

عنوان مقاله:

The Modelling of Laser Parameters Effects on Temperature Changes in Different Tissues

محل انتشار:

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خلاصه مقاله:

The present analysis estimated the changes of temperature subsequent laser therapy on skin, subcutaneous adipose tissues and muscle, by COMSOL Multiphysics software. Different thickness of tissues were selected and irradiated by continuous mode of wavelengths of laser with Gaussian beam profile. A preliminary model of combining the optical and thermal characteristics of these tissues was designed. The simulations predict the thermal distribution of laser on tissues corresponding to different wavelengths and different beam doses. The results of the data analysis indicated that laser irradiation at different wavelengths can increase skin temperature ۳۷ up to ۳۹ degrees of centigrade in photobiomodulation technique. The enhancement of temperature showed insignificant impact on subcutaneous adipose tissues and was negligible on the deep tissues such as muscle. The estimations could be validated by experimental trials.

کلمات کلیدی:

Photobiomodulation, Thermal distribution, COMSOL Multiphysics

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