**Engineering Manganite Nanostructures Based Architectures**

by Dr. Sangeeta Narendra Kale

**Date:** 4th July 2007 (Wednesday)
**Time:** 11:00am to 12:00 pm
**Venue:** EA-06-07 (Seminar room)

**Abstract**

The talk will focus on recent work done in our laboratory on the synthesis of magnetic nanostructures tailored for various applications. We have been working on synthesis of manganite and oxide-semiconductor systems in their nano-regime using different methodologies such as citrate-gel route, surfactant-immobilization technique and self-assembly route. Pulsed Laser Deposition system and surfactant-assisted Spray coating routes have been optimized to get self-organized architectures on appropriate substrates. The results of this work will be highlighted in this talk.

We have pursued several novel applications for these materials, either in their dispersed form or in their thin film form. For example, manganite fluids in biomedical hyperthermia treatment, nanoparticles as a mini-furnace; nanostructures on template-substrates as self-assembled magnetic arrays. This work would be discussed in this talk. We have also been working on manganite-semiconductor bilayer configurations using Pulsed laser deposition system and the evaluation of these heterostructures as micro-devices. This work would be also presented.

Dr. Sangeeta Narendra Kale is Associate Professor (Reader) at Ferguess College and Agharkar Research Institute, India. She obtained PhD in Physics from University of Pune and did her post-doctoral study at University Maryland, USA. Recently, she is working on the syntheses of nano-sized magnetic particles in bio-medical applications, including hyperthermia and drug delivery. She has published more than 50 scientific papers and reports including 2 patents.