Abstracts

Optical Ranging of Muscle and Brain

B. Chance, J. Haselgrove, J.S. Leigh, M. Patterson and E. Sevick. "Optical Ranging of Muscle and Brain." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 913-916.

Radar and optical ranging under conditions of poor propagation through scattering media have similarities in detection and imaging of brain biochemistry. In the intensely scattering properties of the brain, chemical identification of altered states of hemoglobin oxygenation are described and approaches to localization of brain bleeding are outlined. Both time domain and frequency domain employ similar technology. In brain study, a pulse time resolution of 400 ps and in phase modulation frequencies in the vicinity of 200 MHz can be employed. In both systems, global or localized data acquisition detects or images brain hypoxia or localized bleeding.

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