

Laser-tissue photothermal interaction: a thermal infrared imaging study

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A 2-D approach, based on Infrared (IR) imaging for monitoring and optimizing the photo-therapy in dermatology, is proposed. We studied the possibility to employ IR imaging in order to select the laser treatment parameters for each patient. A Pulsed Thermography (PT) model allowed to evaluate morphological information on the specific area to treat after a single laser pulse test. The data were elaborated through a 2-D numerical simulation, which described the tissue temperature profiles for different sets of laser parameters. Based on this approach, it was possible to select the laser parameters according to specific pathology, morphology and phototype in order to achieve the best performances in the phototherapy practice.