



Optical nanofibers

Presented by:

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Nanofibers produced by tapering an ordinary single mode optical fiber to diameters of half a micron are interesting optical objects. Evanescent fields, with large gradients, develop as the radius reaches less than the wavelength of light posing puzzles, questions, and opportunities. I will present the work at JQI where we have achieved transmissions of 99.95% and by using Rayleigh scattering can study the escape of modes from the core to cladding permitting the non-destructive measurement of the diameter to resolutions approaching 5 nm. We also trap Rb atoms using the evanescent fields around the nanofiber and probe their dynamical behavior in these tight traps.

Work done in collaboration with: Jeffrey A. Grover¹, Jonathan E. Hoffman¹, Sylvain Ravets¹, Pablo A Solano, J. David Wong¹, Peter Kordell¹, Eliot Fenton¹, Steven L. Rolston¹, Guy Beadie², and Fredrik K. Fatemi⁴.

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Friday, November 13, 2015

Refreshments served

Seminar begins at 3:35 PM in Science Center 128