



Analytical Chemistry Seminar

Tuesday, January 18, 2022

3:30 PM, WTHR 320

“Nanomaterial-based Microfluidic Platforms for On-Site Detection of Foodborne Bacteria”



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Abstract

Food safety is a major concern for public health. According to the World Health Organization (WHO), nearly ten percent of the global population gets sick from contaminated food each year.¹ Foodborne illnesses can be caused by many different contaminations: heavy metals, harmful chemicals, parasites, fungi, and viruses. However, the most common foodborne illnesses are caused by bacteria.¹ Traditional bacteria contamination detection methods are problematic and time-consuming due to complex operation and/or expensive equipment. A rapid and sensitive detection method for early determination of bacterial contamination is urgently needed. A microfluidic chip offers several advantages; including, miniaturization, high throughput, low sample consumption, cost effectiveness, as well as the potential for rapid, on-site detection. This presentation will discuss the mechanisms for detection utilizing nanomaterial-based microfluidic chips and the specific application of these mechanisms for detecting common bacteria in food.

References

1. S.V. Bhaskar, Chapter 1 - Foodborne diseases—disease burden, in: R.K. Gupta, Dudeja, M. Singh (Editors), Food Safety in the 21st Century, Academic Press, San Diego, 2017, pp. 1-10.

Seminar Time shared with Sanjay Iyer