

INM COLLOQUIUM

“GOLD NANOCRYSTALS: PHYSICS, CHEMISTRY, BIOLOGY, AND ECOLOGY”

Prof. Dr. Catherine Jones Murphy

University of Illinois at Urbana-Champaign, USA

Friday, March 08, 2019, 11:00 am

INM, Leibniz-Saal, Campus D2 5

Host: Prof. Dr. Tobias Kraus

Gold nanocrystals of controlled size and shape have tunable optical properties that enable new science. Upon illumination with resonant light, these gold nanocrystals generate plasmons (coherent oscillations of conduction band electrons). These plasmons, in turn, can produce local electric fields and heat. In this talk I will discuss four short stories about gold nanocrystals and their plasmons. In “Physics” we will discuss how molecules experience the local electric field provided by illuminated plasmonic nanorods. In “Chemistry” we will discuss how the surface chemistry of the nanocrystals can be tuned with both hard and soft shells, and how the particular chemistry at the surface dictates molecular function. In “Biology” I will discuss how these nanocrystals interact with biological fluids and living cells; and in “Ecology” I will discuss how these nanoparticles are distributed in an estuarine ecosystem as a function of surface chemistry.

You are invited to have coffee with the speaker 15 minutes before the talk starts.

KONTAKT

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