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Research Papers

Optical properties of human skin in the near infrared wavelength range of 1000 to 2200 nm

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Abstract

Abstract | 1 Introduction | 2 Double Integrating Sphere Measurements of Tissue Optical Properties | 3 Validation of the Experimental Setup | 4 Tissue Specimen | 5 Skin Phantom Model | 6 Discussion | Acknowledgments | References

In this paper we present the absorption coefficient μ_a and the isotropic scattering coefficient μ'_s for 22 human skin samples measured using a double integrating sphere apparatus in the wavelength range of 1000–2200 nm. These *in vitro* results show that values for μ_a follow 70% of the absorption coefficient of water and values for μ'_s range from 3 to 16 cm^{-1} . From the measured optical properties, it was found that a 2% Intralipid solution provides a suitable skin tissue phantom. © 2001 Society of Photo-Optical Instrumentation Engineers.

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Topics

Near infrared ; Optical properties ; Scattering ; Skin ; Tissues ; Absorption ; Water ; Integrating spheres

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