New patent to establish if a person will suffer from burns with laser hair removal treatments

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Researchers at the U. of Granada have developed an innovative technique which facilitates the preventive identification of potential damage in the skin of a patient before he or she is submitted to a dermatological treatment by pulsed light, such as IPL (Intense Pulsed Light). These systems are frequently used in dermatological treatments such as photoepilation, skin rejuvenation, the elimination of acne or vascular injuries.

In spite of the fact that the manufacturing and maintenance of IPL equipment have grown dramatically due to its frequent use in dermatological clinics, there is not an exhaustive and reliable method that can determine the susceptibility of a patient for skin burns due to an excess in the absorption of radiation during the treatment.

So far, only the skill of the operator of this equipment was used to adapt the power and the type of pulse to a given patient's skin type. The operator must also rely on the information provided by the patient as regards, for instance, whether he or she has been sunbathing recently or not. The application of laser pulsed light on suntanned skin can provoke serious burns which do not become visible at the moment of the treatment, but manifest themselves serveral days afterwards. This has resulted in frequent legal disputes between patients and the dermatological centres that applied the treatment.

An OTRI (Knowledge Transfer Office, U. of Granada) patent

The new method, designed at the U. of Granada, has been patented through its Knowledge Transfer Office. It can determine the sensitivity of the skin to radiation immediately before the dermatological treatment. By means of the application of pulsed light in different skin areas, the system analyses the temporal evolution of the thermic response of the patient's skin, and provides information on the potential risk that the subject might suffer burns during and after the treatment.

According to PI of the team that has patented this new device, prof. Andrés Roldán Aranda from the Electronics and Computing Technologies Department, "this method works through an electronic device that can be incorporated to pre-existing pulsed light equipment, and of course it can also be integrated within new devices."

Researchers have also developed a new electronic device capable of monitoring a patient's skin temperature as he or she receives the effects of pulsed light radiation generated by IPL equipment.

"A device like this one provides a competitive advantage for dermatological clinics, in particular as regards photoepilation, since it can avoid the most potentially risky cases of skin burns, and thus avoid the legal disputes originated by injuries of this type", profesor Roldán emphasised.

This research team at the U. of Granada is currently looking for business partners in the field who might be interested in reaching a licencing agreement and in establishing joint projects for the further development of this new invention.

The research team responsible for this new device includes Andrés Roldán Aranda, Francisco Javier Arrebola Vargas, Pedro Ortuño Cañizares and Juan Bautista Roldán Aranda.

Provided by University of Granada