

Colloquium Notice

Andrii Golovin

City College of CUNY

*Electro-Optic Effects in Colloidal Dispersion of Metal
Nano-Rods*

Metamaterials with properties that vary from point to point in space and time are suitable for new applications such as an “optical cloak”. Colloidal dispersions of metal nano-rods in dielectric fluids are appropriate to construct such spatially varying and electrically reconfigurable optical metamaterials. An applied electric field can be used to control the orientation and concentration of nano-rods, and thus modulate the optical properties of the dispersion. For example, by using gold nano-rods dispersed in toluene, we demonstrate an electrically induced change in refractive index on the order of 0.1 which was used to change the visibility of metal object. This approach is also valid to design an omnidirectional broadband optical “black-hole”.

Monday
November 24, 2014
Starts at 12:15 PM
Physics Conference Room, SB B326