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sciences & technologies

Molecular, cellular & tissue engineering

ANGIOSKIN

Painless transdermal drug delivery

Scope

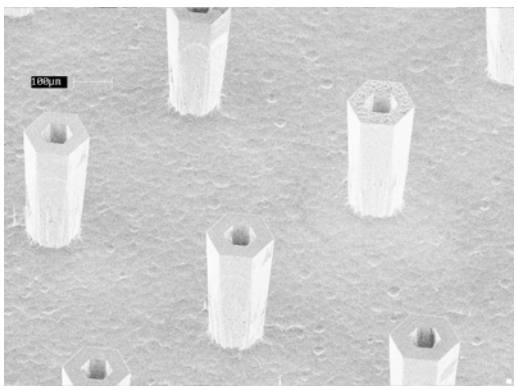
The use of microneedle arrays has stirred up widespread interests in the past few years. One of the relevance of these setups are to provide precise penetration depth under the skin and to painlessly deliver medicine in the outer layer of the skin.

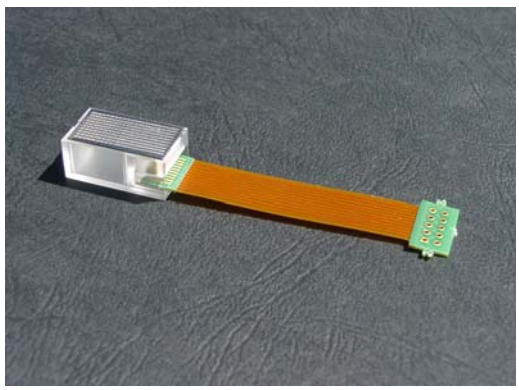
Current State of Art Technology

Drug delivery through the skin is a very active field of research. Patches are popular but limited to the drugs composed by molecules able to penetrate the outer layer of the skin: the stratum corneum. Among other possibilities, microneedles are an innovative painless solution to overcome this barrier. A few product are already commercially available such as Macroflux from Alza Corporation or MTS from 3M Company, but all are solid needles which is a strong limitation on the amount of drug delivered.

Purpose

In that project we investigate the possibility to fabricate arrays of hollow microneedles able to penetrate the skin without breakage and to deliver a precise amount of drug through 1 cm².





Laboratory & Clinical Advantages

The other advantages pointed up of such devices are :
the painless delivery of drug through the skin,
the possibility to deliver precise amount of drug in a particular layer of the skin,
the possibility to investigate these new fields as for example : the electroporation in-vivo, thermal or magnetic activation

Partners

This project is currently under development in the 6th framework of the European project ANGIOSKIN

FEMTO-ST – Department of Physics and Metrology of Oscillators

32 avenue de l'Observatoire
25000 Besançon CEDEX

Contact : Dr. Gonzalo Cabodevila
Tél. : (+33 3) 81 85 39 38 Fax : (+33 3) 81 85 39 98
Mail : gonzalo.cabodevila@femto-st.fr
Site : http://www.femto-st.fr