

Abstract Submitted  
for the GEC18 Meeting of  
The American Physical Society

**Surface dielectric barrier discharge on polymer substrate for tissue treatment** SEUNGHOON LEE, Korea Institute of Materials Science, ADVANCED NANO SURFACE LABORATORY TEAM — To improve the electrical stability and portability of surface dielectric barrier discharge (SDBD) devices, it is necessary to secure low voltage and low power operations of SDBD. We fabricated polymer SDBD devices using commercial polymer substrates such as polyimide, polyethylene terephthalate. Functional thin film coatings were adapted to protect the degradation of polymer substrate due to reactive oxygen radicals. And the optimization of the electrode structure was conducted to minimize displacement current flow and maximize dissipated power. Several types of electrode such as circular, rectangular, and hexagonal geometry were investigated for SDBD devices. The SDBD showed stable discharge at a low voltage of 2 kV or less, and a pulse frequency of 5-10 kHz. Design parameters of flexible SDBD devices for low voltage and low power operations will be presented.

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Date submitted: 21 Jun 2018

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