

Abstract Submitted  
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**Investigations of Biofilm-Forming Bacterial Cells by Atomic Force Microscopy Prior to and Following Treatment from Gas Discharge Plasmas**<sup>1</sup> K.G. VANDERVOORT, J.C. JOAQUIN, C. KWAN, J.D. BRAY, R. TORRICO, N. ABRAMZON, G. BRELLES-MARINO, Physics and Biology Depts., California State Polytechnic University, Pomona, CA — We present investigations of biofilm-forming bacteria before and after treatment from gas discharge plasmas. Gas discharge plasmas represent a way to inactivate bacteria under conditions where conventional disinfection methods are often ineffective. These conditions involve bacteria in biofilm communities, where cooperative interactions between cells make organisms less susceptible to standard killing methods. *Rhizobium gallicum* and *Chromobacterium violaceum* were imaged before and after plasma treatment using an atomic force microscope (AFM). In addition, cell wall elasticity was studied by measuring force distance curves as the AFM tip was pressed into the cell surface. Results for cell surface morphology and micromechanical properties for plasma treatments lasting from 5 to 60 minutes were obtained and will be presented.

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