

CV

ANUPAM MISHRA

PRESENT ADDRESS	PERMANENT ADDRESS
JE/173, Plot No 14/940/2,C/O Mr L.K.Mishra,Manab Seba Marg,Sarna Chowk, Jagda,Jhirpani,Rourkela-769042, Dist-Sundergarh,Odisha, India	JE/173, Plot No 14/940/2,C/O Mr L.K.Mishra,Manab Seba Marg,Sarna Chowk, Jagda,Jhirpani,Rourkela-769042, Dist-Sundergarh,Odisha, India

OBJECTIVE:

To work in a good research friendly environment where I can give my best and utilize my skills and knowledge for the benefit of the organization and society.

EDUCATIONAL QUALIFICATION:

Examination	School/College	Board/University	Year of passing	Percentage/CGPA
10 th	M.G.M. English School, Rourkela	I.C.S.E	2006	89.17
12 th	M.G.M. English School, Rourkela	I.S.C.	2008	91.00
B.Tech	National Institute of Technology,Rourkela	National Institute of Technology,Rourkela(Ceramic Engg)	2012	7.82/10
M.E	Indian Institute of Science,Bangalore	Indian Institute of Science,Bangalore(Materials Engg)	2014	5.9/8
PhD	Indian Institute of Science,Bangalore	Indian Institute of Science,Bangalore (Materials Engg)	2015-2021	6.5/8

Current position: Working as assistant professor in Ceramic Engineering department, NIT Rourkela since July 2024.

Work Experience: Worked as hardware systems engineer in KLA Tencor, Chennai from October 2021 to June 2024. Was engaged in development of high resolution scanning electron microscope.

Projects:

1. Undertook a project on “To develop abrasion resistant low cement castable for DRI applications” Guide: Mr Goutam Ghosh, Tata Refractories Limited, Belpahar.
2. Completed B.Tech project titled “Effect of different high alumina cements on the properties of self-flow castable with distribution coefficient coefficient 0.21” under the guidance of Prof Ritwik Sarkar, Department of Ceramic Engg, NIT Rourkela.
3. Completed ME project titled “Polycaprolactone/Organoclay nanocomposites: Mechanical, thermal, cytotoxicity and antimicrobial studies” under the guidance of Prof Kaushik Chatterjee, Department of Materials Engg, IISc Bangalore.
4. Completed PhD thesis titled ““Effect of off-stoichiometry, grain size and cationic doping on microstructure, global structure, electromechanical and energy storage properties of lead free $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ (NBT) based piezoceramics” under the guidance of Prof Rajeev Ranjan, Department of Materials Engg, IISc Bangalore.

Internships:

1. Underwent a vocational training at Tata Refractories Limited, Belpahar for 45 days duration from 3rd May 2010 to 26th June 2010.
2. Underwent a vocational training at Rourkela Steel Plant, Rourkela for 60 days duration from 9th May 2011 to 8th July 2011.

Research Interests:

Electroceramic materials, Refractories, Biomaterials.

Technical Skills:

Ceramic synthesis through solid state route, X-Ray Diffraction, Dielectric spectroscopy, Impedance spectroscopy, Ferroelectric and Piezoelectric Workstation, Scanning Electron Microscope, Optical Microscope, Solving crystal structure through Rietveld Refinement

Workshops and conferences attended

1. Attended International School on Fundamental Crystallography and Workshop on Structural Phase Transitions: A Satellite School of 24th IUCr Congress, 2017 in NIT Rourkela, Odisha, India.

2. Presented poster titled "Effect of off-stoichiometry on structural heterogeneity and piezoelectricity in lead-free $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-BaTiO}_3$ system" in Electronic Materials and Applications (EMA) 2019 organized at Orlando, Florida, USA.

3. Presented poster titled "Enhancement of piezoelectric response by tuning structural heterogeneity in $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ ceramics by varying A-site stoichiometry" in MRSI, 2019 held at IISc Bangalore, India.

Publications

1. Off-stoichiometry, structural-polar disorder and piezoelectricity enhancement in pre-MPB lead-free $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-BaTiO}_3$ piezoceramic. **A. Mishra**, D.K Khatua, A. De, and R. Ranjan, 2019. *Journal of Applied Physics*, 125(21), p.214101.

2. Structural mechanism behind piezoelectric enhancement in off-stoichiometric $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ based lead-free piezoceramics. **A. Mishra**, D.K. Khatua, A. De, B. Majumdar, T. Frömling, and R. Ranjan, 2019. *Acta Materialia*, 164, pp.761-775.

3. Finite-size-effect on a very large length scale in NBT-based lead-free piezoelectrics. **A. Mishra**, D.K. Khatua, G.D. Adhikary, N. Kumar, U. Shankar, and Ranjan, R., 2019. *Journal of Advanced Dielectrics*, 9(05), p.1950035.

4. A complex lead-free (Na, Bi, Ba)(Ti, Fe) O_3 single phase perovskite ceramic with a high energy-density and high discharge-efficiency for solid state capacitor applications. **A. Mishra**, B. Majumdar, and R. Ranjan, 2017. *Journal of the European Ceramic Society*, 37(6), pp.2379-2384.

5. Effect of sintering temperature on the structural disorder and its influence on electromechanical properties of the morphotropic phase boundary composition $0.94\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-}0.06\text{BaTiO}_3$ (NBT-6BT). **A. Mishra**, D.K. Khatua, G. D. Adhikary, N. Kumar, A. Upadhyay, B. Mahale, S. Saha, B. Majumdar, A. Senyshyn, and R. Ranjan. *Journal of Materials Science: Materials in Electronics* 32, no. 12 (2021): 16088-16103.

6. Effect of A-site off-stoichiometry on the microstructural, structural, and electromechanical properties of lead-free tetragonal $0.80\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-}0.20\text{BaTiO}_3$ (NBT-20BT) piezoceramic. **A. Mishra**, G. Abebe, G. Jafo, G. D. Adhikary, and A. De. *Journal of Materials Science: Materials in Electronics* 32, no. 9 (2021): 12578-12593.

7. Microstructural, structural, dielectric, piezoelectric and energy storage properties of 0.2 wt% MnO_2 doped $(0.94-x)\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-}0.06\text{BaTiO}_3\text{-}x\text{K}_{0.5}\text{Na}_{0.5}\text{NbO}_3$ ceramics ($0 \leq x \leq 0.08$). G. Abebe, G. Jafo, G. D. Adhikary, A. De, R. Ranjan, and **A. Mishra**. *SN Applied Sciences* 2, no. 12 (2020): 1-18.

8. Preponderant influence of disordered P4bm phase on the piezoelectricity of critical compositions of $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ -based ferroelectrics. G. D. Adhikary, D. Sharma, P. Punetha, G.

Jafo, G. Abebe, **A. Mishra**, A. Senyshyn, and R. Ranjan. *Physical Review B* 104, no. 18 (2021): 184102.

9. A combination of large unipolar electrostrain and d_{33} in a non-ergodic relaxor ferroelectric. A. Upadhyay, N. Kumar, G.D. Adhikary, R.P. Singh, **A. Mishra**, and R. Ranjan, *Journal of Applied Physics*, (2022). 132(20), 204102.

10. Optical temperature sensing by tuning photoluminescence in a wide (visible to near infrared) wavelength range in a Eu^{3+} -doped Bi-based relaxor ferroelectric. A. De, **A. Mishra**, D. K. Khatua, V. Dwij, V. Sathe, S. Jena, and R. Ranjan. *Optics Letters* 47, no. 3 (2022): 489-492.

11. Structural crossover from long period modulated to non-modulated cubic-like phase at cryogenic temperature in the morphotropic phase boundary of $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-BaTiO}_3$. D.K.Khatua, G.D. Adhikary, **A. Mishra**, N. Kumar, A. Senyshyn, S. K. Mishra, S. J. Kim, and R. Ranjan, 2020. *Journal of Applied Physics* 127(20), 204101.

12. A coupled microstructural-structural mechanism governing thermal depolarization delay in $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ -based piezoelectrics. D.K. Khatua, **A. Mishra**, N. Kumar, G.D. Adhikary, U. Shankar, B. Majumdar, and R. Ranjan, 2019. *Acta Materialia*, 179, pp.49-60.

13. Enhanced thermal stability of dielectric, energy storage, and discharge efficiency in a structurally frustrated piezoelectric system: Erbium modified $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-BaTiO}_3$. D.K. Khatua, A. Agarwal, **A. Mishra**, G. Das Adhikary, A. Senyshyn, and R. Ranjan, 2018. *Journal of Applied Physics*, 124(10), p.104101.

14. Electromechanical Properties and Electric Field Induced Strain of BNT-BT Piezoceramic Material at the MPB Region. S. Chatterjee, G. Agrawal, **A. Mishra**, and S. Anwar, 2018. *Materials Today: Proceedings*, 5(11), pp.24880-24886.

15. Electric field induced strain, switching and energy storage behaviour of lead free Barium Zirconium Titanate ceramic. T. Badapanda, S. Chatterjee, **A. Mishra**, R. Ranjan, and S. Anwar, 2017. *Physica B: Condensed Matter*, 521, pp.264-269.

16. Anomalous influence of grain size on the global structure, ferroelectric and piezoelectric response of $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$. D.K. Khatua, T. Mehrotra, **A. Mishra**, B. Majumdar, A. Senyshyn, and R. Ranjan, 2017. *Acta Materialia*, 134, pp.177-187.

17. Structural perspective on the anomalous weak-field piezoelectric response at the polymorphic phase boundaries of $(\text{Ba}, \text{Ca})(\text{Ti}, \text{M})\text{O}_3$ lead-free piezoelectrics (M= Zr, Sn, Hf). M. Abebe, K. Brajesh, **A. Mishra**, A. Senyshyn, and R. Ranjan, 2017. *Physical Review B*, 96(1), p.014113.

18. Increasing intervention of nonferroelectric distortion and weakening of ferroelectricity at the morphotropic phase boundary in $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3\text{-BaTiO}_3$. G.D. Adhikary, D.K. Khatua, **A.**

Mishra, A. De, N. Kumar, S. Saha, U. Shankar, A. Senyshyn, B.N. Rao, and R. Ranjan, 2019. *Physical Review B*, 100(13), p.134111.

19. Factors contributing to the local polar-structural heterogeneity and ultrahigh piezoelectricity in Sm-modified $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3\text{-PbTiO}_3$. N. Kumar, **A. Mishra**, A.De, U. Shankar, and R. Ranjan, 2020. *Journal of Physics D: Applied Physics*.

20. Enzymatically degradable and flexible bio-nanocomposites derived from PHBV and PBAT blend: assessing thermal, morphological, mechanical, and biodegradation properties. S.P. Pawar, **A. Misra**, S. Bose, K. Chatterjee, and V. Mittal, 2015. *Colloid and Polymer Science*, 293(10), pp.2921-2930.

21. Enzymatically degradable EMI shielding materials derived from PCL based nanocomposites. S.P. Pawar, S. Kumar, **A. Misra**, S. Deshmukh, K. Chatterjee, and S. Bose, 2015. *RSC Advances*, 5(23), pp.17716-17725.

22. Effect of organically modified clay on mechanical properties, cytotoxicity and bactericidal properties of poly (ϵ -caprolactone) nanocomposites. S. Kumar, **A. Mishra**, and K. Chatterjee, 2014. *Materials Research Express*, 1(4), p.045302.

23. Compositional induced structural phase transitions in $(1-x)(\text{K}_{0.5}\text{Na}_{0.5})\text{NbO}_{3-x}(\text{Ba}_{0.5}\text{Sr}_{0.5})\text{TiO}_3$ ferroelectric solid solutions. S. Sahoo, D.K. Pradhan, S. Kumari, K.S. Samantaray, C. Singh, **A. Mishra**, M.M. Rahaman, B. Behera, A. Kumar, R. Thomas, P.D. Rack. *Scientific Reports*. 2023 Nov 4;13(1):19096.

24. Structural heterogeneity induced enhancement of physical properties in Sm-modified $\text{K}_{0.5}\text{Na}_{0.5}\text{NbO}_3$. S. Sahoo, D.K. Pradhan, S. Kumari, K.S. Samantaray, C. Singh, **A. Mishra**, M.M. Rahaman, B. Behera, A. Kumar, R. Thomas, P.D. Rack *Journal of the American Ceramic Society*. 2023 Dec 12.

ACHIEVEMENTS:

1. Bagged the best poster award in MRSI, Feb 2019 conference organized at IISc Bangalore.
2. Was awarded the Young Scientist Travel Grant for presenting poster in Electronic Materials and Applications (EMA), Jan 2019 conference organized at Orlando, Florida, USA in the year.
3. Secured AIR of 49 in GATE 2012.
4. Secured a valid GATE score of 644 and AIR 54 from GATE 2014.
5. Secured position in extended merit list of IIT-JEE 2008.
6. Secured AIR of 22145 and state rank of 326 in AIEEE 2008.
7. Secured state rank of 337 in Odisha JEE 2008.

Extra-Curricular Activities:

1. Volunteer of Leo Club, NIT Rourkela and worked as the incharge of Scholarship Scheme Project.
2. Volunteer of Nation First Initiative in IISc Bangalore and played a active role in organizing voter registration drive in the campus during General Elections 2014 and 2019.

HOBBIES AND INTERESTS

Learning more about Indian Geography and History, following politics, playing cricket.

LANGUAGES KNOWN: English, Hindi and Odia

PERSONAL DETAILS:

Name: Anupam Mishra

Date of Birth: 02.09.1990

Mother's name: Mrs. Kasturi Mishra

Father's name: Mr. Laxmikanta Mishra

Religion: Hindu

Nationality: Indian

REFERENCES:

1. Professor Rajeev Ranjan

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2. Professor Satyam Suwas

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3. Prof Kaushik Chatterjee

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Indian Institute of Science, Bangalore
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DECLARATION:

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

Place: Rourkela

ANUPAM MISHRA

Date: 24/09/24