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NON-POLLUTING MEDICAL TECHNOLOGY FOR ENVIRONMENT AND PATIENT USED IN INFLAMMATORY DISEASES MONITORING

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Abstract

This paper presents a medical diagnosis method, based on the interaction of the infrared laser beam and the human body, in a hospital environment, for inflammatory diseases, avoiding infected wastes. The main advantage of the laser bio-photometry is a rapid localization of the inflammation source, deep under the skin up to 5 cm, in emergency cases, when there is not enough time for classical medical procedures. Other advantages consist in the pollution absence for environment and patient, post-surgical monitoring possibility with minimum costs for sterilization, and consequently, it is non-dangerous to transmit infection from person to person being a non-invasive diagnostic technique. The studies concern the interaction particularities of the *in vivo* close infrared spectrum with the human tissues, extracting the average reflection coefficient in the intact tissues and in the pathologically modified tissues: edemas, hematomas, abscesses, others. The determined average reflection coefficient from the intact tissues is an index of the health-state, having medium values between 55.7-68mW, which are stable in time. The determined average reflection coefficient in infrared spectrum from the pathological modified tissues varies between 42-58mW and it alters in time accordingly, with the evolution process. A clinical study of patients monitored by laser bio-photometry is presented. This non-invasive technique offers an objective parameter for injuries evolutions with roughly zero infected wastes during the investigated period. In this paper, the non-polluting properties of laser bio-photometry are highlighted, as a novel aspect of this medical method.

Key words: biotechnologies, diagnosis, environmental protection, laser

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