

Research project and supervisory team

Supervisory Team	Enrico Marsili Sze Shin Low Sandy Hwei San Loh Michelle Tien Tien Tan
Short introduction & description of research project	<p>Project title: <i>Biosensor as Smart Food Packaging Material in the Smart Food Traceability System</i></p> <p>Food insecurity and a large amount of food's carbon print have been the most significant concern in food systems over decades. The Food and Agricultural Organization (FAO) has reported that one in three people had insufficient access to adequate food, with the prevalence of people out of reach from healthy diets increasing. In order to address the current problems (food security and sustainability), the concept of "smart food" has been introduced. Smart food is food that fulfil all criteria of being nutritious and safe; good for the environment and sustainable; high yield and resilience.</p> <p>Food system includes all aspects of producing and delivering of food, and smart food systems with minimal generation of food loss and food waste are critical to resolving food security, poverty alleviation, and adequate nutrition. Such systems play an important role in building resilience in communities responding to a rapidly changing global environment, satisfying the demand of growing population with nutritious food and providing livelihoods. While food safety and authentication analysis are mainly done during production and processing, smart food packaging further shows great potency to overcome this problem in food traceability systems. As an active and intelligent system, smart food packaging enables manufacturers and consumers to trace the product's conditions during storage and distribution while extending and maintaining the shelf-life and quality of the food.</p> <p>This project aims to present a biosensor incorporated with nanomaterial for the fabrication of nanosensor to be applied as smart food packaging material. Nanomaterials have been explored for their great antimicrobial, mechanical, optical, and thermal properties to indicate freshness, the period for safe consumption, storage temperature, etc., of food. Many significant advancements in biosensors and nanomaterials in the scientific basis for active and intelligent food packaging have been explored, yet several challenges hindered their application in the industrial community. Further research should be carried out to develop</p>

	nanomaterial-based biosensor as smart food packaging material for food safety monitoring and long term preservation.
Contact points	Dr. Sze Shin Low Sze-Shin.Low@nottingham.edu.cn