Targeted Permeation and Analysis of Living Cells by Femtosecond Lasers

Aliya Gifford

Given the demand from several fields of work, new and more reliable techniques for cell manipulation are being developed. This research project will work to better characterize and perfect one relatively new process in this field. This process uses high energy pulsed lasers to penetrate living cells without harming the cell. In this presentation we will discuss the technique of penetrating living cells with high energy pulsed lasers. Our work here at Virginia Tech will include the insertion of quantum dots into the living cells in order to obtain information about the cells. How this method works, and previous research will be discussed along with our future plans here at Virginia Tech.

Optical sectioning of a sphere by confocal planes to show inserted particles.