National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Nanocrystalline Hydroxyapatite/HAP for biomedical application
Speaker	: A P Kajal Parida
Supervisor	: Prof Pawan Kumar
Venue	: Committe Room
Date and Time	: 01 Mar 2024 (2:00 PM)
Abstract	: Hydroxyapatite/HAP ($Ca_{10}(PO_4)_6(OH)_2$) is the most stable calcium phosphate ceramic at ambient temperature. In this study, a high-energy planetary ball milling/Mechanochemical technique was used to produce nano HAP powder, as confirmed by the particle size analysis. Field Emission Microscope (FESEM), Energy Dispersive X-ray analysis (EDX), X-ray diffraction (XRD), and Fourier Transform Infrared Spectroscopy (FTIR), LCR meter were used for the characterization of surface morphology, elemental analysis, phase conformation, and electrical properties. The average particle size was found to be in the range of 65nm to 109.8nm. Pure phase of HAP was obtained at 800oC followed by 600oC for 4 h. Surface charge of HAP is another important parameter that assists bone cell growth. So, the electric properties are needed to be studied to understand the cellular behavior on bone. Microstructure and densification of sintered samples play a vital role in determining the dielectric constant of the system.