



COST FP1405 ActInPak

Introduction to the network

- Sanne Tiekstra, Chair

COST FP1405

ACTIVE AND INTELLIGENT FIBRE-BASED PACKAGING – INNOVATION AND MARKET INTRODUCTION

6 April 2016, Munich

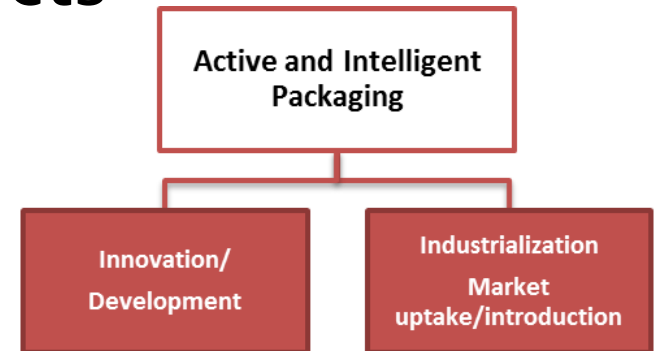


COST is supported by
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Horizon 2020

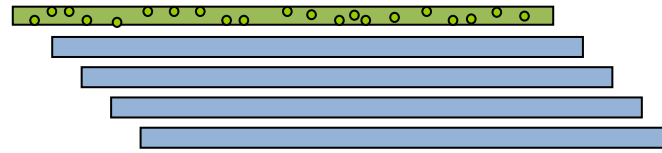
ACTINPAK IS:

A pan European network of leading experts of **over 100 institutes, universities, companies** from **34 countries** with **one goal: to define innovative solutions and identify opportunities and obstacles** in market introduction for active and intelligent packaging in the area of fibre-based products

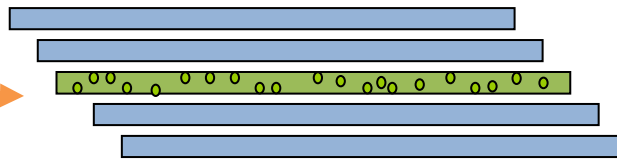
March 2015 – April 2019



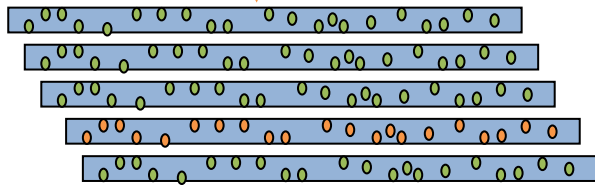
WE HAVE A DREAM...



Separate active/intelligent top layer by lamination, coating, sizepress, or printing



Separate active/intelligent layer(s) by lamination



Active/intelligent components added to pulp, so incorporated in structure

> 20 YEARS OF R&D...



NewGenPak

TOXDTECT



SusFoFlex



BIOACTIVELAYER



acticospack

FLHEF



FRESHFILM

ECOBIOCAP



hortibiQpack



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...IN ACTIVE PACKAGING

Manufacturer	Country	Function
Mitsubishi Gas Chemical Company	Japan	
Toppan Printing Co.	Japan	
Keplon Co.	Japan	
Oji Kako Co.	Japan	
Powdertec	Japan	
Ueno Seiyaku Co.	Japan	
Dai Nippon	Japan	
Bioka Ltd	Finland	
Standa Atco	France	
Multisorb Technologies Inc.	USA	
Johnson Matthey Plc	UK	

	Format	Tradename	Manufacturer	Country	
Oxygen scavenger	Film	Multi layer	Bioka®	Bioka Ltd	
		Laminate	OS2000®	Sealed Air Corporation	
		Multilayer	ZERO2™	CSIRO and VisyPak	
	Concentrate	Multilayer		Shelfplus	Ciba Specialty chemicals
				Amosorb®	Amoco Chemical
Closure Liner	Multilayer		Oxyguard™	Toyo Seikan Kaisha Ltd.	
			Celox™	Grace Darex Packaging Technologies	
Antimicrobial	Concentrate	Multilayer		Daraforms 649C	Grace Darex Packaging Technologies
				Zeomic®	Sinanen Zeomic Co. Ltd.
				Agion	Agion Technologies
	Extract	Film		MicroFree™	E. I. du Pont de Nemours and Company
				Microban®	Microban Products
	Film	Extract		Citrex™	Quimica Natural Brasileira
				Nisaplin®	Integrated Ingredients
			MicroGard™	Rhone-Poulenc	
			Piatech	Daikoku Kasei Co.	

Table 1-I.4. Current active packaging commercialized

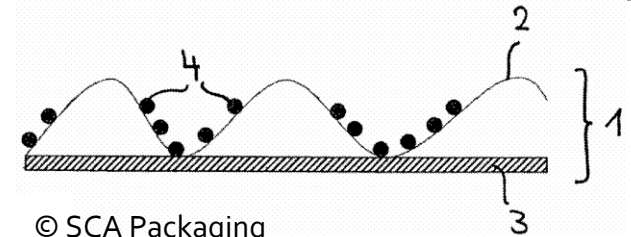
packaging material.

Table 7.2 Examples of Commercial Antimicrobial Packaging Products and Manufacturers

Trade Name	Active Compounds	Manufacturer	Refs.
Platsch	Silver oxide	Daikoku Kasei Co. (Japan)	Brody et al. (2001)
Silvi Film	Silver oxide	Nimiko Co. (Japan)	Brody et al. (2001)
Okamoto Super Wrap	Silver oxide	Okamoto Industries, Inc. (Japan)	Brody et al. (2001)
Apacider	Silver zeolite	Sangli Co. (Japan)	Brody et al. (2001)
Zeomic	Silver zeolite	Shinane New Ceramics Co. (Japan)	Brody et al. (2001)
Bactekiller	Silver zeolite	Kanebo Co. (Japan)	Brody et al. (2001)
Cleanaid	Silver zeolite	Gyunggyang Ind. Co. (Korea)	Brody et al. (2001)
AgION	Silver	AgION Technologies LLC (USA)	Cho et al. (2009)
MicroFree	Silver, copper oxide, zinc silicate	DuPont (USA)	Suppakul et al. (2003a), www.agion-tech.com
Novaron	Silver	Milliken Co. (USA)	Vermeiren et al. (2002), Brody et al. (2001)
Surfacine	zirconium phosphate	Surfacine Development Co. (USA)	Vermeiren et al. (2002)
Ionpure	Silver halide	Ishizuka Glass Co. (Japan)	Vermeiren et al. (2002)
Microban	Silver/glass	Microban Products Co. (USA)	Vermeiren et al. (2002)
Sanitized, Actigard, Saniprot, Ultra-Fresh	Triclosan and others	Sanitized AG/Clariant (Switzerland)	Brody et al. (2001)
WasaCuro	Triclosan and others	Thomson Research Assoc. (Canada)	Vermeiren et al. (2002), Suppakul et al. (2003a)
Wasa Power	Alyl isothiocyanate	Green Cross Co. (Japan)	Vermeiren et al. (2002)
MicroGarde	Alyl isothiocyanate	Sekisui Plastic Co. (Japan)	Brody et al. (2001)
Take Guard	Clove and others	Rhone-Poulenc (USA)	Cho et al. (2009)
Acticap	Bamboo extract	Takex Co. (Japan)	Brody et al. (2001)
Ageless SE	Ethanol	Freund Industrial Co. (Japan)	Brody et al. (2001)
BioCleanact	Silver	Mitsubishi Gas Chem. (Japan)	Smith et al. (1987)
Microatmosphere	Antibiotics	Micro Science Tech Co. (Korea)	Cho et al. (2009)
Grape Guard	Chlorine dioxide	Southwest Research Institute (USA), Bernard Technologies Inc. (USA)	Han and Moon (2002)
Uvasy	Sulfur dioxide	Quimica Osku S.A. (Chile)	Brody et al. (2001)
	Sulfur dioxide	Grapetek (S. Africa)	Scully and Horsham (2007), Scully and Horsham (2007)

Source: Dr. Nathalie Lavoine

...IN ACTIVE PACKAGING



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... AND PRINTED INTELLIGENCE



HAS LED TO 1 CONSUMER PRODUCT?*



Testimonials

"The Miracle Paper"
THE WASHINGTON POST

"Ingenious"
THE NEW YORK TIMES

"The best *non-diet* diet tip we've ever heard"

OPRAH MAGAZINE

"We tried it, & it works!"
PREVENTION MAGAZINE



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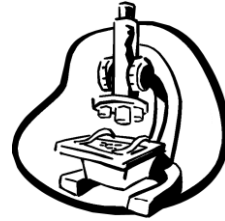
* At the time of the proposal

WHY THIS ACTION?



1. Most developments are plastic based.
Development of integration into paper based products.
2. So many examples, but so little evidence of successful (B2C) market introduction in Europe.
Why?

IMPORTANCE OF THIS ACTION



Money

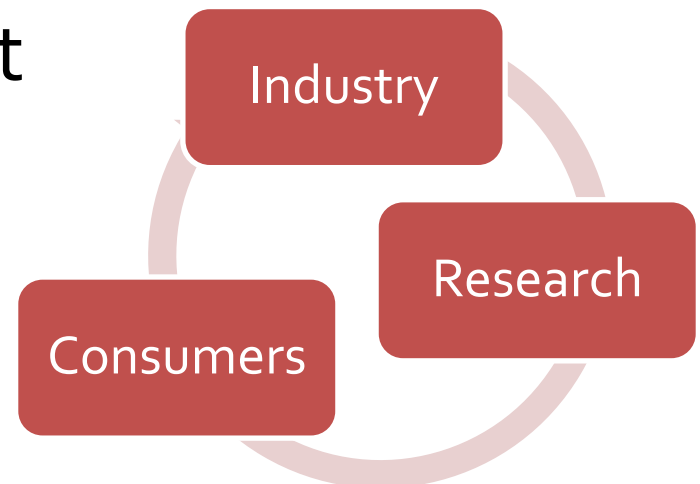


Knowledge



OUR ACTIVITIES

The main objective of the Action is to develop a **knowledge-based network** on sustainable, active and intelligent fibre-based packaging in order to **overcome current technological, industrial, and social limitations** that hinder the wide deployment of existing and newly developed solutions in market applications.



IMPLEMENTATION OF KNOWLEDGE

uncertainty

clearness/focus



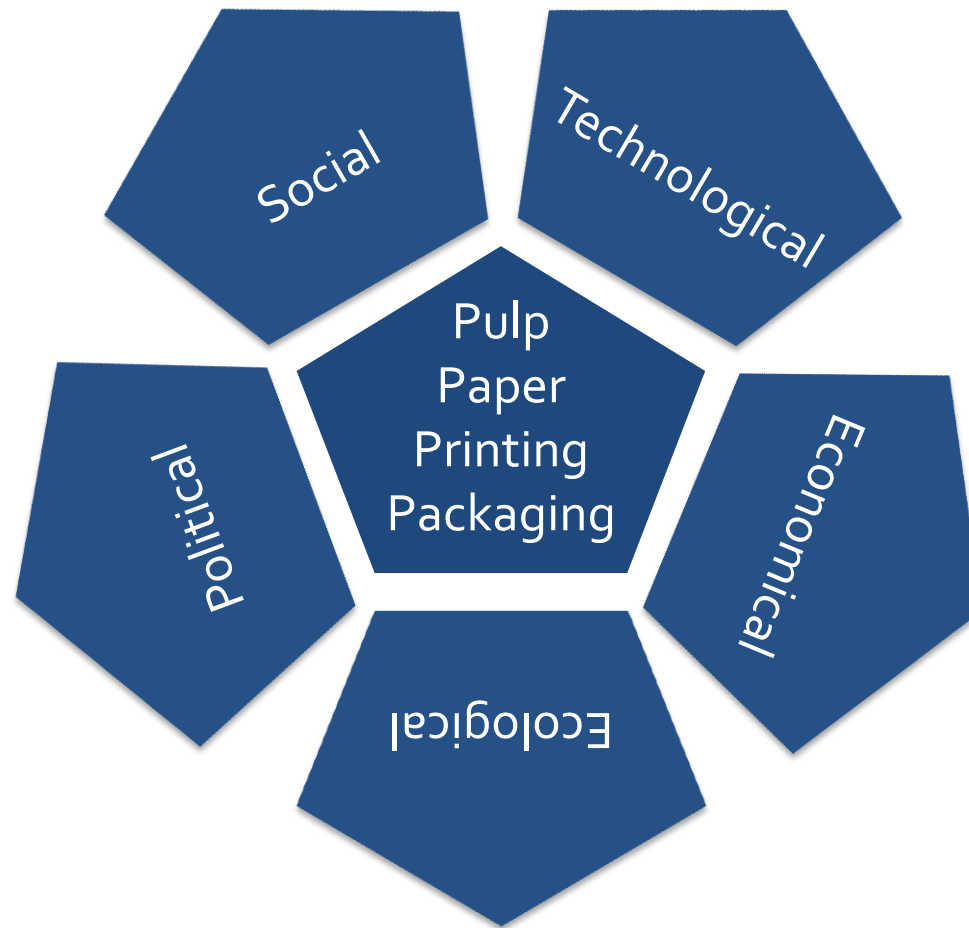
**investigate &
understand**

**design (business model)
concepts**

**implement
(business model)**

SUCCESSFUL INDUSTRIAL INCORPORATION

depends on several factors:



SECONDARY OBJECTIVES

- **Direct future innovations** and **contribute to existing development efforts** into scientific/technical research into fibrebased materials, new additives and techniques for active and intelligent functions;
- **Identify market demands**, possibilities and **any obstacles to market introduction** of active and intelligent fibre-based packaging;
- **Identify the technical limits and opportunities** for development of active and intelligent fibre-based packaging;
- Identify market demands and **supply chain challenges** to ensure easy introduction of smart packaging;
- **Identify sustainability, health and safety issues;**
- **Disseminate knowledge** to industry and society;



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PARTICIPANTS



>200 participants
from 30 EU countries
and 7 international
partner countries



INDUSTRY VERSUS SCIENCE

Action aims at active involvement of **complete value and supply chain**

- Currently: 47 companies from 16 different countries, ranging from large to small



6 April 2016, Munich

WOULD LIKE TO PARTICIPATE?



Active participation of all partners is necessary to create a successful achievement of goals.

Industrial partners are key to the network to be able to identify the issues in market uptake.

Join us via our website:

<http://www.actinpak.eu/members/become-a-member/>

WOULD LIKE TO PARTICIPATE?



Add your product / development to our virtual showroom.

Send pictures with some info to:

s.tiekstra@bumaga.nl



CONTACT DETAILS:

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