Abstract Submitted
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Single and multiple streamer DBD micro-discharges for testing inactivation of biologically contaminated surfaces[1] VACLAV PRUKNER, EVA DOLEZALOVA, MILAN SIMEK, Institute of Plasma Physics AS CR, v.v.i., Department of Pulse Plasma Systems, Za Slovankou 3, 18200 Prague, Czech Republic — Highly reactive environment produced by atmospheric-pressure, non-equilibrium plasmas generated by surface dielectric barrier discharges (SDBDs) may be used for inactivation of biologically contaminated surfaces. We investigated decontamination efficiency of reactive environment produced by single/multiple surface streamer micro-discharge driven by amplitude-modulated AC power in coplanar electrode geometry on biologically contaminated surface by *Escherichia coli*. The discharges were fed by synthetic air with water vapor admixtures at atmospheric pressure, time of treatment was set from 10 second to 10 minutes, diameters of used SDBD electrodes (single and multiple streamer) and homogeneously contaminated disc samples were equal (25 mm), the distance between the electrode and contaminated surface was 2 mm. Both a conventional cultivation and fluorescent method LIVE/DEAD Bacterial Viability kit were applied to estimate counts of bacteria after the plasma treatment. Inactivation was effective and bacteria partly lost ability to grow and became injured and viable/active but non-cultivable (VBNC/ABNC).

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