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Intelligent Food Packaging; Bacteriophage Biocontrol; Nano-enabled Preservation Materials; Postharvest Quality and Food Safety; Multimodal Artificial Intelligence

My research focuses on intelligent food preservation systems through the integration of nano-enabled packaging materials, bacteriophage-based biocontrol strategies, and artificial intelligence. I aim to enhance postharvest quality retention and food safety by linking material design and phage-enabled microbial control with predictive modelling of food quality changes. This work combines food science, materials engineering, microbiology, and data-driven optimisation to improve the sustainability and safety of fresh food supply chains.

Potential Areas for Collaboration

- Phage-based Microbial Control
 - AI-driven Optimisation of Food Packaging and Preservation
 - Smart Sensing and Non-destructive Quality Monitoring
 - Sustainable Bio-based Preservation Materials
 - Translational Validation in Real Food Supply Chains
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