



COST Action FP1405

Active and intelligent fibre-based packaging –
innovation and market introduction

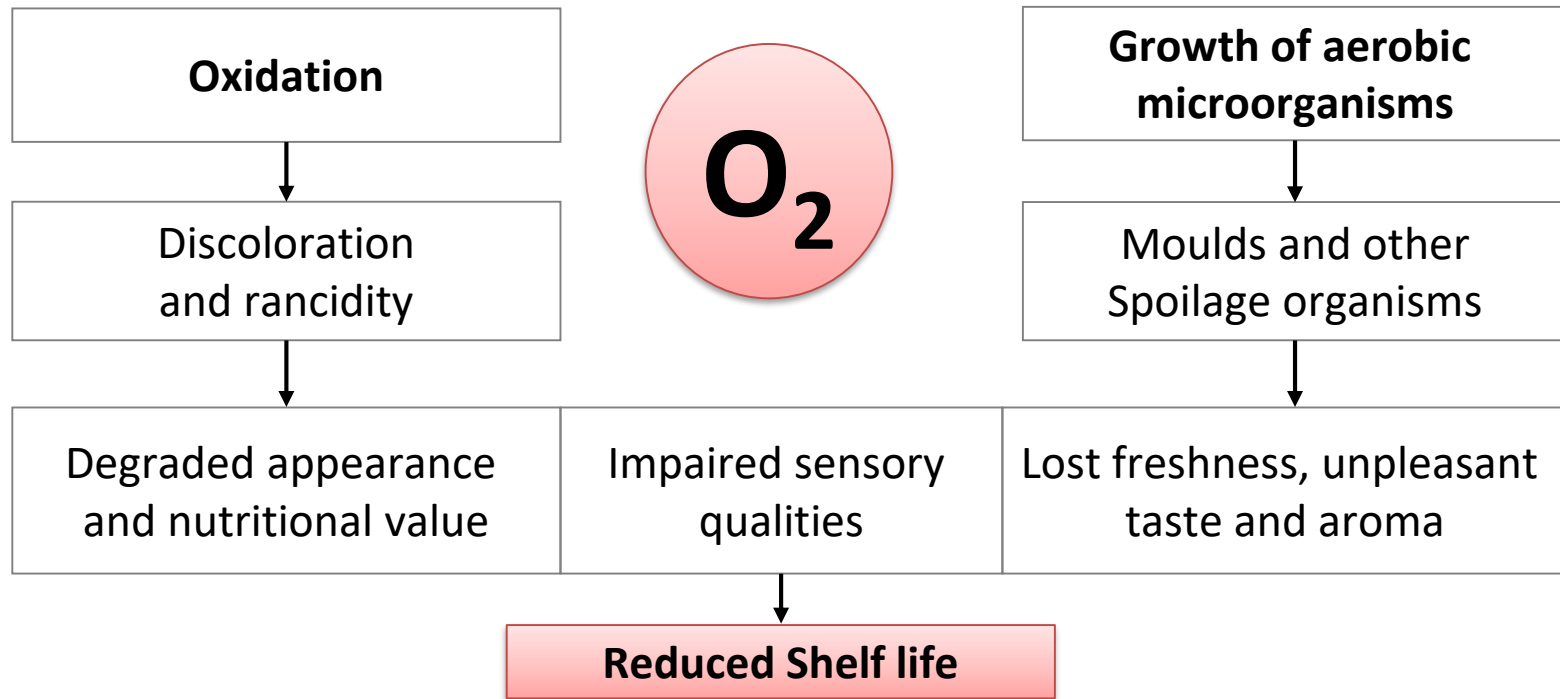
OXYGEN SCAVENGING “ACTIVE LABEL”

Bettina Röcker, Nadine Rüegg, Prof. Dr. Selçuk Yildirim



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Institute of Food and Beverage Innovation
Food Packaging Research Group

INTRODUCTION – OXYGEN SCAVENGER



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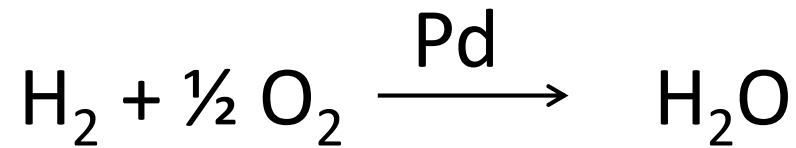
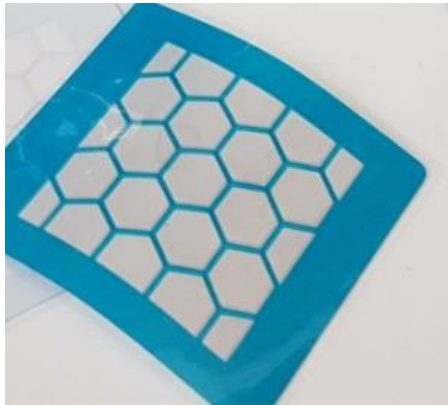


Challenge:


- Despite modified atmosphere packaging (MAP) or gas flushing
- Up to 0.5-5 % residual oxygen
- Negative effect on food quality and shelf life



OXYGEN SCAVENGING «ACTIVE LABEL»



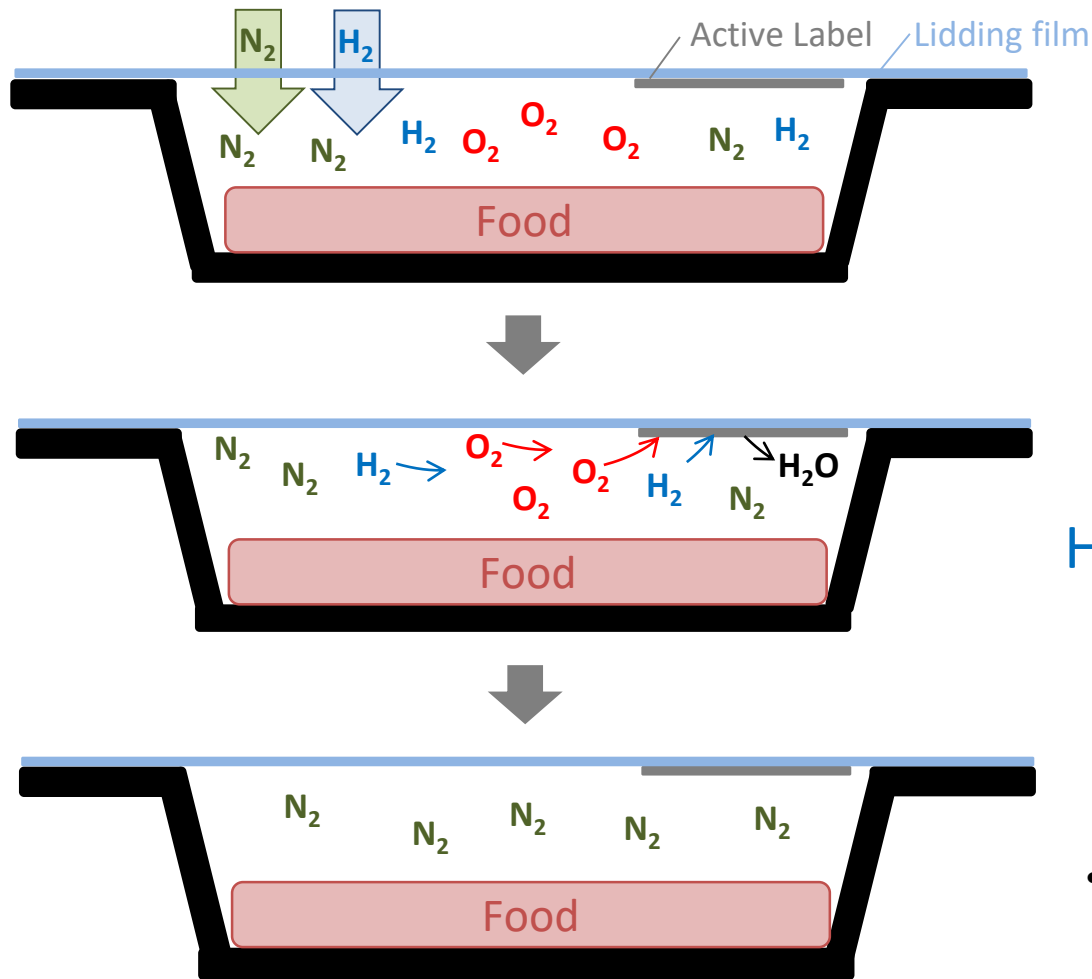
   **CTI** – Start-up and entrepreneurship,
R&D Funding, KTT-Support

 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

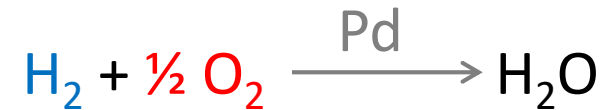
Förderagentur für Innovation KTI



FUNCTIONAL PRINCIPLE «ACTIVE LABEL»



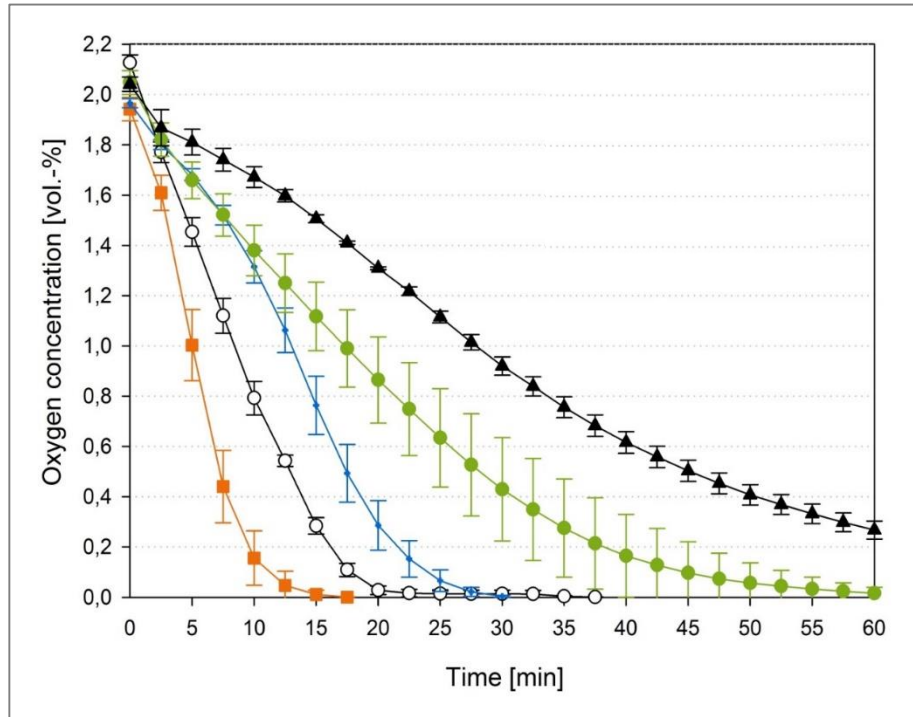
- MAP standard procedure
- Application «Active Label»
- Condition:
 H_2 in MAP included



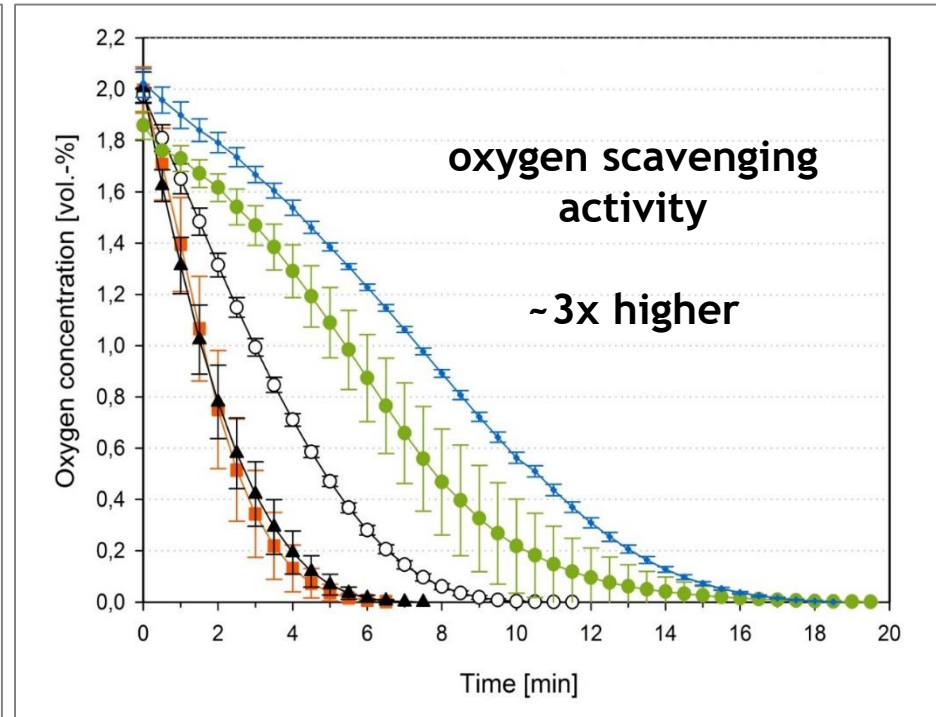
- Limitation «Active Label»:
Max. 2.5% residual O_2

DEVELOPMENT "ACTIVE LABEL"

Pd-coating on different substrates



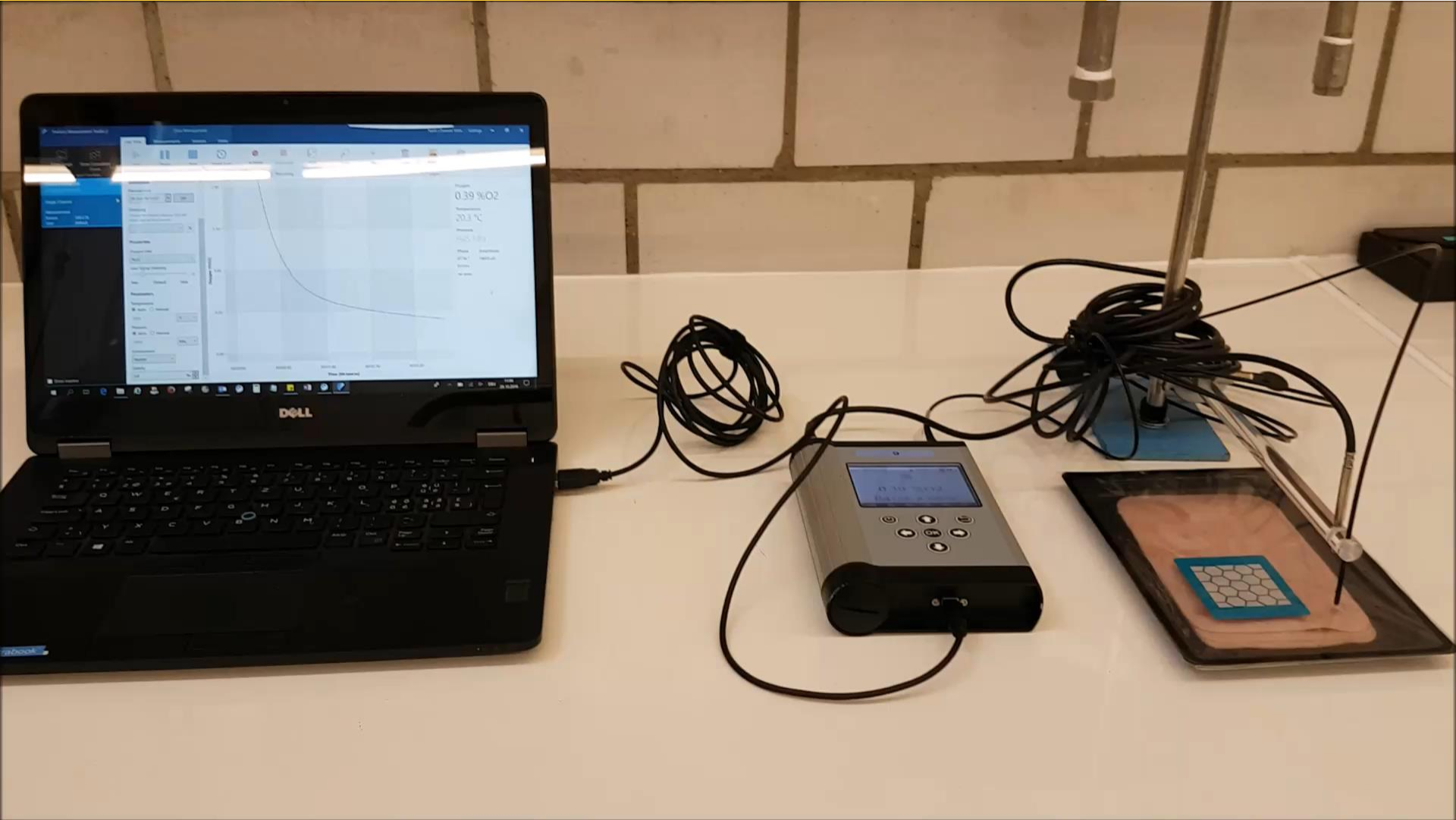
SiO_x/Pd-coating on the same substrates



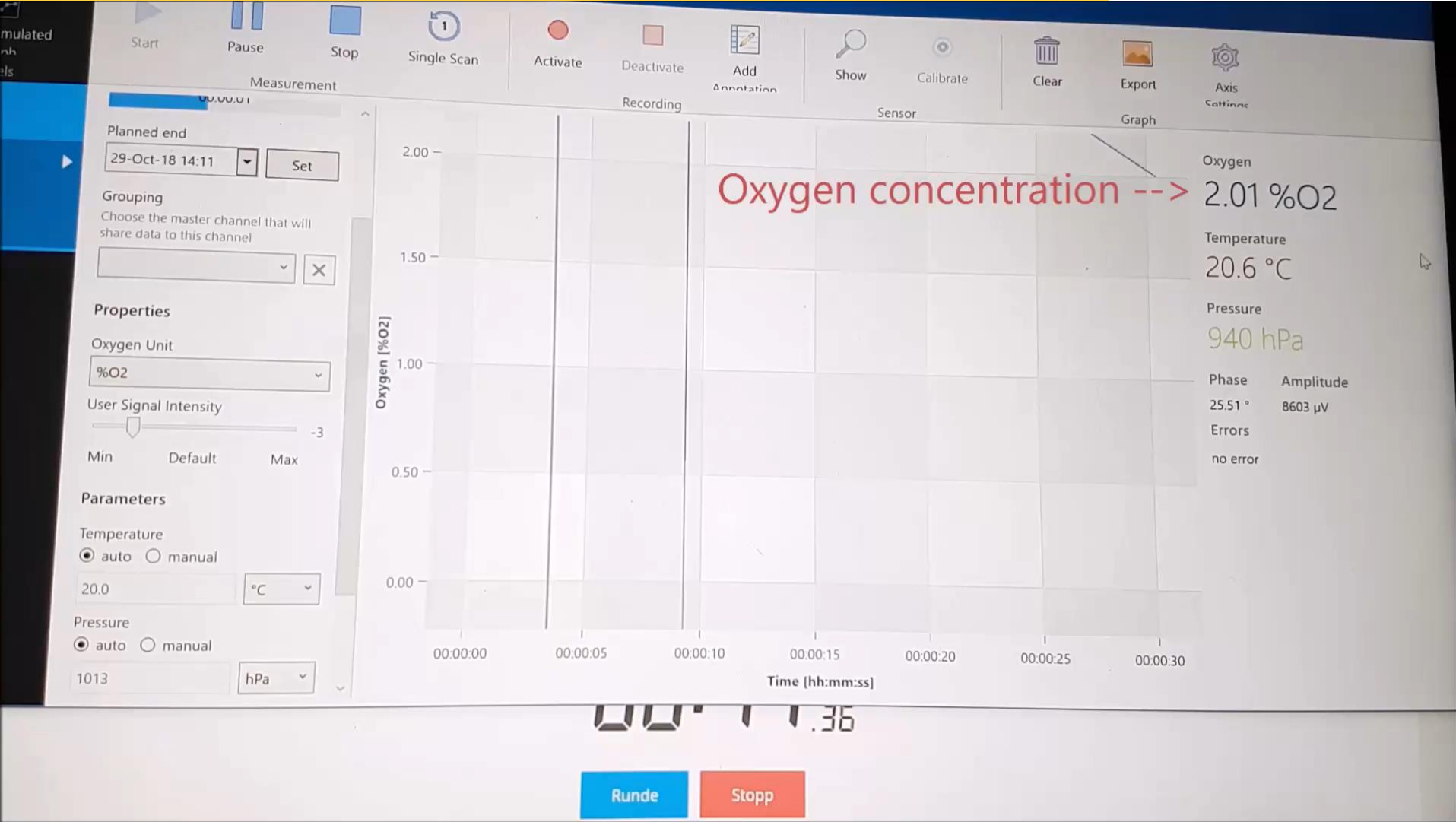
"ACTIVE LABEL" PROTOTYPE



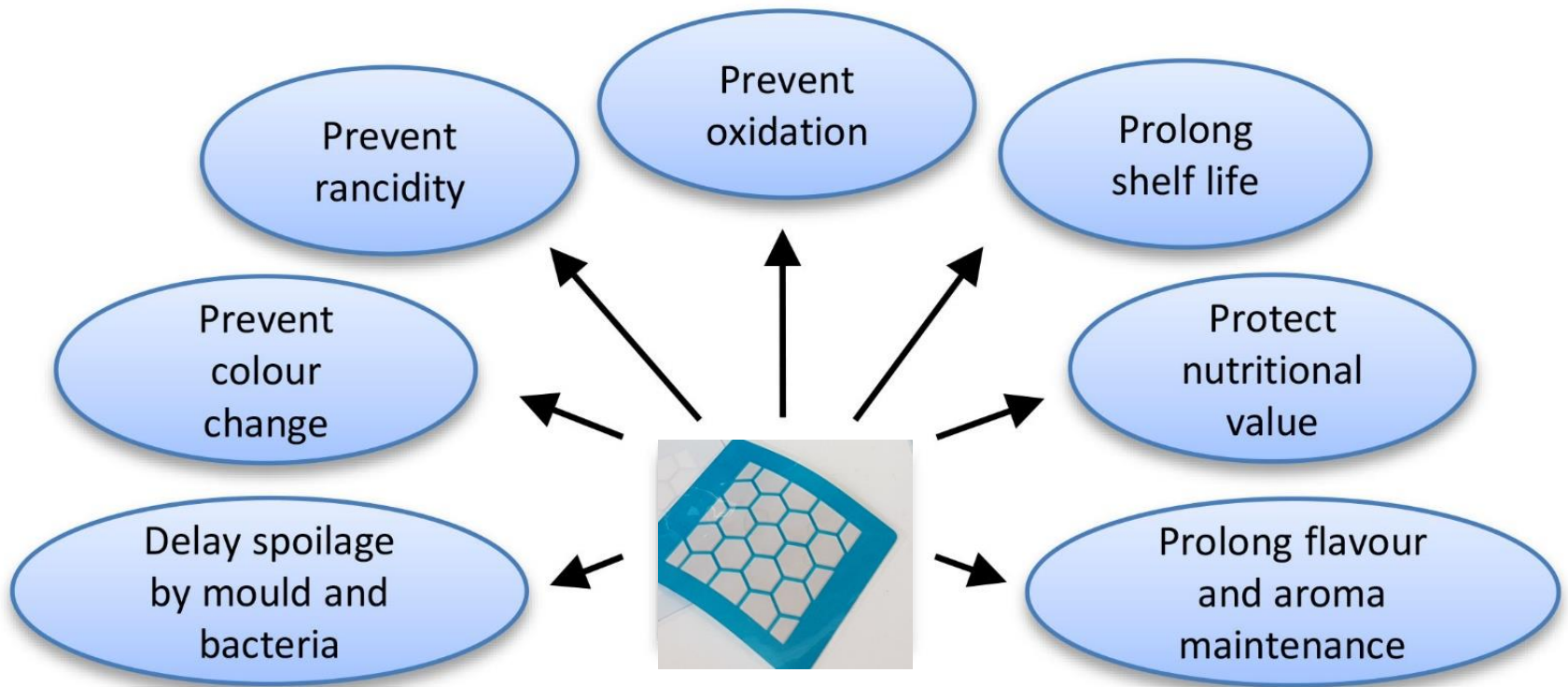
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BENEFITS «ACTIVE LABEL»



PUBLICATIONS "ACTIVE LABEL"

Technical Development of "ACTIVE LABEL"

Packaging Technology and Science
An International Journal

PACKAGING TECHNOLOGY AND SCIENCE
Packag. Technol. Sci. 2015; **28**: 710–718
Published online 1 June 2015 in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/pts.2134

PAPER PRESENTED AT 2015 IAPRI SYMPOSIUM

Development of Palladium-based Oxygen Scavenger: Optimization of Substrate and Palladium Layer Thickness

By Selçuk Yildirim,^{1*} Bettina Röcker,¹ Nadine Rüegg¹ and Wolfgang Lohwasser²

Packaging Technology and Science
An International Journal

PACKAGING TECHNOLOGY AND SCIENCE
Packag. Technol. Sci. 2017; **30**: 427–442
Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/pts.2220

PAPER SUBMITTED TO IAPRI PEER REVIEW STREAM

Inactivation of Palladium-based Oxygen Scavenger System by Volatile Sulfur Compounds Present in the Headspace of Packaged Food

By Bettina Röcker,¹ Nadine Rüegg,¹ Alexia N. Glöss,² Chahan Yeretzian² and Selçuk Yildirim^{1*}

Food Application of "ACTIVE LABEL"

Food Packaging and Shelf Life 8 (2016) 56–62

Contents lists available at ScienceDirect

Food Packaging and Shelf Life

journal homepage: <http://www.elsevier.com/locate/fpsl>

Use of palladium based oxygen scavenger to prevent discoloration of ham

Simon Hutter, Nadine Rüegg, Selçuk Yildirim*



To be submitted:

Application of palladium-based oxygen scavenger to extend the mould-free shelf life of bakery products

Nadine Rüegg, Bettina Röcker, Selçuk Yildirim*

An aerial photograph of a town and vineyard in autumn. The foreground shows a large vineyard with rows of grapevines, some of which are covered in brown autumn leaves. To the left, there are several large greenhouses with translucent roofs. The middle ground features a residential area with houses and buildings, interspersed with trees showing vibrant autumn colors. In the background, a large body of water (a lake or bay) is visible, surrounded by hills and a town built on a peninsula. The sky is clear and blue.

Thank you for your attention

Bettina Röcker, Nadine Rüegg, Prof. Dr. Selçuk Yildirim