

Title (en)
METHOD AND APPARATUS FOR SUPERFICIAL SKIN HEAT TREATMENT

Title (de)
VERFAHREN UND APPARAT ZUR OBERFLÄCHLICHEN WÄRMEBEHANDLUNG DER HAUT

Title (fr)
PROCEDE ET APPAREIL DESTINES A UN TRAITEMENT THERMIQUE SUPERFICIEL DE LA PEAU

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Application
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Abstract (en)
[origin: WO0162170A1] A method and apparatus for depth controlled conductive heat treatment of superficial layers preferably biological tissue such as the epidermal layer is disclosed. The method of the invention is to press a thin radiation absorptive layer attached to a bulk substrate with low thermal diffusivity in direct (or indirect via a protective overcoat layer on the absorptive layer) in physical contact with the object surface to heat. The cross section area of the absorption layer is typically 1cm². The absorptive layers is firmly attached to an optically transparent bulk substrate that is cooled in a controlled manner in order to remove excessive heat from the absorbing layer and bulk controlled manner in order to remove excessive heat from the absorbing layer and bulk substrate. In a preferred embodiment the absorptive layer is heated by the radiation from a modulated or pulsed in-coherent electromagnetic-source preferably a pulsed arc-lamp. Typical pulse duration is 0.5-50 ms with a repetition frequency of 0.5-5hz. The depth of the heat affected zone in the tissue is fine tuned by optimization of the duration time of the electromagnetic radiation pulse and the amount of energy in the pulse from the flash lamp source and the pre-pulse cooling via the waveguide.

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