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강연 제목: 의료기기 산업에서의 플라즈마 응용 기술 /

Plasma application technology in the medical device industry

Abstract:

As plasma contains ionized particles with high energy, it can easily react with other materials and chemically change them. One of the most representative medical devices that utilize these characteristics of plasma is a low-temperature plasma sterilizer. After the sterilization process, plasma disassembles the toxic hydrogen peroxide used as a sterilant into non-toxic materials, water, and oxygen. That gives plasma sterilizer has a short purification process time.

In addition, high energy particles within plasma can also promote the activation of the biomaterials. One example is a plasma device that improves the bioactivity of dental implants. When the implant surface is treated with plasma, impurities present on the implant surface can be removed, and the hydrophilicity of the surface can be improved. These results can enhance osseointegration by increasing protein adsorption and osteoblast proliferation.

Considering the highly reactive characteristics of plasma, we can expect that plasma technology have high potential to be applied to more diverse medical device industry applications.

Brief Biosketch

전현정은 상명대학교에서 미생물학 전공으로 박사학위를 수여하였으며 (2017), 플라스틱 분해균의 분해 거동과 분자적 특성에 대하여 연구하였습니다. 현재는 주식회사 플라즈맵에서 적합성 평가팀의 팀장으로, 제품의 FDA 인증 획득을 위한 성능 및 안전성 시험을 관리 및 담당하고 있습니다. / Hyun Jeong Jeon received her Ph.D. in Microbiology from Sangmyung University (2017), and studied the degradation behavior and molecular characteristics of plastic degrading bacteria. She is the team manager of the conformity assessment team at Plasmapp Co., Ltd., and is in charge of performance and safety test to obtain FDA certification for products.