

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A&B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032, India

Seminar Notice

Topic: Spatiotemporal control of the number and diversity of centrosome-cilia

Speaker: Dr. Swadhin Chandra Jana, Principal Investigator, FCT Project Grant at Instituto Gulbenkian de Ciência (Gulbenkian Institute), Portugal

Venue: C.V. Raman Hall

Date and Time: 06.09.2018 at 4-30 PM

Abstract:

In eukaryotic cycling cells, two centrioles, the microtubule (MT)-based nano cylinders, with the peri-centriolar matrix (PCM) form a centrosome. The centriole biogenesis generally occurs once per cell cycle to tightly regulate its number. After cells exit cell cycle, these nano-cylinders can template the skeleton of cilia, also called sensing hairs of cells. These nanomachines (centrosome and cilia) have critical sensing, motility and cytoskeleton-organising functions. Thus, the alteration/deregulation of these nanomachines causes several human diseases, such as cancer (occurs in 1 in 3 individuals worldwide) and ciliopathies (frequency is 1:1000 people in Caucasians). Strikingly, in the later diseases, the mutations affect either all tissues or a specific tissue (e.g., retinal degeneration, renal disease and infertility) at various ages of our life, often showing defects similar to ageing-associated pathologies. I will talk about the new mechanisms on how the number and diversity of centrosome-cilia are regulated in time and space in animal cells, including the fruit fly. Subsequently, I will discuss to highlight how these findings would immensely help not only better understand these organelles' evolution and biology, but also the associated-human disorders, such as cancer and ciliopathy.

All are cordially invited to attend the seminar