Detection of environmental pollutants and food contaminants are of utmost importance in the ever changing global landscape. With a rapidly changing global environment, the evolution of techniques and methodologies has to keep pace with advancement in technology. Electrochemistry provides a useful methodology in sensing and biosensing applications. The versatility of electrochemical techniques, coupled with emerging new materials and technology, has enabled numerous new approaches in the development of sensing devices. We have demonstrated the use of layered materials as an alternative platform to allow for sensitive detection of mycotoxins and pesticides in various sensors applications. The use of impact electrochemistry provides a new paradigm on detection methodologies of well-defined nanoparticles and liposomes. Lastly, the incorporation of 3D printing technology allows for the fabrication of customizable electrochemical devices which allows for complex applications with good performance. The proof-of-concept applications open up limitless possibilities for the potential advancements in the use of nanomaterials and emerging technology for electrochemical sensing applications.

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Venue: SPMS-LT5, SPMS Level 3
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