

Abstract Submitted
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Cold Atmospheric-Pressure Plasmas Applied to Active Packaging of Fruits and Vegetables¹ PATRICK PEDROW², SULMER FERNANDEZ³, MARVIN PITTS⁴, Washington State University — Active packaging of fruits and vegetables uses films that absorb molecules from or contribute molecules to the produce. Applying uniform film to specific parts of a plant will enhance safe and economic adoption of expensive biofilms and biochemicals which would damage the plant or surrounding environment if misapplied. The pilot application will be to apply wax film to apples, replacing hot wax which is expensive and lowers the textural quality of the apple. The plasma zone will be obtained by increasing the voltage on an electrode structure until the electric field in the feed material (Argon + monomer) is sufficiently high to yield electron avalanches. The “corona onset criterion” is used to design the cold plasma reactor. The apple will be placed in a treatment chamber downstream from the activation zone. Key physical properties of the film will be measured. The deposition rate will be optimized in terms of economics and fruit surface quality for the purpose of determining if the technique is competitive in food processing plants.

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