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Non-thermal Plasma Infection Control DAVID GRAVES, MATHEW PAVLOVITCH, ZHI CHEN, DOUGLAS CLARK, YUKINORI SAKIYAMA, University of California at Berkeley — Healthcare-associated infections are among the major causes of death among hospitalized patients worldwide. Atmospheric pressure non-thermal plasmas offer great opportunities for helping to control infections by killing microbial targets on surfaces, including skin and wounds. In this talk, we report results from both experimental measurements and modeling of air and rare gas jet plasmas interacting with various surfaces. In some cases, direct comparison of model predictions to measurements of gas phase reactive species can be made. Results from plasma disinfection of inanimate, dry and moist surfaces, with both direct and indirect plasma exposure, against various microbial targets, will be presented. Plasma characterization includes voltage-current characteristics, optical emission spectroscopy, and for selected polymer films, surface modification via Fourier Transform Infrared Spectroscopy.

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