

# JAPES BERA



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## Assistant Professor in Ceramic Engineering

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BSc Chemistry, Calcutta University, 1983

BTech, Ceramic Engineering, Calcutta University, 1986

PhD Technology, Calcutta University, 1996

## RESEARCH INTERESTS

**Soft Ferrites:** NiCuZn based varieties of soft ferrite are being synthesized through sol-gel combustion. The material and its electromagnetic properties are being investigated by a range of techniques such as XRD, SEM-EDXS, Impedance spectroscopy, MH Hysteresis tracing etc. Areas of application involve multilayer inductor.

**Relaxor Ferroelectrics:** New type of lead-free relaxor based on BaTiO<sub>3</sub>-BaZrO<sub>3</sub>-SrTiO<sub>3</sub> ceramics is being synthesized. This is either via solid oxide reaction or modified chemical route. The material is useful for multilayer ceramic capacitor, random access memory applications. Dielectric and relaxor properties of the material are being studied.

**Magnetic Bioceramics:** Nano-size ferrite powders for magnetic induction hyperthermia have been synthesized. Its bio-compatibility and heating properties by applying AC magnetic field are now under investigation.

## SELECTED PUBLICATIONS

P.K. Roy, J. Bera, Electromagnetic properties of samarium-substituted NiCuZn ferrite prepared by auto-combustion method, *Journal of Magnetism and Magnetic Materials*, Volume 321, Issue 4, February 2009, Pages 247-251

P.K. Roy, J. Bera, Enhancement of the magnetic properties of Ni-Cu-Zn ferrites with the substitution of a small fraction of lanthanum for iron, *Materials Research Bulletin*, 42 (1) (2007) 77-83

J. Bera, S.K. Rout, Synthesis of (Ba<sub>1-x</sub>Sr<sub>x</sub>)(Ti<sub>0.5</sub>Zr<sub>0.5</sub>)O<sub>3</sub> ceramics and effect of Sr content on room temperature dielectric properties, *Journal of Electroceramics*, (2007) 18:33-37

A. Chakrabarti, J. Bera, T.P. Sinha, Dielectric properties of BaBi<sub>4</sub>Ti<sub>4</sub>O<sub>15</sub> ceramics produced by cost-effective chemical method, *Physica B: Physics of Condensed Matter*, Volume 404, Issues 8-11, 1 May 2009, Pages 1498-150

