

Name :- Dr. Pallavi Ganesh Undre

Qualification :- M. Sc. (Physics) Ph. D.

Research Publications :- 10 (SCI listed)

CURRICULUM VITÆ

- Personal information:**

Name: - **Dr. Pallavi Ganesh Undre**
Designation - Assistant Professor
Shikshan Maharshi Dyandeo Mohekar College Kalamb,
Dist. Osmanabad
Joining Date- 01 July 2019
Date of Birth: - 01th February, 1992
Address: - Department of Physics, Shikshan Maharshi Dyandeo Mohekar
Mahavidyalaya Kalamb, Dist. Osmanabad
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Known Languages: - English, Hindi and Marathi.
Strengths: - Hardworking.

- Educational Qualifications:**

Sr. No.	Class	Board/University	Passing Year
1	Doctor of Philosophy (Ph. D.)	Dr. B. A. M. University, Aurangabad	Jan - 2019
2	Master of Science (M. Sc. Physics)	Dr. B. A. M. University, Aurangabad	June - 2014
3	Bachelor of Science	Dr. B. A. M. University, Aurangabad	June - 2012
4	HSC	Latur Divisional Board	Feb – 2009
5	SSC	Latur Divisional Board	Mar -2007

- **Research Topic:**

“ Studies on synthesis and characterization of doped and undoped metal oxide nanoparticles.”

Summary:-

The doping of transition metals like Ni^{2+} and Cu^{2+} can also generate modifications in the structural, morphological, optical, electric, dielectric and magnetic properties for desired applications like optoelectronics, spintronics and biomedical. In the literature, few reports are available on the Ni^{2+} and Cu^{2+} doped ZnO nanomaterials. The results of all these reports are not in good agreement. Also, no systematic correlation between the investigated properties is reported. Further, the doping of Ni^{2+} and Cu^{2+} ions has not been tested to its solubility limit. Considering the above facts, the aim of the work is to synthesize Ni^{2+} and Cu^{2+} doped ZnO nanoparticles using sol-gels auto combustion method and to investigate and correlate their structural, morphological, electrical, dielectric, optical and magnetic properties using standard characterization techniques.

Characterization Techniques/ Instruments Handled:-

1. Thermal analysis (TG-DTA) (IIT Bombay)
2. X-ray diffraction technique (XRD) (Dr.B.A.M.U. Aurangabad)
3. Field emission scanning electron microscopy (FE-SEM/EDAX) (North University, Jalgaon)
4. Transmission electron microscopy (TEM)/Selected area diffraction (SAED) (UGC-CSIR, Indore)
5. Fourier transforms Infrared spectroscopy (FTIR) (Dr.B.A.M.U. Aurangabad)
6. Raman spectroscopy (Dr.B.A.M.U. Aurangabad)
7. Ultraviolet visible spectroscopy (UV-Vis) (UGC-CSIR, Indore)
8. Two probe method (Dr.B.A.M.U. Aurangabad)
9. Dielectric measurement with LCR-Q meter (Shivaji University Kolhapur)
10. Voltage-Current (I-V) characteristics (Dr.B.A.M.U. Aurangabad)
11. Vibrating sample magnetometer (VSM) (UGC-CSIR, Indore)

- **Teaching Experience:**

Since last 4 year working as assistant professor in Department of Physics, Shikshan Maharshi Dyandeo Mohekar Mahavidyalaya Kalamb, Dist. Osmanabad

Papers Name:- 1) Mechanics, Properties of Matter and Sound

2) Electricity and Magnetism

3) Mathematical, Statistical Physics and Relativity

4) General Electronics

5) Classical and Quantum Mechanics

6) Atomic, Molecular Physics and LASER

7) Electrodynamics

8) Modern and Nuclear Physics

• **Extracurricular Activities:**

- Participated and presented research paper on a “**Enhancement of Electrical Resistivity in Nickel Doped ZnO Nanoparticles**” at MAKARC-Aurangabad (NCRTDMS-2017) on 16th December 2017.
- Participated and presented research paper on a “**Enhancement of Electrical Resistivity in Nickel Doped ZnO Nanoparticles**” at MIT-Aurangabad (ICMMD-2017)during 11th to 12th December 2017.
- Participated and presented research paper on a “**Structural, Morphological and Magnetic Properties of Pure and Ni-Doped ZnO Nanoparticles**” held at Gov. Engineering Collage, Bikaner during 24th to 25th November 2017.
- Participated and presented research paper on a “**Structural, Morphological, Electric and Dielectric Properties of Cu²⁺ Doped ZnO Nanoparticles**” at Savitribai Phule Pune University, Pune during 11th to 15th July 2017.
- Participated and presented paper on a “**Some Effects of Ultraviolet Radiation on Earth’s Life**” at Karmaveer Mamasheh Jagdale Mahavidyalaya, Washi Dist. Osmanabad on 3rd January 2015.
- Participated and presented paper in International Science Festival (IISF - 2019) organized by Ministry of Science and Technology, Ministry of Earth Sciences during 5-8 November, 2019 at Kolkata, West Bengal.
- International Web Conference on Science, Engineering and Technology-2020 (Attended and presented paper)
- International web Conference on Advanced Material Science and Nanotechnology-2020 (Attended, Committee Member and presented paper)
- COVID19 Awareness Programme For Self-Management by Dr. B. A. M. U. Sub-Camp, Osmanabad
- Essential Concepts in Chemical Sciences Webinar organized by IITE on 15 to 17 April-2020
- COVID19 Awareness Program by Shivaji University, Kolhapur
- NAAC Awareness Programme For Faculty by JPM Arts and Science College, Kanchiyar, Labbakkada
- Two Weeks Faculty Development Programme on Managing Online Classes and Co-Creating Moocs:2.0 (18 May- 03 June)
- Four Weeks Orientation Programme For Faculty (04 June – 05 July)
- National Webinar on Digital Transformation in Educational Institutes by K. M. J. M. Washi, Dist. Osmanabad

- ⇒ Webinar on IPR: Signification for Researchers and Business by Dept. of IT, J. N. E. C. MGM University, Aurangabad
- ⇒ Webinar on CAS PROMOTION ISSUES by Shikshan Maharshi Dyandeo Mohekar Mahavidyalaya, Kalamb.

- **List of Publication:**

- **Pallavi G. Undre**, Prashant B. Kharat, R. V. Kathare, K. M. Jadhav, **Ferromagnetism in Cu²⁺ doped ZnO nanoparticles and their physical properties**, *Journal of Material Science: Material In Electronics*, 2019, Volume 30, Issue 4, pp 4014-4025 (I.F.2.77)
- **Pallavi G. Undre**, Jitendra S. Kounsalye, Prashant B. Kharat, R. V. Kathare, **Structural, Morphological and Infrared Characterizations of Copper doped Zinc Oxide Nanoparticles**, *Journal of Emerging Technologies and Innovative Research* 2018, Volume 5, Issue 9, (ISSN-2349-5162)(<http://doi.one/10.1729/Journal.18300>). (I.F. 5.87)
- **Pallavi G. Undre**, Shankar D. Birajdar, R. V. Kathare, K. M. Jadhav, **Structural, morphological and magnetic properties of pure and Ni-doped ZnO nanoparticles synthesized by sol-gel method**, *AIP conference proceeding*, 1953, 2018, 030195(DOI-10.1063/1.5032530).
- **Pallavi G. Undre**, Shankar D. Birajdar, R. V. Kathare, K. M. Jadhav, **Enhancement of Electrical Resistivity in Nickel Doped ZnO Nanoparticles**, *ScienceDirect Procedia Manufacturing*, 2018, Volume 20, 477-480.
- R. V. Kathare, **P. G. Undre**, **Role and Application of Nanotechnology for Energy Production**, *International Journal of Engineering Technology Science and Research*, 2016, Volume 3, Issue 3, (ISSN- 2394-3386).
- R. V Kathare, **P. G. Undre**, R. H. Kadam, **Effects of UV Radiation On Human Health**, *International journal of engineering research online*, 2016, Volume 4, Issue 1, (ISSN- 2321-7758).
- A. R. Chavan, M. V. Shisode, **P. G. Undre**, K. M, Jadhav, **Influence of Cr³⁺ Substitution on Structural, Morphological, Optical and Magnetic Properties of Nickel Ferrite Thin Films**, *Applied Physics A*, 2019, Volume-019, Issue-5, (<http://doi.org/10.1007/s00339-019-2768-5>) (I.F. 2.98)
- **Pallavi G. Undre**, Prashant B. Kharat, Jitendra S. Kounsalye , R. V. Kathare, **Structural, Morphological and Magnetic Properties of Cu²⁺ Doped ZnO Nanoparticles**, *IOP Publishing*, ([doi:10.1088/1742-6596/1644/1/012008](https://doi.org/10.1088/1742-6596/1644/1/012008)) **1644** (2020) 012008.
- **Pallavi G. Undre** · Ashok V. Humbe · Jitendra S. Kounsalye · Arun Kumar · R. V. Kathare · K. M. Jadhav, **Diamagnetic Al³⁺ Doped Ni–Zn Spinel Ferrite: Rietveld Refinement, Elastic, Magnetic,**

Mössbauer, and Electrical Explorations, *Journal of Inorganic and Organometallic Polymers and Materials*, (<https://doi.org/10.1007/s10904-023-02755-0>). (**I. F. 3.6**)

- **FUTURE SCOPE:**

ZnO thin films were also fabricated for the fast response photocurrent which is useful for optoelectronics device application. In future it may be interesting to improve the properties of ZnO via transition metal doping as per the requirement of spintronics, photocatalysis and solar cells application.

- **DECLARATION:**

I hereby declare that all the information furnished above is true to the best of my knowledge and belief.

Dr. Pallavi. G. Undre