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## PRESS RELEASE

### Smart materials detect meat contamination before it hits shelves

August, 20, 2014

Edmonton—Have you ever worried about getting Salmonella or E. Coli poisoning from meat?

Anastasia Elias and Dominic Sauvageau, professors in the Department of Chemical and Materials Engineering at the University of Alberta are developing smart materials to detect harmful microbes that cause food-borne illnesses before products reach consumers.

“Agriculture and food production is the second-largest industrial sector in Alberta and our smart materials will increase food safety and save time and money when testing for spoilage,” Elias said.

There are many stages of food processing from the packaging facility, to transport to stores, to the consumers’ refrigerators where contaminants can affect products such as meat. The new smart materials for food packaging will increase the safety in food production.

The project involves the development and combination of three technologies: the stimuli-responsive polymer (i.e. material), biological detection system, and food microbiology. For the past two years, the research team has been programming the material to respond to the presence pathogenic bacteria such as E. coli, Salmonella, and Listeria and to changes in temperature. The material responds by changing colour from blue to white, or from clear to cloudy.

“A lot of the time, there is a reaction only after an outbreak occurs and this puts the public in some danger. These smart materials add another layer of safety because they could detect a problem before the product reaches the consumer,” Sauvageau said.

The six-person research team, supported by funding from the Alberta Meat and Livestock Agency. The researchers are working with industry to determine how to design the materials for ease of use while maintaining visual appeal to consumers. The technology is currently awaiting patent approval and their report is awaiting acceptance in a scientific journal.

“These smart labels have the potential to become an industry standard for food safety,” Elias said.

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