



University of Pécs
1367



SMART LIGHT

Smart light-dose indicator for wine (& food)

CHALLENGE

Many food and beverage products are highly sensitive to UV-A and blue light, including white wines, rosé wines, sparkling wines, beers, dairy products, soft drinks, vegetable oils, smoothies, and other packaged foods. Throughout the supply chain, warehouse storage, and retail shelf display, harmful light exposure can lead to product quality deterioration.

SOLUTION

SMART LIGHT is based on a specially formulated photo-responsive dye that can be printed directly onto labels or packaging surfaces. The dye gradually changes color according to the cumulative light dose received by the product, providing a visual indication of product status.

INVESTMENT HOOK

Global wine production is approximately 16 billion bottles annually, of which around 9.2 billion bottles belong to light-sensitive categories. An estimated 224 million bottles per year suffer light-induced quality deterioration, representing a hidden global loss of approximately USD 0.7-2.2 billion annually.

WE ARE SEEKING FOR

Strategic partners: Label printing companies / Packaging technology partners/Wineries and beverage producers / Retail chains interested in pilot programs / Early-stage investors and commercialization partners.



THE TEAM

Dr. Zsófia Laposa
Researcher, Inventor,
Technology Lead

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Research Partner, Inventor

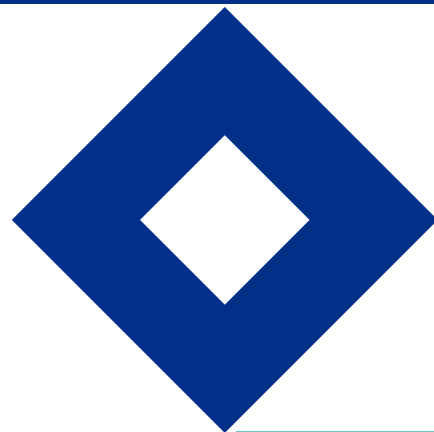


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Wine bottle type	Illumination	Shelf life (days)
Clear Bordeaux (flint)	sunlight	0
	CFL strong ¹	0.3
	CFL weak ²	1.5
Bluish-green Alsace	sunlight	0.1
	CFL strong ¹	2.4
	CFL weak ²	12.1
Light amber Burgundy	sunlight	0.2
	CFL strong ¹	6.6
	CFL weak ²	33.0
Dark amber Alsace	sunlight	3.8
	CFL strong ¹	147
	CFL weak ²	734

How long does the wine last on the shelf?



TRL 4-5

Passive technology:
no electronics, no
battery, no scanner
– just dye

Patent-backed
technology
platform.

Pilot project with
wine producer
and

Extendable to
additional food
categories

Optimized and
validated for
wine applications