Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Optimizing coherence domain imaging system for biomedical imaging PING YU, Department of Physics and Astronomy, University of Missouri-Columbia, DAVID NOLTE, Department of Physics, Purdue University — Holographic optical coherence imaging (OCI) system has shown promise in record full-frame depth-resolved images in tumor tissues, allowing real-time video display. Normally a holographic OCI system consists of a low coherence interferometry, a dynamic coherent filter and a CCD camera for image record and display. The key component in the system is photorefractive multiple quantum wells (PRQW) devices that act as the coherence filter passing full-frame image bearing light while rejecting the scattered background. Holographic OCI system is optimized by considering adaptive capabilities, speckle suppression and higher diffraction efficiency of the devices. Both AlGaAs/GaAs and InGaAs/GaAs devices have been examined at different working wavelengths based on degenerate four-wave mixing and non-degenerate four-wave mixing.

Ping Yu
Department of Physics and Astronomy, University of Missouri-Columbia

Date submitted: 01 Dec 2004 Electronic form version 1.4