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Atomic Force Microscope Investigations of Bacterial Biofilms Treated with Gas Discharge Plasmas[1] KURT VANDERVOORT, Physics Department, California State Polytechnic University, Pomona, CA, ANNA ZELAYA, Biological Sciences Department, California State Polytechnic University, Pomona, CA, GRACIELA BRELLES-MARINO, Biological Sciences Department, California State Polytechnic University, Pomona, CA and CINDEFI, Universidad Nacional de La Plata, Argentina — We present investigations of bacterial biofilms before and after treatment with gas discharge plasmas. Gas discharge plasmas represent a way to inactivate bacteria under conditions where conventional disinfection methods are often ineffective. These conditions involve biofilm communities, where bacteria grow embedded in an exopolysaccharide matrix, and cooperative interactions between cells make organisms less susceptible to standard inactivation methods. In this study, biofilms formed by the opportunistic bacterium *Pseudomonas aeruginosa* were imaged before and after plasma treatment using an atomic force microscope (AFM). Through AFM images and micromechanical measurements we observed bacterial morphological damage and reduced AFM tip-sample surface adhesion following plasma treatment.

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