



Solutions for Active and Intelligent Packaging for Fruits and Vegetables

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Challenge Owner: Anonymous

Business Opportunity: Licensing, product acquisition, contract research, proof of concept leading to scale-up to manufacturing, joint development, supplier agreement

Technology Maturity: Concepts, prototypes, ready to commercialise

Delivery Timelines:

Phase 1 – Proof of concept – 6 months

Phase 2 – Design refinement – 6 months

Phase 3 – Scale up to commercialisation – 12 months

Reward: Commensurate with proposed activity, according to sponsor's normal funding requirements

Challenge Statement

The Innovation Hub Open Innovation Solution Exchange on behalf of a large South African company invites proposals for providing 'active' or 'intelligent' functionality for packaging papers. 'Active' refers to adding functionality to the packaging such as anti-microbial properties whereas 'intelligent' refers to a reaction to a stimulus such as a colour change when reaching a threshold. An example of this could be a paper cup turning red when it is filled with a hot liquid.

Background

The ability to ship fresh produce long distances has made a wide variety of fruits and vegetables available to global markets. However, ensuring that produce arrives on store shelves at peak flavour and freshness can be a challenge. Produce shipments that are delayed or experience temperature extremes during transit can result in spoiled or over ripe fruits and vegetables that increase costs and decrease consumer satisfaction. Packaging that tracks temperature and ripeness or controls the rate of ripening offers an ideal solution to this problem. The goal of this challenge is to find "intelligent" and/or "active" packaging technology that can be used to track and control the quality of fresh fruits and vegetables during shipment and on store shelves.



Key Specifications

The successful technology must be:

- Safe for contact with food (GRAS and/or FDA / EFSA compliant)
- Compatible with paper and plastic packaging
- Compatible with a variety of fruits and vegetables
- Accurate and effective:
 - Up to 7 days (short storage) or up to 60 days (long storage) from the date of packaging
 - From 5°C to 70°C (41-158°F)
- Clearly indicates changes (intelligent pkg.)
- Low cost
- Ready to use or require only short-term development

Solutions not of Interest

The following methods are not of interest:

- UV treatment
- Titanium dioxide (TiO₂)
- Sulfur dioxide (SO₂)
- Any treatment or device that damages fruits or vegetables, or that is unsafe for contact with food
- Any solution that requires long-term development

Project Approach and Deliverables

- Phase 1 – Proof of concept – Examine and test initial prototypes and make a plan for improvements if necessary
- Phase 2 – Design refinement – Develop final design
- Phase 3 – Scale-up to commercialisation – Develop a plan to scale-up and commercialise the new design

Evaluation Criteria

- Overall scientific and technical merit of the proposed approach
- Approach to proof of concept or performance
- Potential for proprietary position (i.e., is the technology novel or protectable)
- Economic potential of concept
- Respondent's capabilities and related experience
- Realism of the proposed plan and cost estimates

TO RESPOND TO THIS CHALLENGE PLEASE COMPLETE THE RESPONSE TEMPLATE AT
www.exchange.theinnovationhub.com

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By submitting a response you represent that the response does not and will not be deemed to contain any confidential information of any kind whatsoever. TIHMC and its project partners will not be held liable for loss of any IP. You also acknowledge that the Challenge owner, TIHMC and its project partners reserve the sole and absolute right and discretion to act upon all, some, or none of the responses received for this challenge.
