**S.N. Bose National Centre for Basic Sciences**
Block JD, Sector III, Salt Lake, Kolkata 700098

# TPSC Seminar Announcement

## Topic:

# *Micro-Extensional Rheometer*

## Speaker:

**Dr. Chirag Kalelkar**

*Assistant Professor*
*Department of Mechanical Engineering,*
*Indian Institute of Technology, Kharagpur, West Bengal, India.*

## Abstract:

*We discuss the design, instrumentation and calibration of a versatile force transducer with feedback control called the Micro-Extensional Rheometer invented by the author, in collaboration with Prof. Pramod Pullarkat and Mr. Seshagiri Rao (Raman Research Institute, Bangalore), and Dr. Ashish Lele (National Chemical Laboratory, Pune). The device permits a force range of eight decades (1-10^8 pN) and a sample extension range of four decades (10-10^5 nm) with a resolution of the order of tens of nanometers. A feedback-loop algorithm is used to control the commanded force or the extensional strain on the sample and implement different rheometric test protocols. The device may also be used to measure the forces exerted within bacterial suspensions, pulling neurons, etc. [Patent pending:0086DEL2013]*

## Venue, Date & Time:

*Fermion on 06 September 2013 (Friday) at 3:00 PM*

*All are Welcome! Tea / Coffee at 4:00 PM !!*

*S. Mukherjee*
*TPSC Convener*