



**TIFR Centre for Interdisciplinary Sciences,  
Narsingi, Hyderabad 500075**

---

## **Seminar**

**Phagocytosis dynamics depends on target shape**

**Debjani Paul**

**IIT Bombay**

A complete understanding of phagocytosis requires insight into both its biochemical and physical aspects. One of the ways to explore the physical mechanism of phagocytosis is to probe whether and how the target properties (e.g., size, shape, surface states, stiffness etc.) affect their uptake. I will describe an imaging-based method to explore phagocytosis kinetics that is compatible with real-time imaging. We measured single-event engulfment time from a large number of phagocytosis events to compare how size and shape of targets determine their engulfment. We found an increase in the average engulfment time for increased target size, for spherical particles. On the other hand, experiments with non-spherical particles confirmed that target shape plays a more dominant role than target size for phagocytosis. I will also discuss our attempts to study the dynamics of host-pathogen interactions, namely, *S. Typhimurium* invasion of macrophages.

***Thursday, Feb 27<sup>th</sup> 2014***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Seminar Hall, TCIS***