भारत सरकार /Government of India
परमाणु ऊर्जा विभाग / Department of Atomic Energy
होमी भाभा राष्ट्रीय संस्थान / Homi Bhabha National Institute
राजा रामन्ना प्रगत प्रौद्योगिकी केन्द्र
Raja Ramanna Centre for Advanced Technology

HBNI Faculty Profile

Name	Srinibas Satapathy	
Designation	Associate Professor	
Research Area	Functional materials for biomedical, sensor, memory and energy harvesting applications	
Research Profile	Dr. Srinibas Satapathy received his master degree in Physics from Utkal University, Odisha in 1995. He did his M. Tech (1999) and Ph. D. (2009) from IIT, Kharagpur and IISc, Bangalore respectively. He joined RRCAT, Indore as SO/C in 1999 through RRCAT Training School (CAT-1-OCEP). Since then, he has been working on different projects of RRCAT. He worked extensively on photonic nano materials for different luminescence and up conversion applications. Our group developed transparent ceramics for beam visualizer application (UV as well as IR), which is first time in India. Our group also developed polymer-based laser energy and power meters which removed all drawbacks of single crystal-based devices. Single phase and composite multiferroics, spintronics, nano magnetism and spin-phonon coupling are the active research areas of our group. Work on magnetoelectric composite materials for memory, ac magnetic field sensor, magnetic noise harvester and solar energy harvesters are highly recognized. Now our group is working on functional materials for biological use like; magnetic particles for hyperthermia, herbal based nano core-shell for antibacterial growth, luminescent nano particles for bioimaging and targeted drug delivery etc. He guided 30 project trainees and 6 Ph. D. students. He has 82 international journal and 40 conference publications to his credit.	

Ten Selected Recent Publications

1.	Sonali Pradhan, Pratik Pratap Deshmukh, Rahul C Kambale, Tulshidas C Darvade, S. Satapathy, Shovan K Majumder "Effect of nano-size on magnetostriction of $BiFeO_3$ and exceptional magnetoelectric coupling properties of $BiFeO_3$_P (VDF-TrFE) polymer composite films for magnetic field sensor application" Smart Materials and Structures, 32 (2023) 045017.
2.	Bhumika Sharma, Pratik Deshmukh, S. Satapathy, S. K. Majumder "Infrared to visible conversion in strontium sulphate through defect-based IR stimulated visible emission phenomenon" Luminescence, 38 (2023) 410-420.
3.	Sougata Koner, Pratik Deshmukh, Anju Ahlawat, Rashmi Singh, S. K. Majumder and S. Satapathy, "Effect of interface coupling between polarization and magnetization in La0.7Pb0.3MnO3 (LPMO)/P(VDF-TrFE) flexible nanocomposite films" Journal of Materials Science, 57 (2022) 7621-7641.
4.	Anju Ahlawat, Azam Ali khan, Pratik Deshmukh, Sushmita Bhartiya, S. Satapathy, Mandar M Shirolkar, Haiqian Wang and R. J. Choudhary," Strain assisted magnetoelectric coupling in ordered nano magnets of $CoFe_2O_4$/$SrRuO_3$/ $(Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3)$, J. Phys.: Condens Matter, 34 (2022) 305801.
5.	Anju Ahlawat, Robert Roth, Diana Rata, Kathrin Dorr, Azam Ali Khan, Pratik Deshmukh, Mandar M. Shirolkar, S. Satapathy, Ramjanay Choudhary and D. M. Phase, "Magneto-electric coupled ordered PMN-PT/NiFe2O4 composite nanostructures" Applied Physics Letter, 119 (15) (2021) 112902.
6.	Anju Ahlawat, Azam Ali Khan, Pratik Deshmukh, Mandar M. Shirolkar, S. Satapathy and Ramjanay Choudhary, "Effect of field-controlled magnetization in NiFe2O4/SrRuO3/PMN-PT heterostructures for Non-volatile Memory applications: XMCD study" Applied Physics Letter, 119 (11) (2021) 112902.
7.	A. A. Khan, A. Ahlawat, P. Deshmukh, M. N. Singh, A. Sagdeo, V. G. Sathe, A. K. Karnal and S. Satapathy, "Magneto-structural correlation across the spin reorientation transition temperature in pure and Sm substituted $TmFeO_3$: A temperature dependent Raman and Synchrotron X-ray diffraction Study", Journal of Alloys and Compounds, 885 (2021) 160985.
8.	Sonali Pradhan, P. Deshmukh, A. A. Khan, A. Ahlawat, S. K. Rai and S. Satapathy, " Magnetic field induced ferroelectric polarization voltage in compositional dependent (0-3) NFO/P(VDF-TrFE) nanocomposite film", Smart materials and Structures, 30 (2021) 075034.
9.	S. Koner, P. Deshmukh, A. Ahlawat, A. K. Karnal and S. Satapathy, "Studies on structural, dielectric, impedance spectroscopy and magneto-dielectric properties of $La0.7Ba0.3MnO_3$/P(VDF-TrFE) multiferroic (0-3) nano composite films", Journal of Alloys and Compounds, 868 (2021) 159104.

10.	Pratik Deshmukh, Ranvir Kumar Deo, Anju Ahlawat, Azam Ali Khan, Rashmi Singh, A. K. Karnal, S. Satapathy, "Spectroscopic investigation of upconversion and downshifting properties LaF_3: Tb^{3+},Yb^{3+}: A dual mode green emitter nanophosphor", Journal of Alloys and Compounds, 859 (2021) 157857.