

PlasmaSkin – Medical potential of mini-plasma-jets

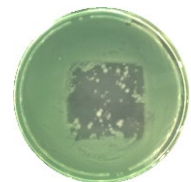
Transfer offer

Atmospheric pressure plasmas have the potential to be used in dermatological fields of application. Such investigations are currently still in the development stage and are the subject of current research. INNOVENT has experience in testing atmospheric plasma sources for medical, especially dermatological applications.

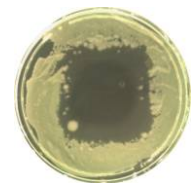
Technical solution

Before atmospheric-pressure plasmas can be used in dermatology, a comprehensive characterization of the plasma and the plasma source itself is required. This can be done, for example, by means of spectroscopic methods such as OES or LIF or also temperature determinations in the vicinity of the plasma jet. Furthermore, intensive investigations are necessary to determine the antimicrobial activity against various germs as well as investigations on the cytotoxic behaviour of the plasma species.

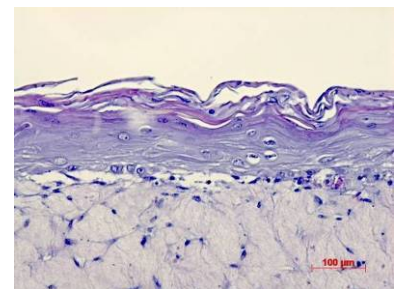
Plasma treatment of *Pseudomonas aeruginosa*



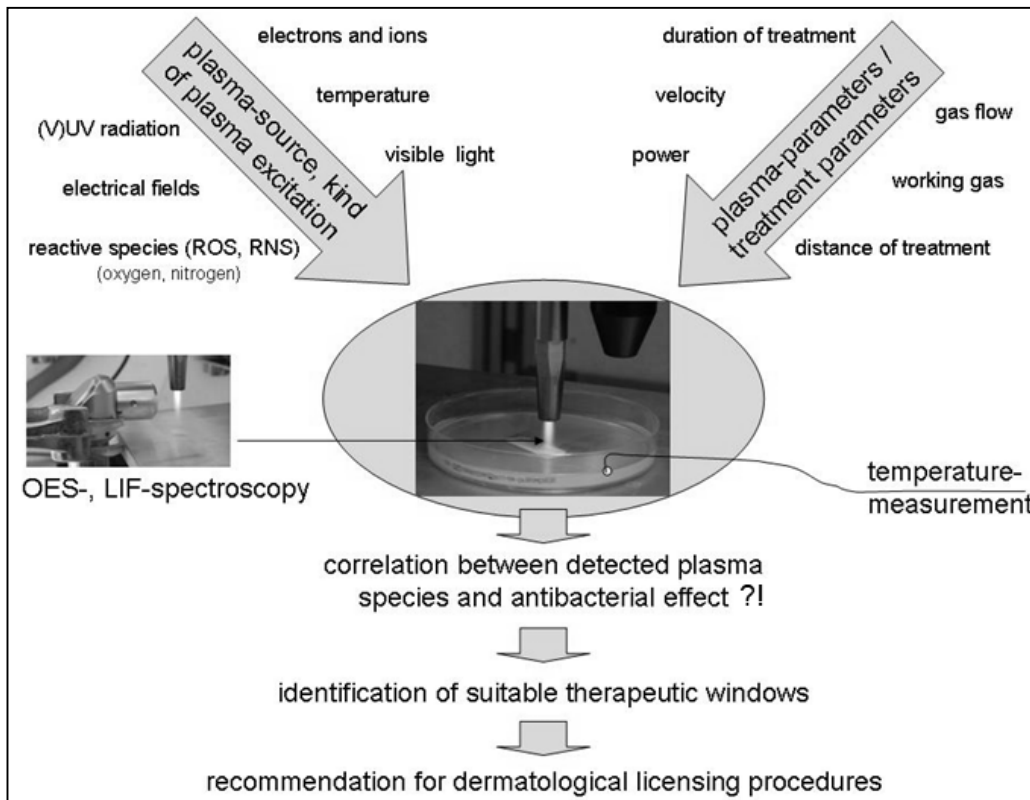
using air as process gas



using nitrogen as process gas



3D skin model,
 histological cut



Selection of suitable plasma parameters considering the active components of the plasma for the identification of useful therapeutic windows in medicine and medical technology

Advantages

- **successful control of multi-resistant germs**
- **healing effect on chronic wounds**
- **Healing-promoting functionalization of implant surfaces**
- **disinfecting treatment of temperature-sensitive materials**

Level of development and property rights

The plasma source under investigation must be certified according to ISO 13485, tested in medical studies and approved as a medical device. The solution steps shown can be transferred to other plasma sources. There are no industrial property rights regarding the medical application of the plasma source.

Contact

Dr. Sven Gerullis
 Dr. Sebastian Spange

SG@innovent-jena.de
 SS2@innovent-jena.de

Phone +49 3641 2825-51
www.innovent-jena.de/en

