

## **Seminar**

### **Mechanical damping in Ultrathin membranes**

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Thin mechanical membranes are exceptional sensors of force and mass, if we can achieve high quality factors or low mechanical damping. However, due to the damping associated with atoms at the surface, achieving high quality factors ( $Q$ ) in these ultrathin membranes has been a challenge. In this talk, I will discuss various methods to actuate, detect mechanical motion and damping ( $Q^{-1}$ ) in ultrathin SiN and graphene based membranes. I will discuss the factors that contribute to mechanical damping and how the  $Q$  of these structures can be significantly improved. Then, I will discuss the detection of thermal motion of graphene using various optical detection schemes and means to enhance or suppress it using optics.

***Thursday, May 16<sup>th</sup> 2024***

***16:00 Hrs (Tea / Coffee 15:45 Hrs)***

***Seminar Hall, TIFR-H***