Abstract Submitted
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plasmatis Center for Innovation Competence: Controlling reactive component output of atmospheric pressure plasmas in plasma medicine[1] STEPHAN REUTER, ZIK plasmatis at the INP Greifswald e.V. — The novel approach of using plasmas in order to alter the local chemistry of cells and cell environment presents a significant development in biomedical applications. The plasmatis center for innovation competence at the INP Greifswald e.V. performs fundamental research in plasma medicine in two interdisciplinary research groups. The aim of our plasma physics research group "Extracellular Effects" is (a) quantitative space and time resolved diagnostics and modelling of plasmas and liquids to determine distribution and composition of reactive species (b) to control the plasma and apply differing plasma source concepts in order to produce a tailored output of reactive components and design the chemical composition of the liquids/cellular environment and (c) to identify and understand the interaction mechanisms of plasmas with liquids and biological systems. Methods to characterize the plasma generated reactive species from plasma-, gas- and liquid phase and their biological effects will be presented. The diagnostic spectrum ranges from absorption/emission/laser spectroscopy and molecular beam mass spectrometry to electron paramagnetic resonance spectroscopy and cell biological diagnostic techniques. Concluding, a presentation will be given of the comprehensive approach to plasma medicine in Greifswald where the applied and clinical research of the Campus PlasmaMed association is combined with the fundamental research at plasmatis center.

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