

Surface technologies to implies barrier onto rigid 3D structure and influence of surface preparation : spray deposition

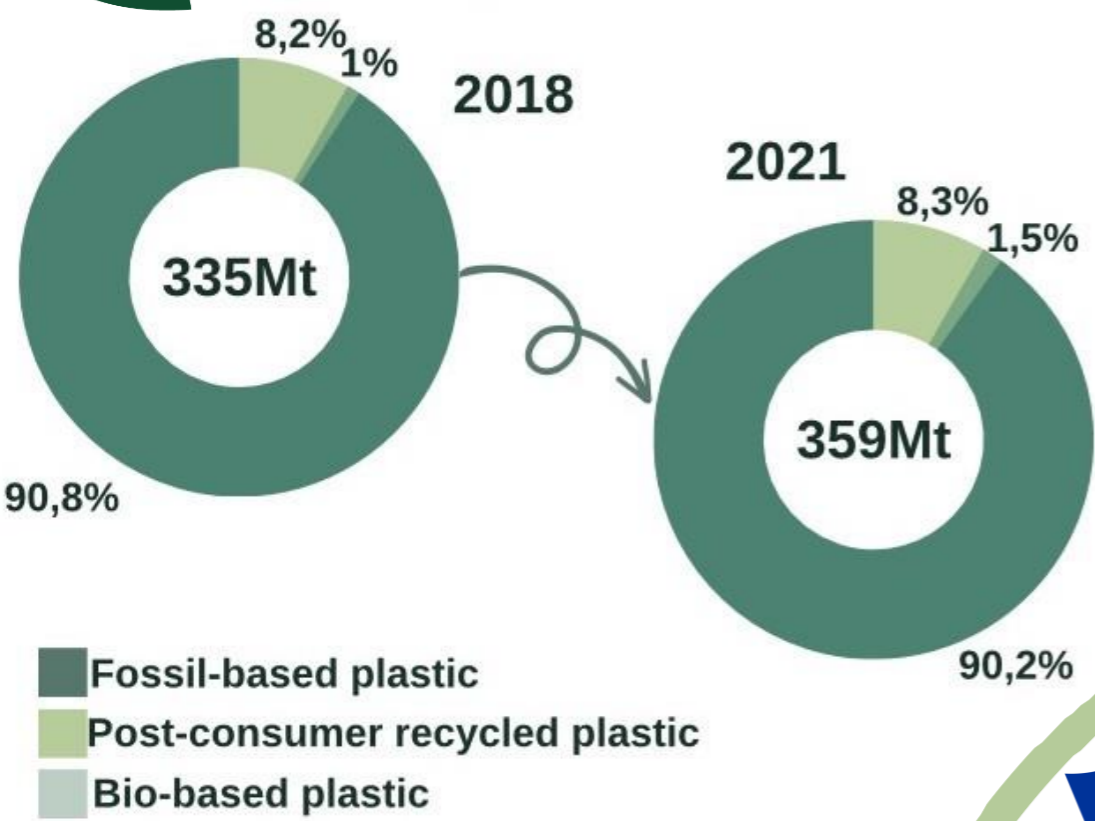
Suzy Ruano
Grenoble-INP Pagora

Cellulose Valley

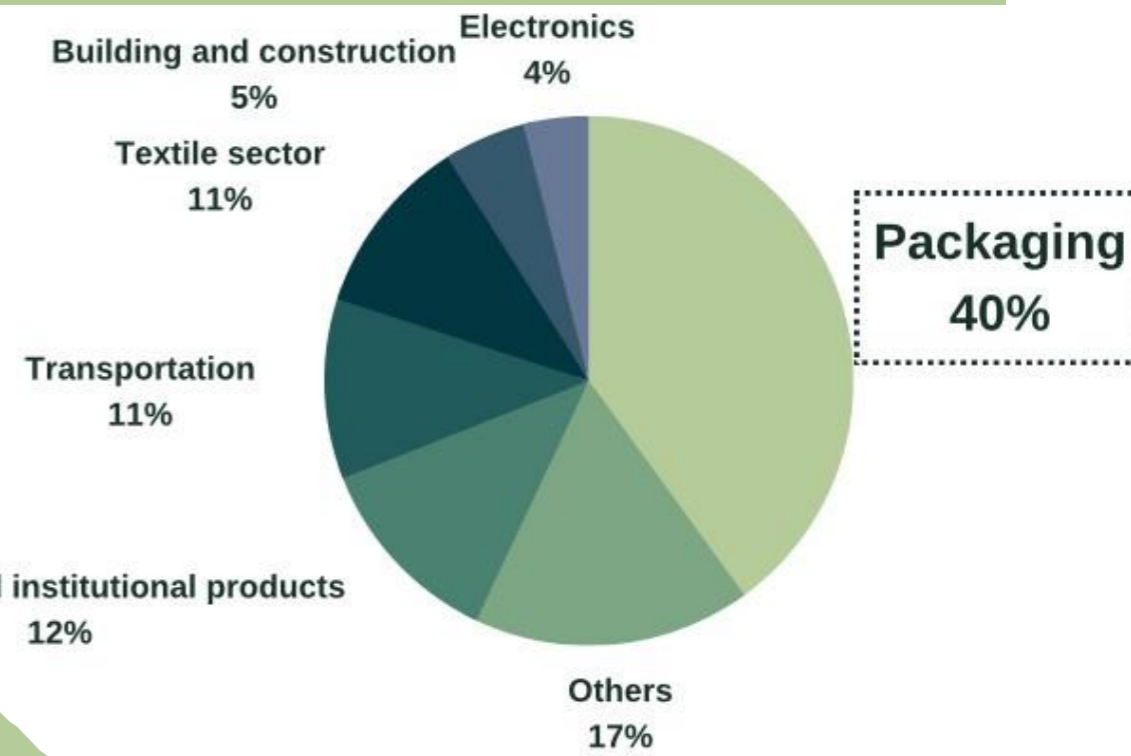
BY FONDATION GRENOBLE INP



Context



Only 9% of plastic waste was recycled properly in 2019



World plastics production

Source: Conversio Market & Strategy GmbH and nova-Institute

Origin of plastic waste in 2019

OECD Environment Statistics, "Global Plastics Outlook : Plastic waste in 2019." May 28, 2022. Accessed: May 25, 2022.

Spray application process

BARRIER SPRAY COATING

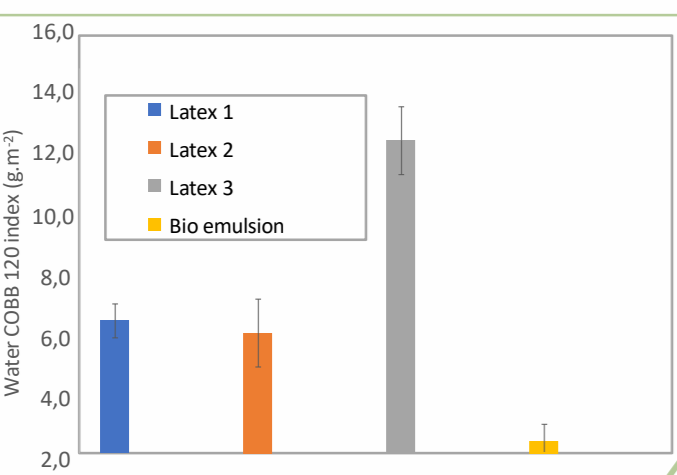


Properties studied

Intrinsic properties
Rheology

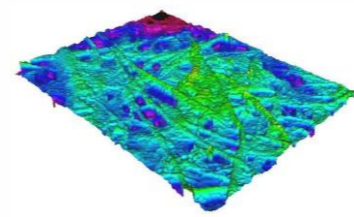
MFC (cellulose microfibril)

Other Biobased compounds

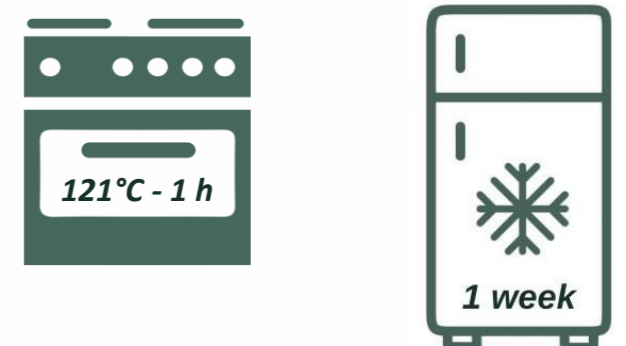


Use of different sprays

Influence of the surface preparation



Recyclable in paper/board stream



Real conditions study

Barrier properties

Grease



Water



Demonstrator and conclusions

After 1 night in the fridge



- Spray coating is a complex application technique which takes into account many parameters : viscosity, type of nozzles, type of fluids, surface of the substrate, ...
- For an optimum spraying, the surface must be closed
- Measurements in real-life conditions need to be carried out with the chosen commercial solution