Seminar on
Modern Optics and Spectroscopy

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Diagnosing Breast Cancer: Raman Spectroscopic Real-Time Pathology

March 23, 2004
12:00 – 1:00 p.m.

Abstract

Breast cancer is the second most common cancer accounting for one in every three cancers diagnosed in American women. Currently breast cancer screening is performed by a combination of annual clinical breast examinations and x-ray mammography. However, only 10-25% of the suspicious lesions detected during mammography are in fact malignant. This high rate of false positive mammographic screening results in unnecessary and costly surgery. While mammography can image anatomic changes, it is not sensitive to the underlying morphologic and biochemical changes that distinguish benign and malignant breast lesions. Raman spectroscopy is ideally suited to exploit these factors as it provides detailed biochemical information about a tissue sample. Data will be presented which illustrates our progress in using Raman spectroscopy to diagnose breast cancer. The technique will ultimately be implemented in real-time during mammography, using a fiberoptic device delivered through a biopsy needle.

Grier Room, MIT Bldg 34-401
Refreshments will be served