
Departmental Seminar

Seminar Title	: Exploiting the Translation Potential of Bone Regenerative Biology
Speaker	: Dr. Mamoni Dash, Scientist C, Institute Of Life Sciences, Bhubaneswar
Supervisor	: Dr. Nivedita Patra, Dr. Mirza Khalid Baig
Venue	: BM Department Seminar Room
Date and Time	: 27 Feb 2025 (04:00 PM)
Abstract	: Bone fractures, aging, illness, and trauma often lead to non-union bone defects. When these defects result in a gap greater than 3 cm, they are classified as critical-sized defects. Treating these defects poses a significant medical and socioeconomic challenge, affecting about one million cases annually that require bone graft procedures to address skeletal issues. Despite advances in medicine, the gold standard for treating these defects remains autologous bone transplantation. However, this method comes with unwanted surgical side effects and complications at the harvest site, including pain, infection, scarring, hypersensitivity, and instability. Another common treatment option involves bone screws made from metals and ceramics. Unfortunately, these materials often fail due to discrepancies in their properties compared to natural mineralized tissues. Metals are frequently used to treat bone defects due to their high strength, ductility, and wear resistance. However, they can present problems such as low biocompatibility, corrosion, excessive stiffness compared to natural tissue, high density, and the potential release of metal ions, which may trigger allergic reactions in surrounding tissues. In this context, polymer-based materials are emerging as a sustainable solution for bone repair through guided tissue regeneration. The Therapeutic Biomaterials group at ILS is focused on developing bioactive materials for guided bone tissue regeneration. During the talk, various findings from the group concerning the development of these bioactive components and their translational applications will be discussed. Keywords: Bone Regenerative Biology, Regenerative Medicine, Tissue Engineering, ALL ARE CORDIALLY INVITED