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ACADEMIC ACHIEVEMENTS

- Ph.D.** **Physics**, thesis entitled “*Synthesis, Characterization, Antibacterial and Anticancer studies of Metal oxide (MgO, ZnO, NiO) nanoparticles*”
Bharathidasan University, July – 2021.
- Ph.D.** **Physics**, thesis entitled “*Spectroscopic Studies of Some Metal Complexes*”
from Dravidian University, September – 2016.
- B. Ed** **First Class 63.7%** from Institute of Education, Bharathidasan University,
November 2007.
- M. Phil.** **Physics with First Class-Distinction with D Grade (77.8%)** -thesis entitled
“*Thermodynamic and Acoustical Behaviour of Binary Mixture*” from Jamal
Mohamed College Bharathidasan University, September – 2007.
- M. Sc.** **Physics with First class 65.94%** from Jamal Mohamed College
Bharathidasan University, April – 2006.
- B.Sc.** **Physics with second class 58.04%** from Jamal Mohamed College
(Bharathidasan University) April – 2004.
- H. S. C.** **First group (Biology with Mathematics) with 57.14%** from the Khajamian
Higher Secondary School, Trichy, March – 2001.
- S. S. L. C.** With **66.40%** from St.Joseph’s College Higher Secondary School, Trichy,
March – 1999.

EXPERIENCE PROFILE

Teaching Experience:

- Presently working as **Assistant Professor of Physics**, Jamal Mohamed College,
Tiruchirappalli since 16th June 2009.
- I have worked as **Assistant Professor of Physics** at Chettinad College of Arts and
Science, Trichy from 7th January 2008 to 15th June 2009.

RESEARCH EXPERIENCE

- Extensive researcher having thirteen years of research experience.

RESEARCH INTERESTS

- Vibrational Spectroscopy

- Chemical and Green synthesis of metal and metal oxide nanoparticles with their biomedical applications: toxicology (in-vitro & in-vivo), Antioxidant, Dielectric

RESEARCH SKILLS & EXPERTISE

- Synthesis of nanoparticles: Green synthesis of Ag, ZnO, CeO₂, CuO and NiO from plant extracts; co-precipitation method for the synthesis of alkaline metal and transition metal doped ZnO nanoparticles.
- Characterization Techniques: XRD, XPS, FTIR, FT-Raman, UV-Visible, Photoluminescence, Zeta potential, FE-SEM, TEM, Fluorescence microscopy and confocal microscopy.
- Biomedical Application: Anti-microbial studies, microbe's morphological analysis, drug delivery using ZnO nanoparticles (in-vitro & in-vivo).

COMPUTER SKILLS

Well versed in administrative packages such as word, excel, power point and Computational chemistry software's Gaussian 09, Gauss view 5 etc.

ACADEMIC RESPONSIBILITIES

- Assisting the HOD and all Senior Staff in all Academic Activities.
- Helping the CIA test Coordinator to conducting the CIA Test Program.
- Served as civil service coaching center member at 2015.
- Part V activity (JAMCROP) in-charge for SF (Men) students from Jun 2015 to 2019.
- IQAC Core Committee Member

SEMINARS/ TRAINING PROGRAMMES / WORKSHOP/ SYMPOSIUM ATTENDED

1. Participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "**Novel Nanostructured Mg based alloy for industrial and biomedical applications**" from 30/08/2021 to 03/09/2021 at Jawaharlal Nehru New College of Engineering Shimoga.
2. Participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "**AICTE Training and Learning (ATAL) Academy Faculty Development Program (FDP) on fundamentals of Novel Materials**" from 24 – 28 August 2021 at Tripura University.
3. Successfully completed One Week Faculty Development Programme on "**Entrepreneurship, Incubation and Innovation**" Organized by Teaching Learning Centre Ramanujan College University of Delhi Sponsored by MHRD Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching , from 23-29 June 2020.
4. Participated in FDP on "**Thriving R&D Ecosystem in Higher Education**" Organized by R&D Cell, SAGE University, Indore, from 17 -20 June 2020.
5. Participated in three days online Faculty Development Programme (FDP) on "**Physics & Technology of Materials**" Organized by Post Graduate Department of Physics, Srinivasan College of Arts and Science, Perambalur, during 03 – 05 June 2020.

6. Participated in “**National conference on Computing and Communication Technologies**” organized by P.G Department of Information Technology, Jamal Mohamed College, Trichy on 17th September 2016.
7. Participated in the one-day Faculty Enrichment Program “**Use of NLP Techniques in Teaching**” organized by Department of Information Technology’s association with ICT Academy of Tamilnadu, Jamal Mohamed College, Trichy on 05th March 2016.
8. Participated in the one-day Faculty Development Program on “**Introduction to People Empowering People**” organized by ICT Academy of Tamilnadu, Jamal Mohamed College, Trichy on 13th December 2014.
9. Participated in the one-day Workshop on “**Amateur Radio** and witnessed the “**Home Brew**” organized by Department of Physics, Jamal Mohamed College in association with Amateur Redio Association of Tiruchirappalli on 28th February 2014.
10. Participated in the International Seminar on “**Crystalline Materials and Optoelectronics Decices**” under UGC Autonomous Grant organized by Department of Physics, Jamal Mohamed College, Trichy on 03rd February 2014.
11. Participated in the National Level Seminar on “**Nanoscience and Laser Materials Processing, NLMP-2013**” under UGC Autonomous Grant organized by Department of Physics, Jamal Mohamed College, Trichy on 09th March 2013.
12. Participated in a one day workshop on “**Importance of soft Skills**” organized by National Service Scheme, Jamal Mohamed College, Trichy on 26th February 2013.
13. Participated in the one day seminar on “**Teaching, Learning and Research in Higher Education – Excellence and Beyond Excellence**” organized by the Internal Quality Assurance Cell, Jamal Mohamed College, Trichy on 07th March 2012.
14. Participated in the UGC Sponsored National Seminar on “**Examination Reforms**” held at Jamal Mohamed College, Trichy on 24th February 2010.
15. Participated in the Seminar on “**Creating Competitiveness to excel in Higher education-a TQM approach**” organized by Internal Quality Assurance Cell, Jamal Mohamed College, Trichy on 08th December 2010.
16. Participated in the UGC Sponsored international Seminar on “**Nano Science and Technology**” organized by Department of Physics, Jamal Mohamed College, Trichy on 07th October 2010.
17. Participated in the NAAC Sponsored National level Seminar on “**Quality Enhancement in Teaching, Research and Extension in Higher Education Institutions – Prospects and Problems**” organized by International Quality Assurance Cell, Jamal Mohamed College, Trichy during 15th and 16th April 2010.
18. Participated in “**Tamil Software workshop**” organized by Department of Computer science, Tamil University, Tanjavur during 26th & 27th September 2008.
19. Participated in UGC sponsored State Level Seminar on “**Recent Advances in Thin Film Technology**” organized by Department of Physics, Jamal Mohamed College, Trichy on 28th September 2005.

20. Participated in UGC sponsored **State Level Seminar** on “**Application of Ultrasonics to Organic and Biomolecular Compounds**” organized by Department of Physics, Jamal Mohamed College, Trichy during 26th & 27th September 2005.

LIST OF RESEARCH PUBLICATIONS IN INTERNATIONAL JOURNALS

1. Karthikeyan, C., Sisubalan, N., Varaprasad, K., Aepuru, R., Yallapu, M. M., Viswanathan, M. R., **Umaralikhan** & Sadiku, R. (2022). Hybrid nanoparticles from chitosan and nickel for enhanced biocidal activities. *New Journal of Chemistry*, 46(27), 13240-13248. DOI <https://doi.org/10.1039/D2NJ02009B>
2. **Umaralikhan, L.**, and M. Jamal Mohamed Jaffar. "Williamson-Hall analysis of ZnO and Mg doped ZnO nanoparticles prepared via Psidium guajava leaf extract." *Jamal Academic Research Journal: An Interdisciplinary* 1.1 (2020): 38-41. DOI: <https://doi.org/10.46947/jarj1120206>
3. Karthikeyan, C., Arun, L., Hameed, A.H., Gopinath, K., **Umaralikahan, L.**, Vijayaprasath, G. and Malathi, P., 2019. Structural, optical, thermal and magnetic properties of nickel calcium and nickel iron co-doped ZnO nanoparticles. *Journal of Materials Science: Materials in Electronics*, 30(9), pp.8097-8104. DOI: <https://doi.org/10.1007/s10854-019-01160-z>
4. **Umaralikhan, L** and M. Jamal Mohamed Jaffar. "X-ray broadening and optical properties of NiO nanoparticles prepared via co-precipitation method by varying temperature." *Iranian Journal of Science and Technology, Transactions A: Science* 42, no. 4 (2018): 2345-2348. DOI: <https://doi.org/10.1007/s40995-017-0368-9>
5. **Umaralikahn. L** and Jamal Mohamed Jaffar. M. 2017. Green synthesis of ZnO and Mg doped ZnO nanoparticles, and its optical properties. *J Mater Sci: Mater Electron*. 28 (11) 7677-7685. DOI: <https://doi.org/10.1007/s10854-017-6461-1>
6. **Umaralikahn. L** and Jamal Mohamed Jaffar. M. 2016. Antibacterial and anticancer properties of NiO nanoparticles by co-precipitation method. *JOAASR* 1(4) 24 – 35.
7. **Umaralikhan. L**, Raju. S, Liyahathalikhan. B, Joseph. P.S, 2016. Vibrational spectra and theoretical calculations of thiocynatobi(pipeidinyl dithiocarbamato)antimony(III). *JOAASR* 1(5) 4-14.
8. **Umaralikahn. L** and Jamal Mohamed Jaffar. M. 2016. Green Synthesis of MgO Nanoparticles and its Antibacterial Activity. *Iran. J. Sci. Technol. Trans. Sci.* DOI: <https://doi.org/10.1007/s40995-016-0041-8>
9. **Umaralikhan, L.**, & Jaffar, M. J. M. (2018). WILLIAMSON-HALL PLOTTING STUDIES OF MgO AND Fe DOPED MgO NANOPARTICLES BY GREEN METHOD. *European Journal of Biomedical*, 5(02), 793-799.
10. Ragamath Ali. M, **Umaralikhan. L**, DR. Jamal Mohamed Jaffar. M. 2015. Antibacterial effect of silver nanoparticles synthesized using *Curcuma aromatica* leaf

extract. International journal of applied biology and pharmaceutical technology, 6 (3) 115-122.

- 11. Umaralikhan. L,** Raju. S, Liyahathalikhan. B, Joseph. P.S, 2014. Experimental and Quantum chemical Calculations of Tris(morpholinyl dithiocarbamato) antimony (III), AASR. 5(2) 159-165.
- 12. Umaralikhan. L,** Raju. S, Liyahathalikhan. B, Joseph. P.S, 2014. Synthesis, structural and spectroscopic properties of Tris(morpholinyl dithiocarbamato) arsenic (III). JCMMD. 4 (1) 25-32.
- 13. Umaralikhan. L,** Raju. S, Liyahathalikhan. B, Joseph. P.S, 2014. Synthesis, structural and spectroscopic properties of Tris (diethyl dithiocarbamato) arsenic (III). AASR, 5(1) 210-215.