ABSTRACT

The present invention to provides methods and apparatus for studying photon migration using signal modulation techniques such as time, frequency and phase modulation. The photon migration data may then be converted, using the principles of time-resolved spectroscopy, to determine the concentration of an absorptive constituent in a scattering medium, such as the concentration of hemoglobin in a brain of other tissue. The methods and apparatus disclosed provide as a specific embodiment, a dual wavelength phase modulation system which allows the clinical application of the advantages of time resolved spectroscopy in an economical and commercially feasible embodiment.

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