Indian Institute of Science
Centre for BioSystems Science and Engineering
BSSE Seminar

25th March 2019, 4:00 PM, MRDG Seminar Hall, 1st floor,
Biological Sciences Building

Engineering Materials for Biomedical Applications

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ABOUT THE SPEAKER:

Dr. Kaushik Chatterjee received his Ph.D. from Pennsylvania State University and was a postdoctoral fellow working jointly at the National Institute of Standards and Technology and the National Institutes of Health in USA. He joined the Indian Institute of Science, Bangalore in 2011 where he is currently an Associate Professor in the Department of Materials Engineering and associated with the Centre for Biosystems Science and Engineering.

ABSTRACT

The ever-growing demand for better healthcare has spurred the need for engineering advanced materials to address various clinical challenges. We work on engineering materials that can find use in biomedical devices and as scaffolds for tissue regeneration. One of our major focus areas has been materials for orthopedics. We have developed several nanoscale surface engineering techniques to improve the performance of titanium and its alloys for use in orthopedic devices. We also aim to prepare scaffolds for bone tissue engineering wherein we are exploring the use of nanoparticles for improving the bioactivity of polymers. Lastly, we also use biomaterials to prepare in vitro disease models that can overcome the limitations of the conventional petridish specifically to study breast cancer and cardiac hypertrophy. Taken together, we have developed several strategies to prepare and process materials to impart unique functionality for a variety of biomedical applications.