

## **Colloquium**

### **Solid state phenomenon with excited nuclei -- Applications to nano-materials**

**S.N. Mishra**

**TIFR, Mumbai**

Solids in nature are a wonder house for physics as they exhibit varieties of interesting phenomenon – structural, electronic, magnetic etc. Probing these phenomenon at short length and time scales has been a challenge as it promises new insights not accessible through macroscopic investigations. Excited nuclear states with short lived, nano second life time (isomers) through hyperfine interactions serve as powerful microscope for studying material properties at small length and time scales. In this talk I shall try to give an overview on the application of high spin nuclear isomers to problems in condensed matter physics, with an emphasis on magnetism in nano-materials giving illustrative examples from our experiments carried out at the Pelletron accelerator at TIFR.

***Tuesday, Nov 13<sup>th</sup> 2018***

***4:00 PM (Tea/Coffee at 3:30 PM)***

***Auditorium, TIFR-H***