

Process of Delamination For Recycling Multi layers complex wastes Using supercritical CO₂ technology





IDELAM Company: introduction



Creation in 2019

CNRS exclusive patent license on delamination process

Director: Eric DURIVAUT

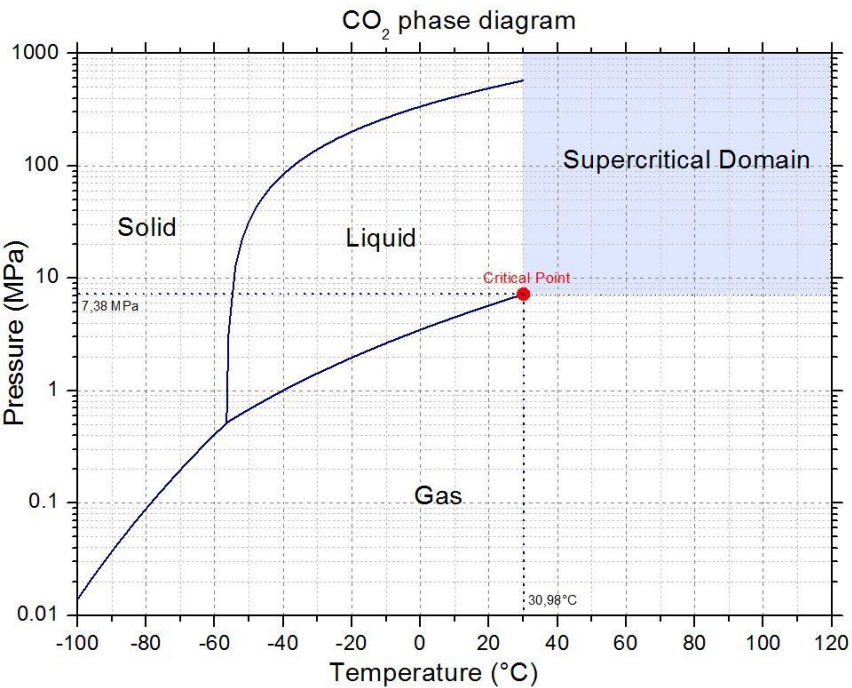
Project Manager: Thomas VOISIN

Located in Pessac, within the ICMCB laboratory





IDELAM Process: introduction



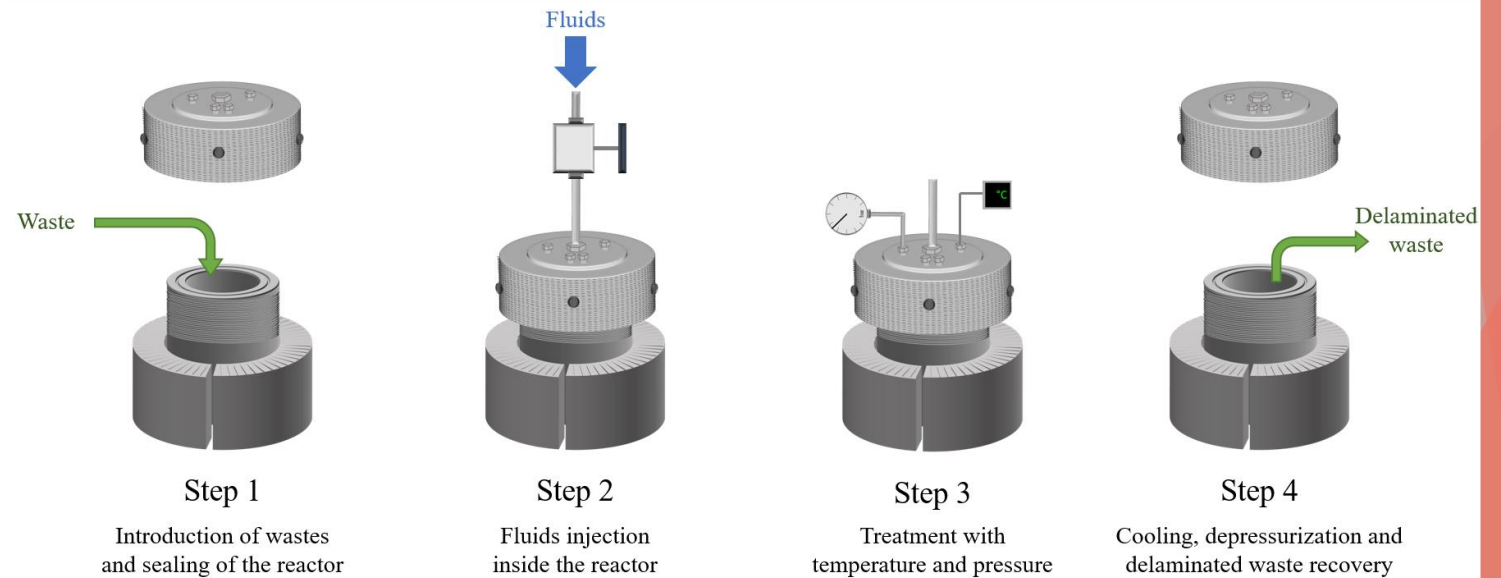
**Process preferentially targets bonding
between material interfaces**

Why use supercritical fluids ?

Mixt properties liquid/gas

- Homogeneous media
 - Excellent diffusivity and solubility
 - Soft conditions with CO₂
- ➔ Easier industrialization
- ➔ Fast process
- ➔ Non costly treatment

Delamination of complex multimaterial wastes using supercritical CO₂





IDELAM Process: Application fields

Bricks packaging

Food Packaging
&
Wrapping

Single use packaging

Soft packaging

Textile
&
Fashion

Shoes

Technical
multilayer
clothes

Leather goods
products

Bracelets &
accessories

Complex
Products

Solar panels

Pin cards

Skis

Drug
packaging



Development of the IDEAM process



TRL 9

TRL 8

TRL 7

TRL 6

TRL 5

TRL 4

TRL 3

TRL 2

TRL 1

2022

Demonstration on industrial process with semi-continuous barrel reactor

2021

Scale up of the IDEAM process based on existing supercritical industrial processes

2019-2020

Proof of concept and hundred preliminary tests (scale up testing from 3 dL to 3 L)

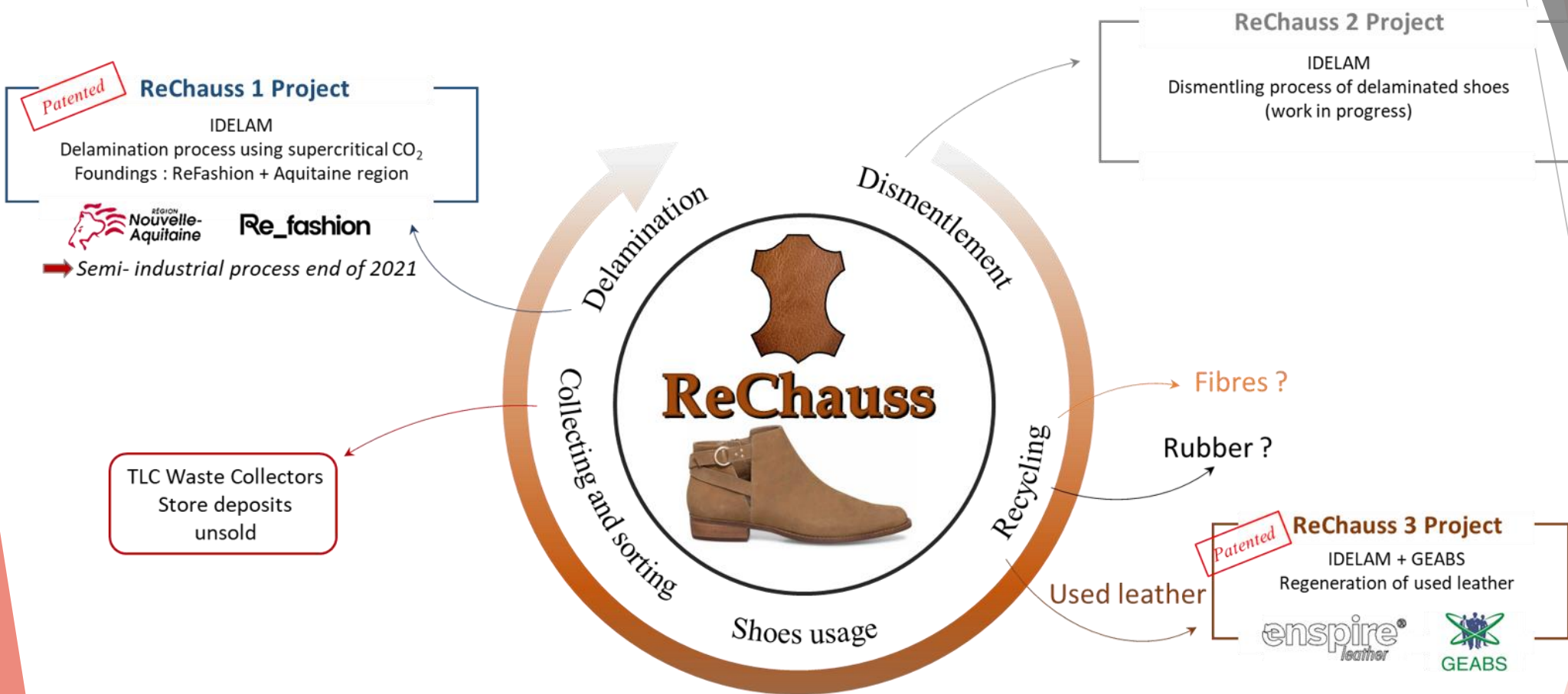


20/01/2021

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Project N°1 ReChauss: Shoes recycling (in progress)



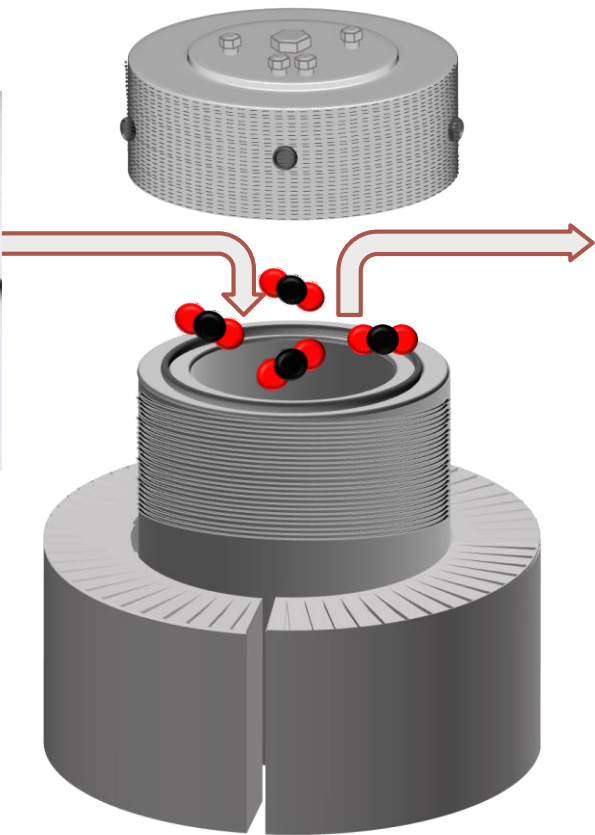
TLC: Textiles, Linens, Shoes



ReChauss: Example of delamination



Used shoe



Supercritical CO₂ reactor



ReChauss Project

Delamination of used shoes

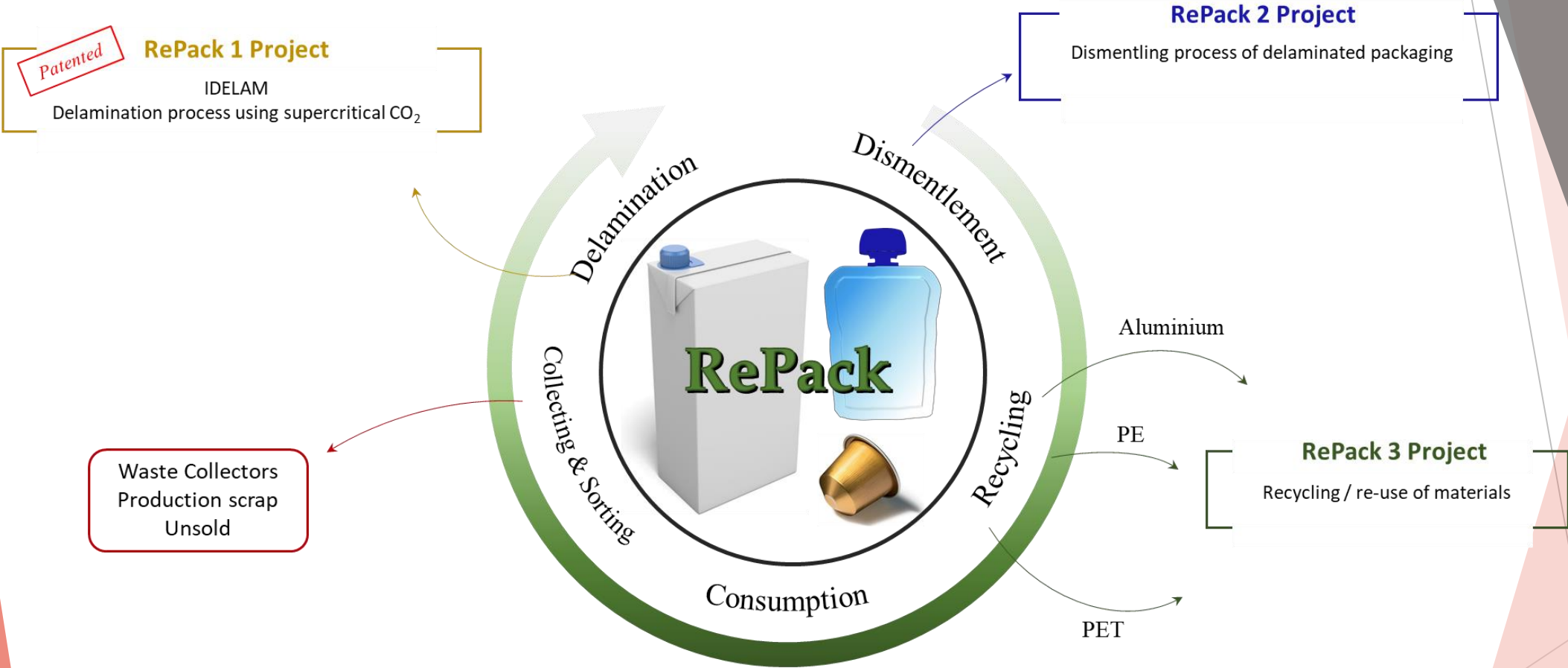
- Semi-industrial process end of 2021



Re_fashion



Project N°2 RePack: Recycling of multi-layer packaging (under study)

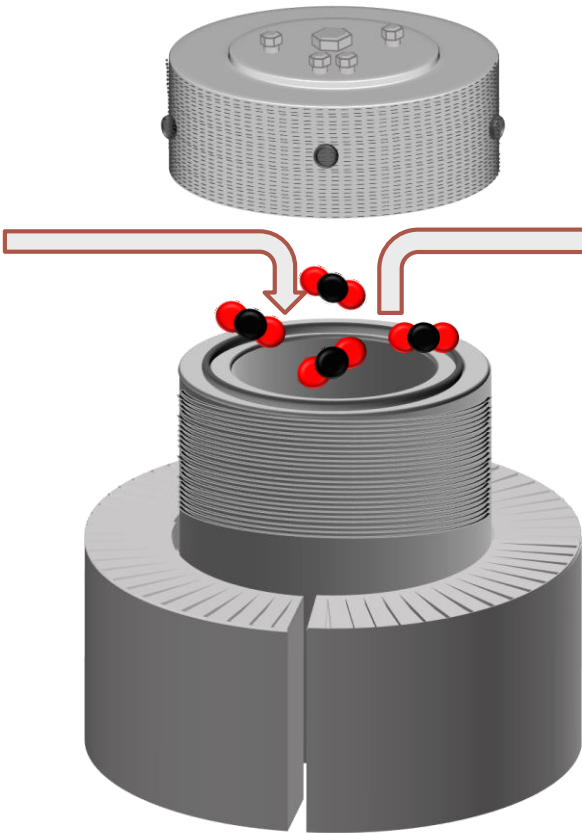




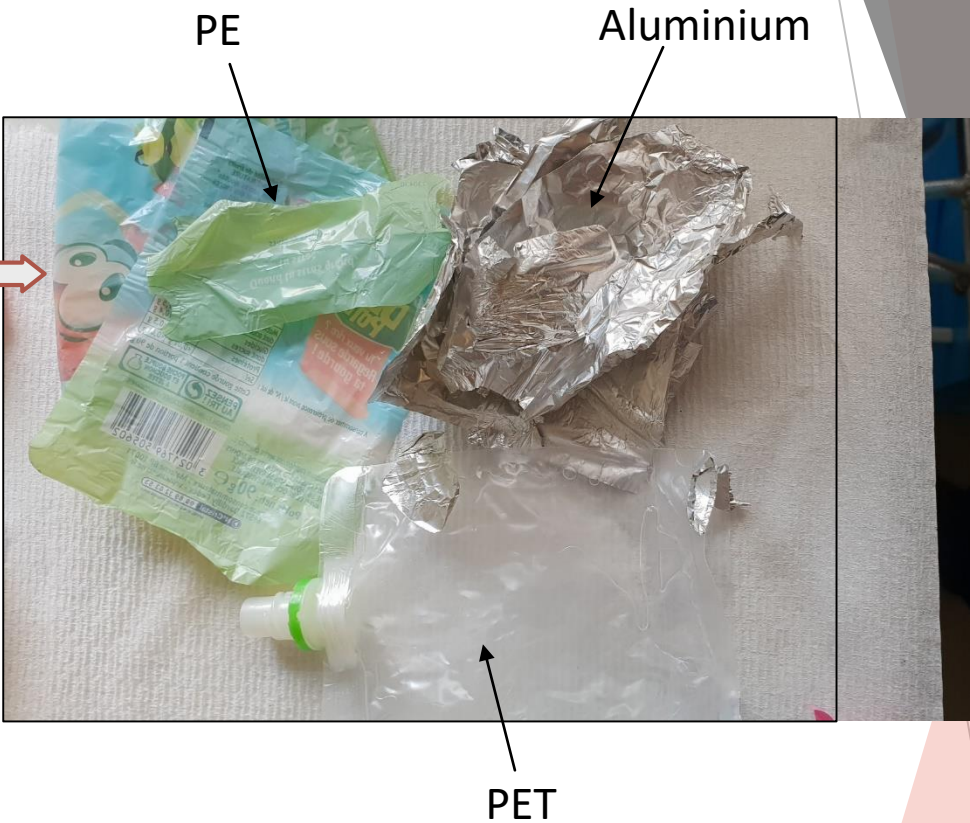
RePack: Example of delamination



Used food gourd



Supercritical CO₂ reactor



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