



Southern Illinois University System

### Applications

- Biosensors
- Simulation of pathogen contamination
- Food safety

### Inventors

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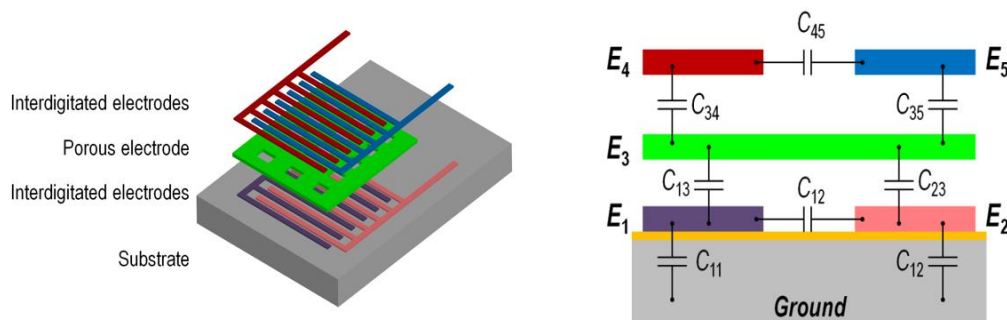
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## Pathogen Transport Modelled Biomimetic Sensor, Sensing Method and Produce Sanitation

Contamination of fresh produce with foodborne pathogens carries significant public health risks. A particular problem involves propagation of pathogens below the outer surface of produce. Studies have shown that pathogens often propagate inside the pores and channels of the produce forming a polymeric substance which holds the cell colony together and is known as biofilm. Due to the biofilm, the microorganisms cannot be easily removed through proper sanitation which leads to infectious outbreaks. Traditional analysis techniques are limited in their ability to address the problem as they often requires complex modeling and observation.

### Invention

SIU researchers have developed a biomimetic sensor that models the physiochemical properties of the surface and subsurface of fresh produce. The sensor includes spaced-apart layers of electrodes that are dimensioned and patterned to model the transport of pathogens from the outer surface to the subsurface below. The sensor can be used to detect and model the development of pathogens and biofilms below the outer surface of a particular produce.



### Key Advantages

- Allows real-time simulation of pathogen propagation
- No complex modeling procedures required
- Highly customizable to different pathogens and produce

### Status

U.S. patent application #16/823,809 was filed on March 19, 2020. The technology is available for license.

*Other opportunities related to this technology, included but not limited to sponsored and/or collaborative research, may be available. Please reach out to the designated contact identified at left for more information.*

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