



## **Pharmaceutical Materials Science - Use of nanotechnologies for drug delivery**

**Wednesday October 3, 2007  
Burchard 118, Time 11am**

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The emerging field of nanotechnology has an enormous potential contribution to make to the field of pharmaceutical materials science. The advantage of drug nanoparticles can be as simple as dissolution rate enhancement through increased surface area or as complex as targeted delivery through novel pathways. However, the application of many nanoscale technologies has been slow due to difficulties controlling the drug form upon size reduction and maintaining chemical and physical stability upon storage. Advancing beyond these limitations has required a unique understanding of both the materials properties of the active ingredient as well as the physical chemistry of the nanosized particle. Although deficiencies exist in the current technologies, if properly applied significant drug delivery advantages can be achieved.

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**Parag Shah** is a Principal Scientist in the Parenteral Center of Emphasis at Pfizer Inc. He holds a BS in Chemical Engineering from Carnegie Mellon University and an MS and PhD degree in Chemical Engineering from The University of Texas at Austin. His doctoral research was in the area of nanoparticle synthesis and stabilization in supercritical fluids focusing on inorganic materials synthesis and colloid science. His current interests are in applying nanotechnology in pharmaceutical applications, specifically for enhanced drug delivery. Areas of his work include understanding the synthetic and colloidal aspects of pharmaceutical nanoparticles. In addition he is interested in understanding the impact of nanoparticles on drug pharmacokinetics.

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