Flexible & Wearable Electronics Application Experiments

ENDOMEDICA

Endomedica GmbH founded in 2014 is specialized in the research and development of innovative transdermal therapeutic systems for treatment of endocrinological, oncological and internal diseases. Endomedica is a registered pharmaceutical company and acts as a marketing authorisation holder and wholesaler for medicinal products.

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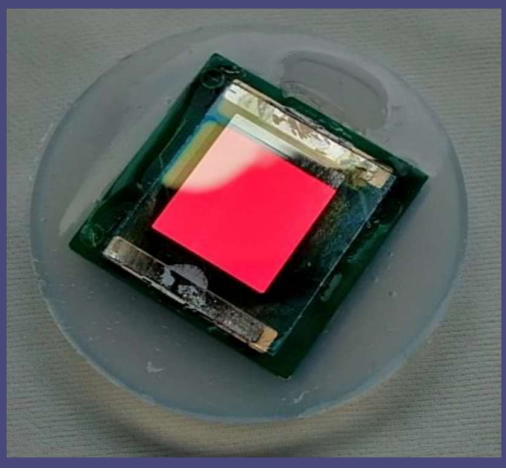

Problem to be solved

Aim of the project is the development of an OLED containing patch for the longtime domestic photodynamical therapy for the treatment of actinic keratosis, an Epithelial Carcinoma in situ of the skin. Actinic keratosis is recognized as an occupational disease and evolves in 10 % of the cases to an invasive form of white skin cancer. Until now existing treatments are costly and can extend over 90 days. In current photodynamic therapies, no standard exists for the applied light dose and spectrum and is tied to clinical treatment. This time consuming therapy requires a high effort in personal assistance, which generates high costs. Developing a medical device that is flexible, can be worn, and emits light of a certain spectrum and dose will be of great benefit to patients and public healthcare.

Solution provided by SmartEEs

Within the AE we want to create the first step, a smart patch containing a thin and comfortable flexible mono-chromatic OLED with an integrated power supply. Later, this patch is to be extended to include the pharmaceutical ingredient to his adhesive film to further simplify the application. To activate the pharmaceutical ingredient the OLED should emit light with a specific wavelength of 630 nm (peak) with > 2 W/m2 (630 nm ± 3 nm).

Business model & impact

In Germany, 2 to 3 million people develop actinic keratosis (AK) each year, many of whom are treated with photodynamic therapy. Due to the demographic development and the increasing age of the German population, an upward trend to a predicted 5 million cases per year is expected. OPatch is therefore an ideal product for the patient. It gives the patient freedom of application while ensuring they receive the correct amount of localized light in a controlled manner, limiting overexposure and associated pain. OPatch addresses an unmet market need.

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