Solid – state NMR spectroscopy of bones and cartilage

A Talk by

Prof. Neeraj Sinha

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About the Speaker

Dr. Neeraj Sinha is a Professor and Dean at Centre of Biomedical Research (CBMR), SGPGIMS Campus, Raebareli Road, Lucknow, INDIA. His research group primarily focuses on methodology development and application of NMR spectroscopy to understand the intricate biological system and different inherent biological process governing human health. The system of research interest are Acute Respiratory Distress Syndrome (ARDS), Chronic Kidney Disease (CKD) and Osteoporosis.

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Talk Abstract

The recent developments in the solid – state nuclear magnetic resonance (ssNMR) spectroscopy technique have allowed to probe structural details of biological systems which are not amenable to other spectroscopic methods. Examples of those systems are micro – crystalline proteins, membrane proteins, bones and cartilage extracellular matrix (ECM). Bones are dynamic composite biomaterials consisting of inorganic minerals, organic proteins (mainly collagen), lipids and water molecules. The intricate interactions among different components are responsible for its unique mechanical properties such as load bearing, crack propagations and flexibility. Our laboratory has developed various ssNMR based methods to probe such interactions in its native state. Introduction to the ssNMR spectroscopy, its diverse applications along with experimental results and its consequences in terms of bone biology will be presented in the talk.

Hosted By

Prof. Kavita Dorai, Dept. of Physical Sciences & Convener NMR Facility, IISER Mohali

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