

Surface Chemistry of Gold Nanorods: Wrapping, Stitching, Exchanging and Coating

Professor Catherine Murphy

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ABSTRACT

Gold nanorods have potential applications as chemical sensing, biological imaging, and photothermal therapeutics. Our laboratory has developed the syntheses of these materials, in controlled size and shape, over the last few years. Surface modification of these nanomaterials is a key step to enable applications. In this talk I will describe our recent efforts to wrap up nanorods with layer-by-layer polyelectrolyte deposition in aqueous solution, in a way that allows for “capture coating” of small molecules at defined distances from the surface; how we can “fix” the surface of the nanomaterials by on-particle polymerization reactions; and how surface ligand exchange and overcoating affects biological properties of these materials.

BIOGRAPHY

Professor Catherine Murphy is the Peter C. and Gretchen Miller Markunas Professor of Chemistry at the University of Illinois at Urbana-Champaign. She received B.S. degrees in chemistry and biochemistry from the University of Illinois in 1986 and a Ph.D. from Wisconsin in 1990. From 1990-1993, she was first an NSF and then an NIH postdoctoral fellow at the California Institute of Technology. From 1993-2009 Professor Murphy was a faculty member in the Department of Chemistry and Biochemistry at the University of South Carolina, joining the faculty of the Department of Chemistry at the University of Illinois in August 2009. Her research is at the interface of materials chemistry, inorganic chemistry, biophysical chemistry and nanotechnology, with a primary goal to develop inorganic nanomaterials for biological and energy-related applications, and to understand the chemical interactions of these nanomaterials with their surroundings. In 2011 she was ranked by Thomson Reuters Sciencewatch #32 in a List of “Top 100 Chemists for the Decade 2000-2010” and #10 in a List of “Top 100 Materials Scientists for the Decade 2000-2010”. She is the Deputy Editor of the Journal of Physical Chemistry and a Fellow of the American Chemical Society.



EVENT DETAILS

DATE:

Wednesday Nov. 28, 2012

TIME:

11:00 AM

LOCATION:

Babbio Center, Room 122
Stevens Institute of Technology

ATTENDANCE:

This event is open to Stevens' Faculty, Students, Staff, and Invited Guests

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