

CBC SEMINAR ANNOUNCEMENT



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Photonic and Magnetic Nanoparticles and Nanoscale "Teflon" Coatings

An emerging class of photonic nanoparticles can be prepared with systematically tunable absorptions ranging from visible to near infrared (NIR) wavelengths. These nanoparticles serve as versatile nanoscale tools, where the particles can be optically detected/modulated by irradiation with NIR light. This presentation will highlight the preparation, characterization, and applications of hollow "nanoshell" particles that possess a variety of dimensions, chemical compositions, and optical properties. In particular, current synthetic strategies allow the preparation of NIR-active nanoshells that possess diameters as small as 40 nm, which opens the door to new medical diagnostics and therapies, as well as unique opportunities in the energy sector, where such nanoshells offer unique benefits in plasmon-enhanced solar conversion. Separate studies targeting the development of cubic and spherical magnetic nanoparticles for biosensing will also be described; importantly, our studies have found cubic magnetic nanoparticles to offer a variety of advantages when compared to the more widely utilized spherical magnetic nanoparticles. A third topic will focus on fluorinated organic thin films, with an emphasis on understanding the minimum degree of fluorination required to give nanoscale "Teflon-like" coatings.

Date:	6th November 2017 (Monday)
Time:	11:00am – 12:30pm
Venue:	SPMS Research & Graduate Studies Office Conference Room
Host:	Assoc Professor Zhao Yanli