU) at total cost of **Rs. 4.841,654 Million.**
3. “A study of optical properties of some strongly correlated electron systems” funded by the Women University Multan at total cost of **Rs 0.195 Million.**

Research laboratory Establishment

“Energy and Environment Development Research Laboratory” established in Department of Physics, The Women University of Multan by using above given grants.

5 International Conference organized/ Grants at WUM

1. Chief organizer of **International conference on Condensed Matter Physics and Nano Technology** On 15-17th January 2019 with HEC grant of Rs. **1.86 Million.**
2. Chief organizer of **iiScience Conference 2020** on 2-4th March 2020 with PHEC grant of **Rs. 0.9226Million.**
3. **iiScience Conference 2020** on 2-4th March 2020 with PSF grant of **Rs. 0.2 Million.** All the presented papers were published in American SPIE Proceeding.
4. Chief Organizer of **International Conference on global challenges in energy and environment development** on 24-26th May 2021 with PHEC grant of **Rs. 0.93500Million.**
5. Chief Organizer of International Symposium on Condensed Matter Physics on 27 April, 2018 with WUM grant **Rs. 0.2 Million.**
6. Chief organizer of **International E-Conference on Promoting Physics Education among Women in Pakistan** on 17-18th August 2020.

Organized Symposium/workshop/Seminar at WUM

1. Chief organizer of “National Symposium on Condensed Matter and Nano Technology” at the Women University Multan on 17 March 2016
2. Co-Organizer of US Bilateral conference on energy nanomaterials organized by National University of Science and Technology NUST 16th January 2020.
3. Focal Person of Primeminister program of Kamyab Jawan program event organized at WUM by PM Office and Ideagist.
4. Co-organizer of DICE organized by Nawaz Shareef Agriculture University Multan

5. Chief organizer of “Career Development Workshop for Women in Science” at the Women University Multan on 22-23 February 2017
6. Organized a training on “How to Prepare Departmental Self-Assessment Report” at the Women University Multan on December 2017.
7. Chief organizer of International Symposium on Condensed Matter Physics on 27 April, 2018
8. Chief organizer of International Workshop on Research Innovation Commercialization and paper writing skills on 30th September 2019.

Editor in Chief of a Journal

Editor in Chief of Women University Multan “Journal of Nanoscope”

Employment Record

Institution	Rank/Position	Date
The Women University Multan	Assistant Professor	6 th May 2016 till to date
The Women University Multan	Assistant Professor (IPFP)	6 th may 2015 to 6 th May 2016
National Institute for Material Science NIMS Japan	Researcher	16 th May 2011 to 10 th February 2012
Bahauddin Zakariya University, Multan	Visiting Faculty/PhD Scholar	2012-2015
University of agriculture Faisalabad	Internee	2007-2008

M. Phil. /PhD Thesis Guided

PhD thesis being guided: 5

M. Phil. thesis guided: 24

M. Phil. thesis being guided: 7+6 Co-supervised

Administrative Responsibilities/Additional Charge at WUM

- Chairperson Hall Council (Continue).
- Director of Office of Research Innovation and Commercialization (ORIC) of the Women University Multan (2018-2020)
- Warden of Aisha and Amna Hostel at the Women University Multan (2018- continue)
- Deputy Director of Quality Enhancement Cell of the Women University Multan (2016-2018)

- Member of Central Purchasing Committee of the Women University Multan(2016 –continue)
- Member of project evaluation Committee of the Women University Multan (2018-contniue)
- Industry linkage Manager of the Office of Research, Innovation and Commercialization (ORIC) of The Women University Multan (2016-2018).
- Nominated Member of Board of Faculty of Sciences (2017), The Women University Multan
- M. Phil. Program Coordinator at Department of Physics (2016), The Women University Multan
- PhD Program Coordinator at Department of Physics (2017-till date), The Women University Multan.
- Chairperson of Gown & Medal Committee of 2nd Convocation of the Women University Multan (2018).
- Nominated Member of Board of studies NFC University Multan (2021)
- In charge of Admission Committee of Department of Physics, The Women University Multan.

Professional Trainings

Sr. No.	Duration	Training Area	Institution
1	3 day (11-13 April 2017)	“Training on Quality Assurance & Governance”	Higher education Commission of Pakistan
2	3 day (04-06 April 2017)	“Training on Public Procurement”	Higher education Commission of Pakistan
3	2Days (October 16-17 2017)	Science Teaching Methodology	Higher education Commission of Pakistan
4	1day (25 th March 2017)	“Training on PhD Student’s Supervision”	Higher education Commission of Pakistan
5	44(27July-8Septmeber 2016)	Faculty Professional Development Program	Higher education Commission of Pakistan
6	5-days (12-16 October 2015)	Career Development workshop for women in Physics	The Abdul Salam International Center for Theoretical Physics (ICTP), Trieste, Italy
7	12-days (23April-4May,2007)	The safety measures in the use of radiations in agriculture and biology	NIAB, Faisalabad, Pakistan
8	15-days (August 13-27,2007)	Research methodology and analytical techniques	University of agriculture Faisalabad, Pakistan

Foreign Visits

Name	Date	Duration	Purpose of Visit
Italy	12-17/10/2015	6 days	To present the status of Women Physicists of Pakistan
Japan	16/04/2011 to 12/02/2012	9 months	PhD Research Work
Turkey	10/12/2019 to 20/12/2019	10 days	Invited for a talk in International Conference

Invited/ contributed talks in International Conferences

Invited Talks (12)

1. An invited talk in “3rd International Conference of Science and technology” on December 17-18, 2020 at in **Mehmet Akif University Antalya Turkey**.
2. An invited talk in International Conference E-conference Promoting Applied Sciences in Pakistan –2020 July 20-21, at School of Natural Sciences, **NUST Islamabad**.
3. An invited talk in “International Conference of Science and technology” on December 13-15, 2018 at in **Mehmet Akif University Antalya Turkey**.
4. Invited talk in “THE 1st INTERNATIONAL CONFERENCE ON MODELING AND SIMULATION OF EMERGING (MSEM-2018)” at the **Abbottabad University of Science and Technology**, from July 02-04, 2018.
5. An invited talk in “the 1st International Conference on Material Science and Nanotechnology (ICMSN 2018)” on September 3-4, 2018 at **Department of Physics University of Baluchistan**.
6. An Invited talk in 1st International Conference on nano materials modeling and simulation advances in theoretical and experimental Physics held on 12-14 February 2018 at **Allama Iqbal Open University Islamabad, Pakistan**.
7. An Invited keynote talk in one day international seminar on Hydrogen fuel cell modeling and simulation held on March 18, 2019 at **Allama Iqbal Open University Islamabad, Pakistan**.
8. An invited talk in "International Conference on Solid State Physics 2017 (ICSSP)" held 10-14 December 2017 at Centre of Excellence in Solid State Physics, **University of Punjab Lahore**.
9. An invited talk in "International Conference on Nano-Composites and Multi-functional Materials 2017 (ICNMM)" held on 21-23 August 2017 at School of Natural Sciences, **NUST Islamabad**.
10. An invited talk at “Regional Conference on Women in Physics 2016” held on April 25-27 at National Center for Physics (NCP) Islamabad, organized by NCP in collaboration with ICTP Italy, **Peshawar university and CPE Karachi**.
11. An Invited talk in National Conference on Nano-Materials for optoelectronic applications held on 3rd June 2015 at **GC University, Faisalabad, Pakistan**.

12. An Invited talk in 4th International Conference on advances in theoretical and experimental Physics held on 16-17 March 2021 at **University of Agriculture Faisalabad, Faisalabad, Pakistan.**

Contributed Talks/Participation (14)

1. Presented Institutional Problems in National Workshop on Physics Education Challenges and Prospects held on 26-27 November 2015 at National Center for Physics (NCP), Islamabad, Pakistan.
2. Participated in Research workshop on online literature searching techniques held on 28th April 2017.
3. Participated in two days' workshop on applied economics using software on May 15-16, 2018
4. Participated in one day workshop on Read people like books held on 18-01-2019.
5. Presented poster at "Regional Conference on Women in Physics 2016" held on April 25-27 at National Center for Physics (NCP) Islamabad, organized by NCP in collaboration with ICTP Italy, Peshawar university and CPE Karachi.
6. Participated in THE WORLDUNIVERSITYRANKINGS, 1ST INTERNATIONAL SEMINAR ON TIMES HIGHER EDUCATION at University of Lahore on 24th October 2019.
7. Contributed talk in International conference on Strongly Correlated Electron Systems and Nano Technology on 15-17 January 2019 at WUM.
8. Presented the status of Women Physicists in Pakistan in "Career Development Workshop for Women in Physics" held on 12-16 Oct 2015 at ICTP Trieste, Italy.
9. Research Poster Presentation in "Career Development Workshop for Women in Physics" held on 12-16 Oct 2015 at ICTP Trieste, Italy.
10. Research Poster presentation in National Physics Colloquium held on 2013 at COMSATS Lahore, Pakistan.
11. A Contributed talk in International Conference on Condensed Matter Physics and Engineering held on 27-29 December 2012 at Bahauddin Zakariya University, Multan, Pakistan.
12. A Contributed talk in 2nd Conference on Frontiers of Nanoscience and Nanotechnology held on 8-10 September 2015 at Pakistan Institute of Nuclear Science and Technology, NILORE, Islamabad, Pakistan
13. A Contributed talk at "International Scientific Spring-2016" held on 7-11 March at National Center for Physics (NCP), Islamabad, organized by NCP in collaboration with ICTP, Italy.
14. A Contributed talk in 1st International Conference on Mathematics and Physics held on 14-16 February 2017 at Air University, Islamabad.

Awards and Scholarships

- International Research Support Initiative Program (IRSIP) of Higher Education Commission of Pakistan for 6 months at NIMS Tsukuba, Japan
- NIMS Internship Program for 3 months at NIMS Tsukuba, Japan

Memberships

1. Member of International Society of Materials Science and Engineering

2. Women Physicists Representative of Southern Punjab

PUBLICATIONS

Sr. No	Research Paper Reference	HEC Category
1.	Malika Rani , Hiroya Sakurai, Susumu Okubo, Keisuke Takamoto, Ryohei Nakata, Takahiro Sakurai, Hitoshi Ohta, Akira Matsuo, Yoshimitsu Kohama, Koichi Kindo and Javed Ahmad. Antiferromagnetic ordering in Sr ₂ CrO ₄ . J. Phys.: Condens. Matter 25 (2013) 226001. doi:10.1088/0953-8984/25/22/226001	W
2.	Malika Rani , Hiroya Sakurai, and Javed Ahmad. Magnetic properties of Ba ₂ CrO ₄ with honeycomb layers. Physica B: Condensed Matter 456 (2015) 182-184. https://doi.org/10.1016/j.physb.2014.08.050	W
3.	Sunaina Rafiq, Saif Ullah Awan, Ren-Kui Zheng, Zhenchao Wen, Malika Rani , Deji Akinwande, Syed Rizwan. Novel room-temperature ferromagnetism in Gd-doped 2-dimensional Ti ₃ C ₂ T _x MXene semiconductor for spintronics. Journal of Magnetism and Magnetic Materials 497 (2020) 165954. doi: org/10.1016/j.jmmm.2019.165954	W
4.	Mehroz Iqbal, Jameela Fatheema, Qandeel Noor, Malika Rani , Muhammad Mumtaz, Ren-Kui Zheng, Saleem Ayaz Khan, Syed Rizwan. Co-existence of magnetic phases in two-dimensional MXene. Materials Today Chemistry 16 (2020) 100271. https://doi.org/10.1016/j.mtchem.2020.100271	X
5.	Wilayat Khan, Sikander Azam, Inam Ullah, Malika Rani , Ayesha Younus, Muhammad Irfan, Pawel Czaja and Iwan V. Kityk. Insight into the Optoelectronic and Thermoelectric Properties of Mn Doped ZnTe from First Principles Calculation. Crystals 9 (2019) 247. https://doi.org/10.3390/cryst9050247	W
6.	Sikander Azam, Mamoonah Mahboob, Sobia Ali, Malika Rani , Muhammad Irfan, Xiaotian Wang, Saleem Ayaz Khan, Mohammed Benali Kanoun and Souraya Goumri-Said. Density Functional Theory Investigations of the Optoelectronic Properties of Li ₂ MnGeS ₄ and Li ₂ CoSnS ₄ . SPIN 9.3 (2019) 1950015.	X
7.	Sikander Azam, Muhammad Irfan, Zeesham Abbas, Malika Rani , Tahira Saleem, Ayesha Younus, Naseem Akhtar, Bushra Liaqat, Muhammad Shabbir and Abdullah, G. Al-Sehemi, DFT study of the electronic and optical properties of ternary chalcogenides AIX ₂ Te ₄ . Mater. Res. Express 6 (2019) 116314. sci-hub.do/10.1088/2053-1591/ab4b81	X
8.	G. Murtaza, Mazhar Ullah, Naeem Ullah, Malika Rani , M Muzammil, R Khenata, Shahid M Ramay and Umair Khan. Structural, elastic, electronic and optical properties of bi-alkali antimonides. Bull. Mater. Sci., 39. 6 (2016) 1581–1591. doi:10.1007/s12034-016-1300-1	

9.	Saleem Ayaz Khan, Sikander Azam, Mohammed BenaliKanoun, Ghulam Murtaza, Malika Rani and Souraya Goumri-Said. Tailoring the electronic structure and opticalproperties of cadmium-doped zinc oxides nanosheet. <i>Cogent Physics</i> 4(2017) 1391734.	Y
10.	Muhammad Umer, Ali Irfan, MamoonaMahboob, Sobia Ali, Malika Rani , SikanderAzam,Salman Khan, Muhammad Irfan, I.V. Kityk. Specific thermoelectric features of novel CaPd ₃ B ₄ O ₁₂ (B = Ti, V)perovskites following DFT calculations. <i>Physica B: Condensed Matter</i> 545 (2018) 330–336. doi: 10.1016/j.physb.2018.06.042	W
11.	Muhammad Irfan, Zeesham Abbas, SaleemAyaz Khan, Mohammad Sohail, Malika Rani , Sikander Azam and I.V. Kityk.Effects of compressed strain on thermoelectric properties of Cu ₃ SbSe ₄ . <i>Journal of Alloys and Compounds</i> 750 (2018) 804e810. doi: 10.1016/j.jallcom.2018.03.310	W
12.	S. Azam , M. Irfan , Z. Abbas , Malika Rani , T. Saleem , A. younus , N. Akhtar , B. Liaqat , M. Shabbir, Abdullah. Al-sehemi,. Electronic structure and optical properties of cubic nanbo ₃ and tetragonal knbo ₃ crystals: first principles study. <i>digest journal of nanomaterials and biostructures</i> , 14 , 751-760.	X
13.	Khan, S. A., Mahboob, M., Yaqoob, T., Zeerak, N., & Malika Rani ,Prevailing scenario of women in physics in Pakistan: A case study of Southern Punjab. <i>Canadian Journal of Physics</i> , 95 (2017), xxix-xxxi. https://doi.org/10.1139/cjp-2016-0673	X
14.	Malika Rani , Women physicists in Pakistan and my story of hard-earned success. <i>Canadian Journal of Physics</i> , 95 (2017), xv-xvii. https://doi.org/10.1139/cjp-2016-0579	X
15.	Hussain, M. Y., & Malika Rani Quantitative measurement of natural radioactivity in vegetable and meat before and after cooking. <i>Pakistan Journal of Agricultural Sciences</i> , 47 (2010) 153-156.	X
16.	M.A. Bhatti, A. Siddiqa, S. Azam, T.V. Vu, M.U. Islam, Malika Rani , S. Muhammad, Magnetic and electrical properties of Ba ₂ Co ₂ Fe ₁₂ O ₂₂ /PANI composites prepared by insitu polymerization, <i>Physica B: Physics of Condensed Matter</i> (2020), doi: https://doi.org/10.1016/j.physb.2020.412410	W
17.	<u>Sunaina Rafiq</u> , <u>Hamiza Ahmad</u> , Malika Rani , and <u>Syed Rizwan</u> "Structural and morphological analysis for cerium (Ce+3) doped intercalated 2D MXene", Proc. SPIE 11561, First iiScience International Conference 2020, 1156103 (27 August 2020); https://doi.org/10.1117/12.2574353	Proceeding
18.	Kiran Batool, Malika Rani , Ayesha Younus, Arshad Mehmood, SikanderAzam, BakhtiarUIHaq, RubiaShafique, Naseem Akhtar, Wilayat Khan and ThamraaAlshahrani.Nanosized Magnesium doped Copper Chromites Spinel Particles Synthesis and Characterization.ECS Journal of Solid State Science and Technology, Volume 9 , (2020) 12. DOI: 10.1149/2162-8777/abce00	X

19.	F. Zaman, N. Srisittipokakun, G. Rooh, J. Kaewkhaob, I. Ullah, M. Rani , H.J. Kim, Development of Na ₂ O-MO-Bi ₂ O ₃ -B ₂ O ₃ -Sm ₂ O ₃ glasses (MO=Ba/Mg) for laser and scintillation application. https://doi.org/10.1016/j.jnoncrysol.2021.120722	W
20	Mubushra Umbreen, Malika Rani , Nisar Ahmed, Electronic and magnetic properties of Tm doped ZnO: a first principle study., Proceedings Volume 11561, First iiScience International Conference 2020; 1156109 (2020) https://doi.org/10.1117/12.2575123	Proceeding
21	M. Rani , M. Jabeen, K. Batool, A. Mehmood, R. Shafique, N. Akhtar, T. Yaqoob, Z. Maliha, M. Akram, M. Umbreen, M. Sattar, Sol-Gel synthesis of Nanoscaled Spinel Using 1, 2-ethanediol as a Gelation Agent. Accepted in Journal of Optoelectronic and Biomedical Materials	Y
22	R. Shafique, M. Rani , A. Mahmood, S. Khan, N. K. Janjua, M. Sattar, K. Batool, T. Yaqoob, Copper chromite/graphene oxide nanocomposite for capacitive energy storage and electrochemical applications. https://doi.org/10.1007/s13762-021-03616-4	W
23	Synthesis and Characterization of MgCr ₂ O ₄ Spinel Nanoparticles by Sol Gel Method, Accepted in Digest Journal of Nanomaterials and Biostructures	
24	Naseem Akhtar, Malika Rani, Arshad Mahmood, Hafiza Saba, Shamim Khan, G.Murtaza, H.H.Hegazy, Abeer AlObaid, Tahani I.Al-Muhimeed, Sajid Ali, Synthesis and Characterization of MXene/BiCr ₂ O ₄ nanocomposite with excellent electrochemical properties, https://doi.org/10.1016/j.jmrt.2021.08.101	W
25	Malika Rani , Kiran Batool, Ayesha Younus, Atta Ullah Shah, Arshad Mehmood, Rubia Shafique, Shamim Khan, G. Murtaza & R. Neffati, Synthesis and characterisation of nanosized spinel particles of nickel-doped iron chromite, https://doi.org/10.1080/09500839.2021.1979269 .	X
26	Muhammad Saeed, Malika Rani , Kiran Batool, Hafiza Batool, Aisha Younus, Sikander Azam, Arshad Mehmood, Bakhtiarul Haq, Thamraa Alshahrani, Muhammad Maqbool, Effect of Li concentration on the structural and optical properties of Co _{1-x} Li _x Cr ₂ O ₄ chromate nanoparticles prepared by sol-gel method, https://doi.org/10.20944/preprints202105.0085.v1	

Research Collaborators (Local)

1. Prof. Dr. Arshad Mahmood, National Institute of laser and optronics NILOP, NILORE, Islamabad.
2. Dr. Syed Rizwan Hussain, Department of Physics, School of Natural Sciences (SNS), NUST Islamabad.
3. Dr. Naveed Kausar Janjua, Department of Chemistry, Quaid-i-Azam University Islamabad.

4. Dr. Zahir Iqbal, GIK Institute of Engineering Sciences & Technology Topi, Khyber Pakhtunkhwa, Pakistan.
5. Dr. Aqeel Ahmad Shah, Department of Metallurgical Engineering, NED University of Engineering and Technology Karachi.
6. Dr. Ghulam Murtaza, Materials Modeling Lab, Department of Physics, Islamia College Peshawar.
7. Dr. Sardar Sikandar Hayyat, Faculty of Engineering and Applied Sciences, Department of Physics, RIPHAH International University I-14 Campus Islamabad, Pakistan.

Research Collaborators (Foreign)

1. Dr. Mikael Syvajarvi, JMS Centre for research Utilisation, ICM Research Institute, Ulrika Sweden.
2. Dr. Wassem Abbas, Shanghai Jiao Tong University, Shanghai, China.