






Curriculum vitae

CONTACT INFORMATION & PERSONAL DETAILS

Dr. Mehak Aggarwal

(UGC-JRF Qualified)

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 Home town: Bathinda, Punjab, 151001
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ACADEMIC CREDENTIALS

Course/ Degree	Institute/Board	Passing Year	Percentage/Achievements
Ph.D.	Punjab Engineering College(Deemed to be University), Chandigarh	2023	Couse work score : 9.3
UGC-NET-JRF	Physical Sciences	2019	AIR - 139
GATE	Physics	2018	Qualified
M.Sc. (Hons. School) Physics and Electronics	Punjab University, Chandigarh	2018	76.4 % (Second Position in University)
B.Sc. (Hons. School) Physics and Electronics	Punjab University, Chandigarh	2016	74.6% (Second Position in University)

Ph.D. Thesis title: “**Investigations on Structural, Dielectric and Pyroelectric properties of lead-free modified BaTiO₃ Ceramics**”

PUBLICATIONS:

1. **M. Aggarwal**, M. Kumar, R. Syal, V.P. Singh, A.K. Singh, S. Dhiman, S. Kumar, “Enhanced pyroelectric figure of merits in Sr and Zr co-doped porous BaTiO₃ ceramics”, **J. Mater. Sci. Mater. Electron.** 31 (2020) 2337–2346. (I. F. = 2.779)
2. **M. Aggarwal**, A.K. Singh, S. Dhiman, G. Sharma, O.P. Thakur, S. Kumar, “Microstructural

- tuning: A route towards realization of enhanced pyroelectric figure of merits of Sr and Zr doped barium titanate ceramics”, **Mater. Today Commun.** 31 (2022) 103302. (I.F. =3.662)
3. **M. Aggarwal**, A.K. Singh, G. Sharma, S. Dhiman, S. Kumar, “Key role of tetragonality in the enhancement of ferroic response of modified $\text{Ba}_{0.85}\text{Sr}_{0.15}\text{Zr}_{0.1}\text{Ti}_{0.9}\text{O}_3$ ”, **Mater. Chem. Phys.** 290 (2022) 126639. (I.F.=4.778)
 4. **M. Aggarwal**, A.K. Singh, G. Sharma, S. Dhiman, S. Kumar, “Modulation of polar dynamics with oxygen vacancies in Zn doped $\text{BaZr}_{0.1}\text{Ti}_{0.9}\text{O}_3$ ”, **J. Alloys Compd.** 927 (2022) 166957. (I. F. = 6.371)
 5. **M. Aggarwal**, R. Goel, A.K. Singh, G. Sharma, S. Dhiman, S. Kumar, “Thermal Probing of Constrained Hysteresis Loops of Binary Composites of $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ and $\text{Ba}_{0.85}\text{Sr}_{0.15}\text{Zr}_{0.1}\text{Ti}_{0.9}\text{O}_3$ ferroelectrics”, **Mater. Chem. Phys.** 310 (2023) 128503 (I.F. = 4.778)
 6. R. Goel, **M. Aggarwal**, P. Bansal, R. Kumar, S. Dhiman, A.K. Singh, S. Kumar, “Investigations on magnetoelectric response in binary ferroelectric $\{0.94\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3(\text{NBT})-0.06\text{Ba}_{0.85}\text{Sr}_{0.15}\text{Zr}_{0.1}\text{Ti}_{0.9}\text{O}_3(\text{BSZT})\}$ -ferrimagnetic (NiFe_2O_4) particulate composites”, **Appl. Phys. A** 128 (2022) 1–12. (I.F.=2.983)
 7. R. Goel, **M. Aggarwal**, R. Syal, G. Sharma, S. Dhiman, A. K. Singh, S. Kumar, “Observation of recoverable energy response in $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{--Ba}_{0.85}\text{Sr}_{0.15}\text{Zr}_{0.1}\text{Ti}_{0.9}\text{O}_3\text{--Ni}_{0.7}\text{Zn}_{0.3}\text{Fe}_2\text{O}_4$ lead-free composites for energy storage applications”, **J. Mater. Sci. Mater. Electron.** 34(2023) p.691. (I.F.= 2.779)
 8. **M. Aggarwal**, A.K. Singh, G. Sharma, S. Dhiman, S. Kumar, “Investigation of Structural, Pyroelectric and Energy Storage Properties of Lead-free $\text{Ba}_{0.85}\text{Sr}_{0.15}\text{Zr}_{0.09}\text{Sn}_{0.01}\text{Ti}_{0.9}\text{O}_3$ Ceramics”, (Communicated in IEEE International Future Energy Electronics Conference (IFEEEC))
 9. P. Agnihotri, R. Goel, **M. Aggarwal**, S. Kumar, B. Kumar Singh, “Influence of CoTiO_3 addition on the electrical properties of $\text{K}_{0.5}\text{Na}_{0.5}\text{NbO}_3$ lead-free ceramics system using Modulus and Impedance spectroscopy”. (Communicated in **Mater. Chem. Phys.**)
 10. K. Monga, **M. Aggarwal**, S. Chaudhary, “Improved methodology for the preparation of Zinc and [Zinc, Nickel]: co-doped SnO_2 nanoparticles via hydrothermal method for enhanced electrical, optical, and structural properties”. (Communicated in *Physica Scripta*).

CONFERENCES, WORKSHOPS AND SYMPOSIUMS ATTENDED OR ORGANIZED

- **Poster presentation** on “Pyroelectric properties of modified barium titanate ceramics” held by G.G.D.S.D. College sector-32, Chandigarh on 30th September 2022 and won the “*Best Poster Award*”.
- **Oral presentation** on “Investigations of structural, microstructural properties of modified barium titanate ceramics” at NCNIT-2022 organized by Department of Physics NIT, Kurukshetra from 9-10 July, 2022.

- **Oral Presentation** on “Investigations on structural, ferroelectric and piezoelectric properties Of PMN-PT ceramics”at International Conference On Emerging Trends In Science And Technology held by PEC, Chandigarh from 10-11 June 2022.
- **Organized** hands on program “Karyashala On Synthesis And Characterization Of Advanced Multifunctional Materials For Energy Harvesting Applications” held by PEC, Chandigarh from 16-22 January 2023
- **Participated** in “hands-on training on Sophisticated Analytical Instrumentation Facility (SAIF)” held by Panjab University, Chandigarh from 15-21 march 2023.
- **Participated** in “XRD for Research and Orthogonal Data Analysis Workshop”, Malvern Panalytical & IIT Jammu 6 - 7 July 2021
- **Participated** and **Organized** Short Term Course on “Novel Multifunctional Materials” held by PEC, Chandigarh from January 11-16, 2021
- **Participated** in online Workshop on “Rietveld Refinement Method” organized by UGC -DAE Consortium for Scientific Research, Mumbai Centre in association with Indore Centre held during 22 – 24 September, 2020.
- **Participated** and **Organized** Two Day Workshop on “Advanced Functional Materials” organized by held by PEC, Chandigarh from 25-26 July 2020.
- **Participated** in short term course on “Advanced Functional Materials” organized by Dr. B.R. Ambedkar National Institute of Technology, Jalandhar held from 30 December 2019 to 03 January 2020.
- **Participated** in two-day thematic Workshop on “Physics at low temperature and high magnetic field” at UGC-DAE, Consortium for Scientific Research, University Campus, Indore, Madhya Pradesh held on 29-30 May 2019.
- **Participated** and **Organized** in a One-Day National Seminar on “Recent Developments on Condensed Matter Physics” Punjab Engineering College (Deemed to be University), Chandigarh held on 16 November 2019.