Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Colloquium

Seeing magnetic fields and electric currents using light

Satyajit Banerjee

IIT-K, Kanpur

In this talk I will discuss the magneto-optical imaging (MOI) technique which offers a way to image and quantitatively measure the behavior of local magnetic field distribution across any non-volatile sample. The technique allows one to image with high signal to noise ratio, changes in local magnetic field down to 0.001 milli-Tesla. The sensitive technique offers high spatio-temporal imaging capability for exploring static and dynamic behavior of local magnetic state in a material. At IITK we have been working on enhancing the sensitivity of this technique and I will share with you some of these developments. I will present a recent example from our lab, on using this technique to unravel a competition between magnetism and superconductivity above the superconducting critical transition temperature in Pnictides class of material, and if time permits some other examples. Apart from this I will discuss our recent attempts to use this technique to image electric current distributions inside different materials.

Wednesday, Mar 14th 2018

04:00 PM (Tea/Coffee at 03:30 PM)

Auditorium, TIFR-H