

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Manipulation and analysis of *Xenopus laevis* embryos by femtosecond near infrared lasers ALIYA GIFFORD, G. KHODAPARAST, Department of Physics, Virginia Tech, Y. XU, V. SETHI, K. MEEHAN, Department of Electrical Engineering, Virginia Tech, J. SIBLE, Department of Biological Sciences, Virginia Tech — Given the demand for new and more reliable methodologies for live cell manipulation, we have used a technique (demonstrated earlier by Tir-lapur and König, *Nature*, **418**,290, 2002) using near infrared laser pulses (NIR) to manipulate living cells, specifically, cell of *Xenopus laevis* embryos, without harming them. In addition nanoparticles such as silica-coated CdSe and CdTe quantum dots are injected into the cell through pores formed by the laser pulses. Due to the highly efficient and size-dependent fluorescence of QDs, they can be used in place of conventional dyes to perform live-cell imaging. In this work, we will discuss our current understanding of NIR lasers and QDs interactions with the *Xenopus laevis* embryos. The outcome of this project can help us to understand the fundamental phenomena and processes important in biological systems and cellular function.

Giti Khodaparast
Virginia Tech

Date submitted: 18 Nov 2006

Electronic form version 1.4