Contribution ID: **245**   Type: **Invited Speaker**

Highly Sensitive Nucleic Acid and Antibody Based Electrochemical Detection by Using of Nanomaterials as Signal Amplification Elements

Monday 28 November 2016 11:15 (20 minutes)

Highly sensitive detection is a major goal for sensing and/or diagnosis of diseases, food-borne bacteria and biological warfare agents. High specific and sensitive detections can be achieved via labeling techniques in DNA hybridization and antibody-antigen interaction. Labels based on nanoscale materials open a new opportunity over the traditional methods - in terms of greater reporting signal per binding event. We have been able to lower the limit of detection (LOD) of < 1 fM for DNA and < 1 fg mL-1 for antigens or < 5 CFU mL-1, without using PCR or other methods of non-electrochemical amplification. In addition, some possibilities on high-throughput simultaneous assays have been attempted and reported. The talk will describe some our approaches engineered electrochemical labels using nanomaterials such as carbon nanotubes, graphene, and metal nanoparticles. Last, the talk will also present some real food pathogen applications.

Author: SURAREUNGCHAI, Werasak (-)

Presenter: SURAREUNGCHAI, Werasak (-)

Session Classification: Heron 2

Track Classification: Nano-medicine & biotechnology