

Abstract Submitted
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Characterization of a new VHF-CCP for Sterilization KATHARINA STAPELMANN, NIKITA BIBINOV, Ruhr-University Bochum, JOACHIM WUNDERLICH, Fraunhofer Institute IVV Freising, PETER AWAKOWICZ, Ruhr-University Bochum — Plasma sterilization is an upcoming alternative to common sterilization methods. Reduced process times combined with a low treatment temperature lead to proper sterilization and decontamination results even for heat-sensitive materials. The capabilities of plasma sterilization were demonstrated in several laboratory setups. Based on these experiences, a new plasma reactor was developed and realized as capacitive coupled plasma discharge with a variable frequency range between 76 and 80 MHz. The reactor concept is designed to meet industrial needs. Therefore, a specialized chamber design was developed: it is composed of PEEK, a high-performance plastic, and it is shaped like a drawer to make the sterilization process easy and uncomplicated for application. Optical Emission Spectroscopy was performed to obtain detailed information about the plasma parameters. According spectra, intensities and plasma parameters will be presented in comparison to a well established ICP laboratory setup. These data are used for optimization of sterilization efficiency. Furthermore, first microbiological tests were carried out at optimized conditions.

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