



Centre for Biosystems Science and Engineering Seminar

Navigable magnetically actuated smart textured fibrous system for Cancer treatment

4 PM, 20th June 2016,
Seminar Hall, MRDG, Biological Sciences Building.

Dr. Shilpee Jain

Center for Bio Systems Science and Engineering,
IISc.

Thermal therapy combined with chemotherapy is one of the advanced and efficient methods to treat cancer. The speaker will describe how magnetically actuated smart textured (MAST) fibrous systems can be fabricated and used in cancer treatment with synergistic effect of thermal and chemo therapy. These MAST fibrous systems contain carbogenic quantum dots (CNDs) as a tracking agent and doxorubicin hydrochloride (DOX) anticancer drug. The talk will detail how MAST fibrous systems were able to deliver anticancer drug as well as heat simultaneously to kill HeLa cells in a 10 minutes period *in vitro*. It will also be shown how MAST fibrous system can be a building block to design medical micro robots and it is envisioned that medical micro robots have the potential to perform tasks that are currently impossible or difficult to achieve otherwise.

About the speaker

Dr. Shilpee Jain is an INSPIRE faculty fellow in the Centre for Biosystems Science and Engineering, Indian Institute of Science. She has done M.Sc in Physics from Jiwaji University, Gwalior and M. Tech. from Indian Institute of Technology, BHU. She received her PhD from the Indian Institute of Technology, Kanpur in 2013. Her research interests include magnetic materials based devices for biomedical applications, nerve stimulation, tissue engineering as well as carbon nano materials.