The Department of Chemistry and Biochemistry

Seminar Series

Presents a Seminar Titled:

"Nanostructured Materials: What Has Been Achieved Over the Past Two Decades?"

Presented By

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Over the past two decades, we witness the gradual evolution in nanomaterials studies from the straightforward synthetic tasks aiming the development of effective techniques of nanoparticles' size and shape controlling to more comprehensive paradigm of creation of the space for predesigned propagation of electromagnetic radiation.

In the first part of my talk, I will briefly review the past achievements of wet chemistry preparative techniques in the synthesis of nanoparticles, specifically emphasize our work on the synthesis and characterization of hollow core, highly monodispersed (Cd_xSe_x x=13, 16, 19, 33, 34) magic clusters with well-defined stoichiometry. In the second part, I will discuss the current state of the art in the experimental studies of photonic metamaterials with hyperbolic dispersion: some synthetic issues related to electrochemical synthesis of flat and curvilinear metamaterials based on array of silver nanowires in alumina membrane; an effective controlling of the rate of spontaneous emission and suppression of reflection with hyperbolic metamaterials, and current efforts on the studies of wettability and surface states of these materials.

Thursday, February 28, 2013 at 12:20 in BAL 1012