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Optical Coherence Tomography

Ashraf El-Sherif, Yasser El-Sharkawy and Ramy Yehia
Military Technical College

Abstract

Fourier Domain optical Coherence Tomography (FD-OCT) is used to obtain subsurface cross-sectional images with micron level resolution by analyzing the interference pattern created by the mixing of light in a Michelson Interferometer. FD-OCT systems are able to obtain a direct measurement of the scattering amplitude along a vertical axis within a bulk sample. One exposure provides the complete scattering profile from the surface into the bulk of the sample; this measurement is commonly referred to as an A-scan. Fourier Domain optical Coherence Tomography (FD-OCT) achieves greater sensitivity and higher imaging speed than time domain OCT and has become a powerful tool for biomedical and material application.