

Curriculum- Vitae

Dr. Umesh A. Palikundwar

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Current Designation:

- **Professor**, Post Graduate Teaching Department of Physics, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
- **Convenor**, RUSA Centre, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Teaching Experience: **24 Years [UG: 9 Years and PG: 15 Years]**

Research Experience: **14 Years [Excluding Ph.D. work]**

Research Guidance:

No. of Awarded Ph.D. Students: **03**

No. of Students Currently Working: **07**

Academic Qualification (Undergraduate Onwards)

S.No.	Degree	Year	Subject	University/Institution
1.	B.Sc.	1995	Physic, Electronics, Mathematics	Rashtrasant Tukadoji Maharaj Nagpur University
2.	M.Sc.	1998	Physics	Rashtrasant Tukadoji Maharaj Nagpur University
3.	SET	2001	Physics	Pune University (for Maharashtra)
4.	Ph.D.	2010	Physics	Rashtrasant Tukadoji Maharaj Nagpur University

Ph. D Thesis Title: ‘Electrical, Magnetic and X-ray Studies of GMR Materials of the type LnMO_3 ’.

Guide’s Name: Dr. V. B. Sapre and Dr. S. V. Moharil

Place: Department of Physics, Rashtrasant Tukadoji Maharaj Nagpur University

Year of Award: 2010

Work experience (in chronological order):

S.No.	Positions held	Name of the Institute	From	To
1.	Lecturer	Bhalerao Science College, Saoner	01/07/2000	22/06/2009
2	Assistant Professor	Department of Physics, Rashtrasant Tukadoji Maharaj Nagpur University	23/06/2009	15/02/2017
3.	Associate Professor	Department of Physics, Rashtrasant Tukadoji Maharaj Nagpur University	16/02/2017	17/08/2022
4.	Convenor	RUSA Centre, Rashtrasant Tukadoji Maharaj Nagpur University	31/12/2020	Till Date
5.	Coordinator	Obero Centre for Excellence, Rashtrasant Tukadoji Maharaj Nagpur University	16/04/2022	Till Date
6.	Professor	Department of Physics, Rashtrasant Tukadoji Maharaj Nagpur University	18/08/2022	Till Date

Professional Recognition/ Award/ Prize/ Certificate, Fellowship received.

S.No	Name of Award	Awarding Agency	Year
1.	Best Researcher	VDGOOD Professional Association	2020
2.	Best Paper Presentation in oral category in National Conference on Recent Trends in Basic and Applied Materials (RTBAM-09)	Department of Physics, Govt. Institute of Science, Nagpur	2009
3.	Junior Research Fellowship	DAE Sponsored Research Project at Department of Physics, RTMNU	1998-1999

Details of Research Projects Undertaken

- **Minor Research Project: Principal Investigator**; Title: “Synthesis and characterization of some CMR Manganites” **UGC, New Delhi, Completed** (01 July 2012 to 30 June 2014) (**Grant-in-Aid Rs. 2,00,000/-**)
- **Minor Research Project: Principal Investigator**; Title: “Synthesis, Characterization and X-Ray Spectroscopic Studies of Fe-based Bulk Metallic Glasses” **University Research Project, RTM Nagpur University, Completed** (01 September 2016 to 31 August 2018) (**Grant-in-Aid Rs. 2,80,000/-**)

- **Collaborative Major Research Project: Principal Investigator;**
Title: “Design and Development of X-ray Detectors using X-ray Lithography Facility”, UGC-DAE Consortium for Scientific Research, Indore, **Completed** (01 April 2017 to 31 Marh 2020) (Grant-in-Aid Rs. 12,15,000/-)
- **Major Research Project Under DST Women Scientist A Scheme: Mentor;**
Title: “X-ray Absorption Spectroscopic Studies of Some Topological Insulators”, **Department of Science and Technology, New Delhi, Completed** (2015 - 2018) (Grant-in-Aid Rs. 19,50,000/)

Details of Departmental Projects Undertaken

- **DST-FIST Departmental Project: Project Deputy Coordinator;**
Department of Science and Technology, New Delhi, (Grant-in-Aid Rs. 1,47,00,000/-)
- **RUSA Departmental Project: Coordinator, RUSA XRD Lab ; (Grant-in-Aid Rs 30,00,000/-)**

Other Important Relevant Information

- My proposal titled ‘XAFS study of $\text{La}_{1-y}\text{Sr}_y\text{Co}_x\text{Mn}_{1-x}\text{O}_3$ and $\text{LaCo}_x\text{Mn}_{1-x}\text{O}_3$ perovskites’ was selected under the framework of Indo-Italian programme of cooperation in Science and Technology of Department of Science and Technology (DST), India and Italian Government to carry out XAFS measurements at **ELETTRA Synchrotron Source, Trieste, ITALY**, from 19 to 28 November 2006.
- My proposal titled “X-ray absorption fine structure (XAFS) study of Topological insulating materials $\text{Bi}_{2-x}\text{Mn}_x\text{Se}_3$ and $\text{Bi}_{2-x}\text{V}_x\text{Se}_3$ was selected to carry out XAFS measurements at **SLRI Synchrotron Source, Nakorn Ratchasima, THAILAND**, from 4 to 7 November 2017.
- My proposal titled ‘Investigation of local structure of atoms and Nano-crystallization in Al-Fe-Si and Hf-Cu-Ni amorphous alloys’ was selected under the ‘DST-DESY project to carry out the proposed experiment on DESY, Germany’ of Department of Science and Technology (DST), India to carry out XAFS measurements at **PETRA III, Synchrotron Source, Hamburg, Germany**, from 10 to 12 December 2018.
- Working as a **Member of Editorial Board of Universal Journal of Physics and Application, Horizon Research Publishing Corporation, USA.**
- Worked as a **Member of Faculty of Rashtrasant Tukadoji Maharaj Nagpur University’s Science and Technology Faculty** from 4th December 2018 to 31st August 2022.
- Working as a **Member of BOS Physics of Rashtrasant Tukadoji Maharaj Nagpur University’s Science and Technology Faculty.**
- Working as a **Member of RRC for Physics of Rashtrasant Tukadoji Maharaj Nagpur University.**
- Worked as a reviewer for Journal of Alloys and Compounds, Elsevier Publications

- Was assigned by the University to assist the **committee formed by Maharashtra Government for amendments in MPUA Act-2016.**
- Worked as a chairman and a member in Local Enquiry Committees of the University for starting new colleges, continuing affiliation of the colleges.

Publications (*List of papers published in Journals*)

1. Akash A. Deshmukha, Anuj A. Khond, Jatin G. Bhatt and **Umesh A. Palikundwar**, *Thermodynamic and Kinetic Studies of Glass-Forming Compositions in Ca–Mg–Cu Ternary Metallic Glasses*, **Glass Physics and Chemistry**, **49**, 604, 2023
2. **Umesh A. Palikundwar**, Kalpana R. Nagde, Chandragupta M. Dudhe, Gautam C. Wakde, *Effect of Sr doping on structural, magnetic and transport properties of $\text{La}_{1-y}\text{Sr}_y\text{Mn}_{0.5}\text{Co}_{0.5}\text{O}_{3\pm\delta}$* , **Physica B: Condensed Matter**, **657**, 414823, 2023
3. R. R. Urkude, **Umesh A. Palikundwar**, *Phonon dynamics of $(\text{Bi}_{1-x}\text{Sb}_x)_2\text{Te}_3$ topological insulators by Raman spectroscopy*, **Physica B: Condensed Matter**, **655**, 414754, 2023
4. Gautam C. Wakde, Vijay R. Raghorte, Gaurav B. Pethe, Anand S. Kakde, Chandragupta M. Dudhe and **Umesh A. Palikundwar**, *Study of XRD, dielectric properties and DC electrical conductivity of Li-Zn-Al ferrite synthesized by sol-gel combustion method*, **Ferroelectrics**, **587**, 18, 2022
5. Akash A. Deshmukh, Anuj A. Khond, Jatin G. Bhatt, **Umesh A. Palikundwar**, *Local structure order around Ni in Hf–Cu–Ni glassy ribbons: XANES and EXAFS study at Ni K-edge*, **Physica B: Condensed Matter**, **630**, 413687, 2022
6. A. A. Deshmukh, A. P. Srivastava, J. P. Singh, Manish Kumar, K. H. Chae, K. Asokan and **U. A. Palikundwar**, *Local structure investigation of Co–Fe–Si–B ribbons by extended X-ray absorption fine-structure spectroscopy*, **Journal of Synchrotron Radiation**, **28**, 240, 2021
7. R. R. Urkude, S. N. Jha, A. K. Yadav and **U. A. Palikundwar**, *Study of local structure around Bi in topological insulating materials $(\text{Bi}_{1-x}\text{Sb}_x)_2\text{Te}_3$ using extended x-ray absorption fine structure technique*, **Journal of Physics and Chemistry of Solids**, **150**, 109834, 2021
8. A A Deshmukh, A A Khond, A P Srivastava, J G Bhatt and **U A Palikundwar**, *Investigation of glass forming ability parameters in Hf–Cu–Ni glassy alloy*, **Eng. Res. Express** **2**, 015047, 2020
9. Akash A. Deshmukh, Anuj A. Khond, Jatin G. Bhatt, **Umesh A. Palikundwar**, *Understanding the role of Er on glass-forming ability parameters and critical cooling rate in Fe–based multicomponent bulk metallic glasses*, **Journal of Alloys and Comp.**, **819**, 152938, 2020
10. A. P. Srivastava, D. Arvindha Babu, A. Verma, Akash A. Deshmukh, A. Kaushal, **Umesh A Palikundwar**, *Understanding the effect of Hf on thermal stability and glass forming ability of $\text{Fe}_{57}\text{Co}_{30}\text{Zr}_{7-x}\text{Hf}_x\text{B}_4\text{Cu}_1$ ($x= 3, 5, \text{ and } 7$) metallic glasses*, **J. Non-Crys. Solids**, **503-504**, 7, 2019
11. Akash A. Deshmukh, S. A. Kuthe, P. M. Gade, **U. A. Palikundwar**, *Investigating the Applicability and Limitations of Glass-Forming Criteria Based on Bond Parameters on Thermal Stability in Mg- Based Multicomponent Bulk Metallic Glasses*, **Transaction of the Indian Institute of Metals**, **71**, 2637, 2018
12. Sudhanshu Kuthe, Akash A. Deshmukh, **Umesh A. Palikundwar**, Jatin Bhatt, *Computational platform for manufacturing bulk metallic glasses based on GFA Parameters*, **Transaction of the Indian Institute of Metals**, **71**, 2731, 2018

13. C M Dudhe, B K Sakhare, S S Panchbhair, S J Khambadkar, N V Dhoke, C P Chaudhari and **U A Palikundwar**, *A logical explanation of structurally unfit X-ray diffraction peaks in nanoferroelectrics*, **Bulletin of Materials Science**, **41**, **24**, **2018**
14. R. R. Urkude, Archana Sagdeo, R. Rawat, R. J. Choudhary, K. Asokan, S. Ojha, and **U. A. Palikundwar**, *Observation of Kondo behavior in the single crystals of Mn-doped Bi₂Se₃ topological insulator*, **AIP Advances**, **8**, **045315**, **2018**
15. A. A. Deshmukh, A. A. Khond, and **U. A. Palikundwar**, *Influence of compositions on thermal stability and thermodynamic parameter in Ca-Mg-Cu bulk metallic glasses*, **AIP Conf. Proc.**, **1953**, **090071**, **2018**
16. A. A. Deshmukh, S. A. Kuthe, and **U. A. Palikundwar**, *Understanding the effect of compositions on electronegativity, atomic radius and thermal stability of Mg-Ni-Y amorphous alloy*, **AIP Conf. Proc.**, **1953**, **090016**, **2018**
17. Rajashri Urkude, Rajeev Rawat, and **Umesh A. Palikundwar**, *Surface quantum oscillations and weak antilocalization effect in topological insulator (Bi_{0.3}Sb_{0.7})₂Te₃*, **AIP Conf. Proc.**, **1942**, **110025**, **2018**
18. A. A. Deshmukh, **U. A. Palikundwar** and G. R. Navnagar, *Understanding the correlation of thermodynamic parameter with topological instability and thermal stability in Zr-Cu-Ag Bulk Metallic Glasses*, **SCIENCE JOURNAL – 2018**, **Rashtrasant Tukadoji Maharaj Nagpur University**, **XIV**, **41**, **2018**
19. R. R. Urkude, R. Rawat and **U. A. Palikundwar**, *Temperature and impurity effect on parallel field magnetoconductance of bulk insulating topological insulator (Bi_{1-x}Sb_x)₂Te₃*, **J. Phys.: Condens. Matter**, **29**, **495602**, **2017**
20. A.A. Deshmukh, A.A. Khond, **U. A. Palikundwar**, *Prediction of glass forming compositions in Al-Fe-Si alloy system by thermodynamic approach*, **J. Non-Crys. Solids**, **477**, **50**, **2017**
21. C.M. Dudhe, S.B. Nagdeote and **U. A. Palikundwar**, *Synthesis and characterization of a novel alkaline earth niobate Ca_{0.5}Sr_{0.5}Nb₂O₆*, **Journal of Alloys and Comp.**, **658**, **55**, **2016**
22. SR Rahangdale, **U. A. Palikundwar**, SP Wankhede, Bhushan Dhabekar, Sonal Kadam and SV Moharil, *Luminescence in LiCaAlF₆: Eu, La Phosphor*, **Journal of Lumin.**, **178**, **446**, **2016**
23. C.M. Dudhe, S.B. Nagdeote and **U. A. Palikundwar**, *Synthesis and characterization of Ca²⁺ substituted barium niobate nanoparticles for photocatalytic and luminescence applications*, **Materials Research Bulletin**, **81**, **43**, **2016**
24. R. R. Urkude and **U. A. Palikundwar**, *Effect of annealing temperature on structure and electrical properties of topological insulator Bi₂Te₃*, **AIP Conf. Proc.**, **1728**, **020211**, **2016**
25. SR Rahangdale, **U. A. Palikundwar**, SP Wankhede, Bhushan Dhabekar, Sonal Kadam and SV Moharil, *The thermoluminescence study of epoxy based LiF:Mg,Cu,P dosimeters*, **AIP Conf. Proc.**, **1728**, **020101**, **2016**
26. S.R. Rahangdale, **U. A. Palikundwar**, S.P.Wankhede, Bhushan Dhabekar, Sonal Kadam and S.V. Moharil, *Effect of co-doping on luminescence of LiCaAlF₆: Eu phosphor*, **Journal of Lumin.**, **167**, **80**, **2015**

27. S.R. Rahangdale, S.P. Wankhede, Sonal Kadam, B. S. Dhabekar, **U. A. Palikundwar** and S. V. Moharil, *Application of CaSO_4 : Dy for high dose dosimetry*, **Int. J. of Lumin. and appli.**, **5**, 486, 2015
28. R. R. Urkude, P. T. Patil, S. B. Kondawar and **U. A. Palikundwar**, *Synthesis, Characterization and Electrical properties of a Composite of Topological Insulating Material: Bi_2Te_3 -PANI*, **Procedia Materials Science**, **10**, 205, 2015
29. S. R. Rahangdale, S. P. Wankhede, B. S. Dhabekar, **U. A. Palikundwar**, and S. V. Moharil, *TL-OSL study of Li_3PO_4 : Mg, Cu phosphor*, **AIP Conf. Proc.**, **1675**, 020054, 2015
30. R. R. Urkude and **U. A. Palikundwar**, *Effect of Pb on structural and electrical properties of Bi_2Te_3* , **J. of Sci. Inf.**, **9**, 123, 2014
31. R. R. Urkude and **U. A. Palikundwar**, *Study of structure and electrical properties of Bi_2Te_3* , **Int. J. of Res. in Bio., Agri. and Tech.**, **1**, 1114, 2014
32. **Umesh A. Palikundwar**, V. B. Sapre, S. V. Moharil and K. R. Priolkar, *Local structure around Mn and Co in $\text{LaMn}_{1-x}\text{Co}_x\text{O}_{3\pm\delta}$: an EXAFS study*, **J. Phys.: Condens. Matter**, **21**, 235405, 2009
33. R. K. Vyass, S. K. Joshi, B. D. Shrivastava, V. B. Sapre, **U. A. Palikundwar** and R. N. Patel, *X-ray K-absorption near edge structure (XANES) study of some copper (II) mixed ligand complexes*, **Proc. Nat. Acad. Sci. India Sect. A**, **79**, 125, 2009
34. **Umesh A. Palikundwar**, V. B. Sapre, S. V. Moharil and K. R. Priolkar, *XANES, magnetic and magnetotransport studies of $\text{LaMn}_{1-x}\text{Co}_x\text{O}_{3\pm\delta}$* , **Ind. J. of Cryogen.**, **33**, 76, 2008

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