



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Condensed Matter Physics and Material Sciences

06th December'2021

4.00PM

FERMION

SPEAKER

**Dr. Goutam Sheet,
Associate Professor, IISER, Mohali**

TITLE OF THE TALK

**Transport through superconducting interfaces:
From metallic to tunnelling regime**

ABSTRACT

I will first review the transport characteristics of superconducting meso-junctions in different regimes of transport. I will discuss how such transport properties in different regimes can be used as powerful spectroscopic probes to extract Fermi surface properties of complex quantum materials. While such techniques are extremely powerful, there are potential pitfalls stemming from inelastic scattering processes that often give rise to misleading results in transport spectroscopic measurements in the metallic regime involving superconductors. I will also present how such situations can be avoided and how they can be exploited to detect superconductivity emerging at confined dimensions.

HOST FACULTY

Dr. Atindra Nath Pal

Assistant Professor , CONDENSED MATTER PHYSICS AND MATERIAL SCIENCES
