



UNIVERSITY of
DENVER

PHYSICS AND ASTRONOMY

Presents:

Use of Magnetic Nanoparticles as Drug Delivery System and Fluid Property Probe

*Wednesday, October 13, 4:00 pm
Olin Hall 205*



Dr. Kathrin Spendier
Associate Professor
Department of Physics and Energy Science
University of Colorado, Colorado Springs

Magnetic nanoparticles have been proposed for various applications in biological systems, including killing tumors through hyperthermia and magnetic resonance image (MRI) contrast enhancements. Our work is devoted to investigating the feasibility of using magnetic particles as fluid property probe and as drug delivery vehicles through high viscosity fluids. We developed an imaging system that can control and visualize magnetic particle motion in time-varying magnetic fields. Depending on the fluid viscosity, the magnetic material used, the magnetic field frequency, and amplitude, we observe particles rotate, oscillate, wiggle, spin, and flip. These different modes of particle motion can be understood theoretically and used to perform in situ measurements of cultured primary normal human tracheobronchial epithelial cell mucus viscosity.

Note:

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Dr. Mark Siemens, 303-871-3541, mark.seimens@du.edu