

General goal: developing the engineering science behind responsible packaging design

recycle, reduce, reuse... in a safe way

- public interest mission,
- non-competitive sector,
- support the ecological transition and innovation,
- support future regulations

Ongoing R&D priorities

AXIS 1
FOOD GRADE RECYCLATES (recognized)



AXIS 2
AGEING OF RECYCLED, REUSABLE, COMPOSTABLE MATERIALS (to develop)



AXIS 3
HOLISTIC ENGINEERING OF FOOD PACKAGING (to federate)



Provisional action plan

<p>AXE 1 FOOD GRADE RECYCLATES</p>	<p>AXIS 2 AGEING OF RECYCLED, REUSABLE, COMPOSTABLE MATERIALS</p>	<p>AXIS 3 ENGINEERING OF PACKAGING-PRODUCT</p>
<p>Collaborative projects 2 ANR (1 in coordination), 1 agreement, 1 partnership project 4 PhDs (3 internal)+2 post-doctoral fellows</p>	<p>Coll, projects 1 ANR (+2 submissions), 1 ADEME, 1 CASDAR (to be resubmitted), 1 ACTIA, 1 Europe (to be submitted) 2 PhDs + 2 post-doctoral fellows</p>	<p>Coll, projects 1 ERASMUS+ submitted, 1 industrial consortium 1 PhD + 1 post-doctoral fellow</p>

Collaborative projects

- 1 H2020
- 1 ERASMUS+ (coord.)
- 3 ANR (1 coord.)
- 1 ADEME
- 2 Consortia (coord.)
- 2 Networks (GDR, Excel.)
- 1 ACTIA

~6 PhDs
>4 postdoctoral fellows

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UNITÉ MIXTE TECHNOLOGIQUE SAFEMAT 2.0 - ACTIA

Our approaches: an example

reconstructing transport properties from 3D resolved microstructures

How contaminants are released or cross paper and board?

How contamination spreads in dry food?

transfer by surface diffusion

transfer through the gas phase in relationship of storage/transportation conditions temperature

collecting mutual sorption/adsorption properties in function of T and RH

chemical imaging of contamination

preventing leaching of toxic substances from secondary and primary packaging

macroscopic migration

aromatics

mono-aromatics

Volume 13,700 L X 2,48 l X 34 Pallettes 1,20 x 0,80 - 26

INNOVATION ON FIBROUS MATERIALS **RISK ASSESSMENT AND MANAGEMENT** **UNDERSTANDING OF BARRIER EFFECTS**

Zoom in on phenomena, packaging and food details with simulation and chemical imaging

Cloud Computing

We need more interactive tools

The unit combines unique capabilities to understand chemical contamination at all scales and integrate them into decision support and engineering tools. All materials, contents (food and cosmetic products) and uses (contact, recycling, reuse) can be studied with our experimental and in-silico approaches.