



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	<i>Dr. Archana Sagdeo</i>	
Designation	<i>Assistant Professor</i>	
Research Area	<i>Exploring Perovskites that includes dielectric, ferroelectric and multiferroic materials, Perovskite solar cell materials, Synchrotron Radiation based x-ray diffraction.</i>	
Research Profile	<i>Structure-property relationship in Perovskite oxides including perovskite solar cell using various Synchrotron based x-ray scattering techniques. Research interest includes: a) Structure property relationship in highly correlated electron systems and transition metal oxides, b) Dielectric/ferroelectric, solar cell and super-capacitor materials, c) Surface interface physics and physics of magnetic coupling in multilayer systems and d) Electron transport in quasicrystal and aperiodic system.</i>	
Ten Selected Recent Publications		
1.	<i>"Absence of presumed ferroelectricity in methylammonium lead chloride single crystals representing organic-inorganic hybrid perovskites", Materials Chemistry and Physics 295, 127169 (2023).</i>	
2.	<i>"Possibility of relaxor-type ferroelectricity in delafossite CuCrO₂ near room temperature" Solid State Sciences, 112, 106509 (2021).</i>	
3.	<i>"Distorted Octahedra Induced Anisotropic Strain and Local Disorder in Delafossite CuCrO₂", Solid State Sciences 117, 106602 (2021).</i>	
4.	<i>"Effect of DC Bias on Dielectric Properties of NdFeO₃" ECS J. Solid State Sci. Technol. 10, 073005 (2021).</i>	
5.	<i>"Colossal dielectric permittivity and mechanism of AC conduction in bulk delafossite CuFeO₂" J. Appl. Phys., 125, 164101 (2019)</i>	
6.	<i>"Disappearance of dielectric anomaly in spite of presence of structural phase transition in reduced BaTiO₃: Effect of defect states within the bandgap". J. Appl.</i>	



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	<i>Phys. 123, 161424 (2018).</i>
7.	<i>“Large dielectric permittivity and possible correlation between magnetic and dielectric properties in bulk BaFeO_{3-δ}”, Applied Physics Letters 105 (4), 042906 (2014)</i>
8.	<i>Correlation of microstructural and physical properties in bulk BiFeO₃ prepared by rapid liquid-phase sintering, Solid State Sciences 18, 1 (2013)</i>
9.	<i>“Diffuse Reflectance Spectroscopy: An Effective Tool to Probe the Defect States in Wide Band gap Semiconducting Materials”, Materials Science in Semiconductor Processing 86 (2018) 151</i>
10.	<i>“Electronic and optical properties of BaTiO₃ across phase transition: An experimental and theoretical investigation”, J. Appl. Phys. 122, 065105 (2017)</i>