

ICTS Biophysics Seminar

- Title** : Reconstitution of actin cytoskeletal dynamics and functions in cell-sized confinement
- Speaker** : Makito Miyazaki (RIKEN Center for Biosystems Dynamics Research (BDR), Japan)
- Date** : Tuesday, 09th July 2024
- Time** : 2:00 PM (IST)
- Abstract** : The actin cytoskeleton regulates various key functions of the cell, including division, motility, and polarity establishment. Ultrastructural and molecular biological studies have revealed the nanoscale structures, molecular components, and signaling cascades regulating the actin cytoskeleton step by step. However, it remains unclear how nanometer-sized molecules are self-organized into cell-scale structures and how they cooperate to drive cell functions. To understand the underlying physical principles that govern the cytoskeletal assembly and cell morphogenesis, we employed an in vitro reconstitution approach. We established a method to encapsulate purified proteins or the cytoplasmic extracts of living cells into cell-sized capsules. Using this minimal model of the cell, we are seeking biochemical and physical conditions under which structures and functions recapitulating living cells are self-organized. In this seminar, I will present our recent efforts in understanding the regulatory mechanisms of cell division machinery and motility.
- Venue** : Emmy Noether Seminar Room
- Zoom Link: <https://icts-res-in.zoom.us/j/93991375680?pwd=7psfeDmaXM2J9LLUZYb2MxqDLYcSq6.1>
Meeting ID: 939 9137 5680
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