

ICTS Colloquium

- Title : Mechanical responses of living cells
- Speaker : Pramod Pullarkat, Raman Research Institute, Bangalore
- Date : Monday, November 26, 2018
- Time : 3:00 PM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore
- Abstract : Cell shape and function are closely related. For example, mammalian red blood cells maintain a biconcave shape which allows them to squeeze through narrow capillaries and nerve cells generate tubular extensions (axons) in order to span long distances. Often cells regulate their shape dynamically, like in the case of an amoeba. Cells also exhibit locomotion, and can generate contractile forces like in the muscle. How do cells regulate their shape and dynamics? These are controlled primarily by the mechanical properties of plasma membrane that encloses the cell and a bio-polymer mesh that fills the interior. The bio-polymer network has the remarkable ability to generate "active" stresses and flows using polymerisation dynamics and due to the action of molecular motor proteins. This talk will cover the physics behind some of these mechanisms with some specific examples.