



Press Release

Scientists develop laser fabric that cures skin diseases

Chronic skin conditions such as Actinic Keratosis, acne, and psoriasis can now be treated in a single 150-minute appointment, thanks to a new wearable laser that blasts the skin with light.

French scientists at 'Texinov Medical Textiles', have developed a knitted laser fabric that blasts the skin with light, giving treatment to enflamed skin or lesions over a 2-and-a-half-hour appointment

Heralded as a 'miracle cure' by users in clinical trials, the painless laser fabric will be the quickest device on the market at eradicating unwanted skin conditions, with no side effects.

Initially developed to improve the treatment of Actinic Keratosis – rough, scaly patches on the skin that develop from years of exposure to the sun – the light emitting textile can treat and even cure a number of skin complaints such as acne, Paget's disease, psoriasis, and other disease like baby jaundice.

Going by the name FLUXMEDICARE the new laser fabric, using the latest photonics technology, has been made in collaboration with a pan-European health consortium PHOS-ISTOS.

It works by covering the affected area with a 'photosensitizer' cream then wrapping the skin with the light-emitting textile. Optical fibres knitted into the fabric then speed up the reaction between oxygen and photosensitizer cream beneath the skin. Dr Nadege Boucard, R&D General Manager at Texinov explains:

"FLUXMEDICARE is unprecedented in the field of treating skin conditions. Since the lighting textile wraps around the unique, individual contours of a patient, the emitted light in our device is the same at every part of the body under treatment, meaning the beams are homogenous."

Prior to FLUXMEDICARE the only technology used to treat skin ailments such as Actinic Keratosis came in the form of Photo Dynamic Therapy (PDT) where a patient would stand under a lamp blasted with light from a flat pane. With the intensity of the treatment, this previous technology would cause severe pain and even redness to the skin.

"Previous PDT was unsatisfactory in many ways." Dr Boucard said, "Not only did patients report a pain ranking of at least 7/10 as well as burns and redness persisting for several days, but also, coming from a flat source, a lot of the emitted light was 'lost'."

Painless Light Therapy

During the clinical trials with INSERM Onco Thai Lab-CHRU Lille and Klinikum Vest in Germany, patients reported an average pain ranking on the FLUXMEDICARE device of between 0 and 1 out of ten.

"The fact that we had a near 90% drop in pain levels compared to the previous technology, and the same efficacy was really promising. FLUXMEDICARE is easy to use for both the

patient and the clinician: since you don't need to be protected from the laser treatment, you can put your feet up and watch TV during the treatment," said Dr Boucard.

For the medical team the new FLUXMEDICARE device comes relatively cheap. The old technology would cost anything from €15,000 for the lamp and protective gear and requiring a dedicated set up in a hospital room or within a dermatologist's surgery. However, the new laser system currently costs around 1/3 of the price of its predecessor.

"The FLUXMEDICARE device is flexible and mobile so a number of patients can be treated simultaneously. In the future we hope to treat people in their own homes. The implied healthcare savings are substantial," Dr Boucard said.

The PHOS-ISTOS consortium secured a grant of €2,390,000 from the European Commission under the CIP funding program, and is comprised of participants from five European countries: (France) Institut National de la Sante et de la Recherche Medicale, Centre Hospitalier de Lille, EREO Sas, Ecole Nationale Superieure Arts Industries Textiles, Universite de Lille II – Droit et Sante, Deltaval Sarl; (Germany) Klinikum Vest GmbH; (Finland) Fluence Therapeutics OY, Modulight OY; (Italy) Consorzio per la Promozione della Cultura Plastica Proplast; (Netherlands) Reden B.V.

The team at PHOS-ISTOS expects to have their product ready for commercial uptake in April 2018.

About Textinov

www.texinov.fr

About PHO-ISTOS

<http://www.phosistos.com>

About Photonics21

Photonics21 is the European Technology Platform (ETP) for photonics, a technology encompassing all of the products and processes around the emission, manipulation and detection of light. Photonics is integral to a wide range of industries that include the medical, healthcare, transport, manufacturing, and telecommunications sectors.

"Photonics21" was set up in December 2005 to bring the community of photonics researchers and industries together. The European Commission defined photonics as one of six European Key Enabling Technologies (KET's) in September 2009. Shortly after, the European Research & Innovation Program "Horizon 2020" invited Photonics21 to become a "Public Private Partnership" (PPP). The "Photonics 21 Association", a legal entity under Belgium law, became the private contract partner in November 2013 in a Public Private Partnership (PPP) in conjunction with the EU Commission.

Today Photonics21 represents more than 3000 personal members from across Europe and abroad. Our members are experts in the photonics industry, research organisations and universities who actively engage with us to develop a joint photonics strategy for future research and innovation in Europe.

With the global photonics market growing from €350 Billion in 2011 to €447 Billion in 2015, Photonics remains a strong industry. The European photonics industry, estimated to be worth €70 billion, has considerable global leadership positions and employs over 300,000 people directly.

With positive growth forecast, current industry trends like digitalisation, resource efficiency, individual and zero failure production will drive the photonics industry further.

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