Research and development of plasma sources for applications in life science

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Especially plasma sources operating at atmospheric pressure are of increasing importance in all fields of life science applications. Selected topics of interdisciplinary research between plasma physics and life sciences and aspects of the combination of basic and application-oriented research will be discussed using selected examples of technologies for plasma sources applicable for e.g. clean surface, clean water, clean food and medical use. But at the beginning of the process chain the key issue for the development of new technologies and applications are reliable plasma sources. [1] These prototypes or devices are needed to be fully characterized. General basic criteria for the performance characterization of plasma devices should be standardized to establish innovative technology for e.g. medical applications. [2]

The contribution focuses on the investigation and development of selected CAP-sources (prototypes as well as certified devices) for various applications, as well as exemplarily disclosed results in hygiene, dermatology, wound healing, veterinary medicine are presented and an outlook on future research will be given.

[1] Weltmann et al. Atmospheric-pressure plasmasources: Prospective tools for plasma medicine. Pure Appl. Chem. 82 (2010)1223-1237

[2] DINSPEC 91315:2014-06, General requirements for plasma sources in medicine. DIN e.V.,Beuth Verlag Berlin 2014

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