



Centre for Biosystems Science and Engineering Seminar

Artificial nano swimmers: Towards applications in biotechnology

4:00 PM, 13th June 2016,
Seminar Hall, MRDG, Biological Sciences Building.

Dr. Ambarish Ghosh,
CeNSE, Indian Institute of Science.

The idea of tiny vessels roaming around in human blood vessels working as surgical nano robots was first proposed by Richard Feynman, a vision that has triggered imagination in scientists and non-scientists alike. With current advances in nanotechnology, there have been several strategies to realise this dream of a “nanovoyager”, aiming to manoeuvre artificial nano-structures in biological media for diagnostic and therapeutic applications. The speaker will describe a system of multifunctional nano swimmers developed by his group that can be controlled with micron level precision in fluidic environments, including undiluted human blood. These objects can be used to probe mechanical properties of biological media and can also aid in optical sensing applications.

About the speaker

Dr. Ambarish Ghosh received his undergraduate degree in Physics from the Indian Institute of Technology, Kharagpur, India. Subsequently, he completed his PhD in Physics from Brown University in 2004, and worked at Harvard University from 2005-2009 as a postdoctoral fellow. In 2009, he joined Indian Institute of Science as an Assistant Professor, where he is currently a faculty member at the Centre for Nano Science and Engineering, and associate faculty at the Departments of Physics and Electrical and Communication Engineering. His research interests include the study of quantum fluids, plasmonics, driven colloidal particles and their applications in biotechnology.