

# Barrier coatings for compostable food packagings (bioORMOCER®)

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# Plastics: poisoning of nature, animals and people

fresh food and convenience food are often packed in multi-layer plastics

not recyclable

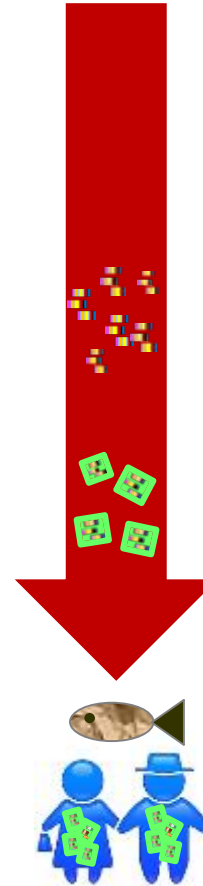
plastics do not degrade in nature, but accumulate in the environment

break down in smaller fragments (e.g. micro plastics)

adherence of toxic chemicals onto the particles

accumulation of the particles in the food chain

particles and adhering toxins are ingested by animals and humans



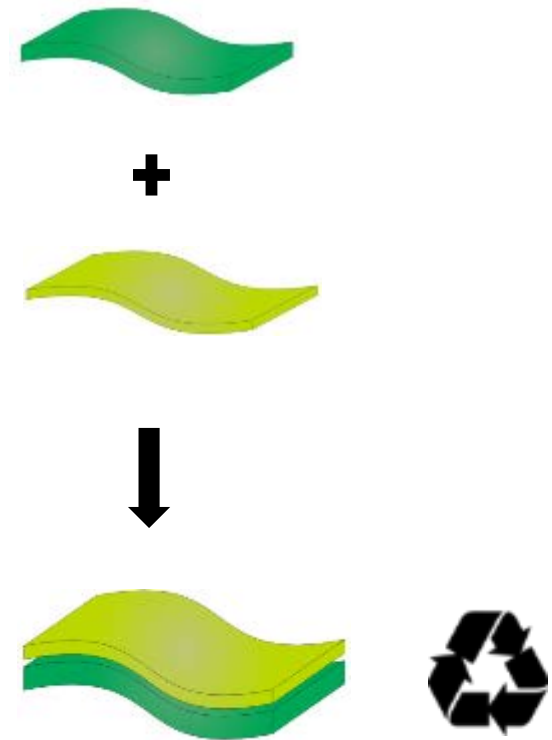
# Our vision for the future: compostable plastics

Our innovation makes it possible

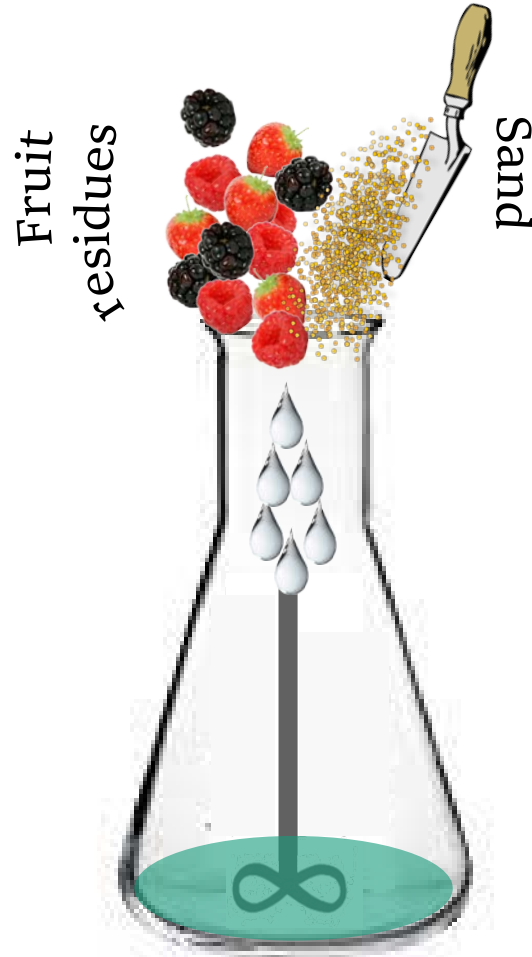
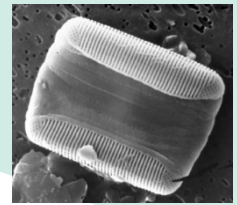
**Dilemma:**  
insufficient barrier properties for  
food packaging

**Solution:**  
compostable coatings improve  
the properties

**Benefits:**  
→ barrier properties can be achieved  
→ fully compostable food packaging



# Marriage of silicate and (bio)organic structures - a proven principle taken from nature



**biologically based lacquer**

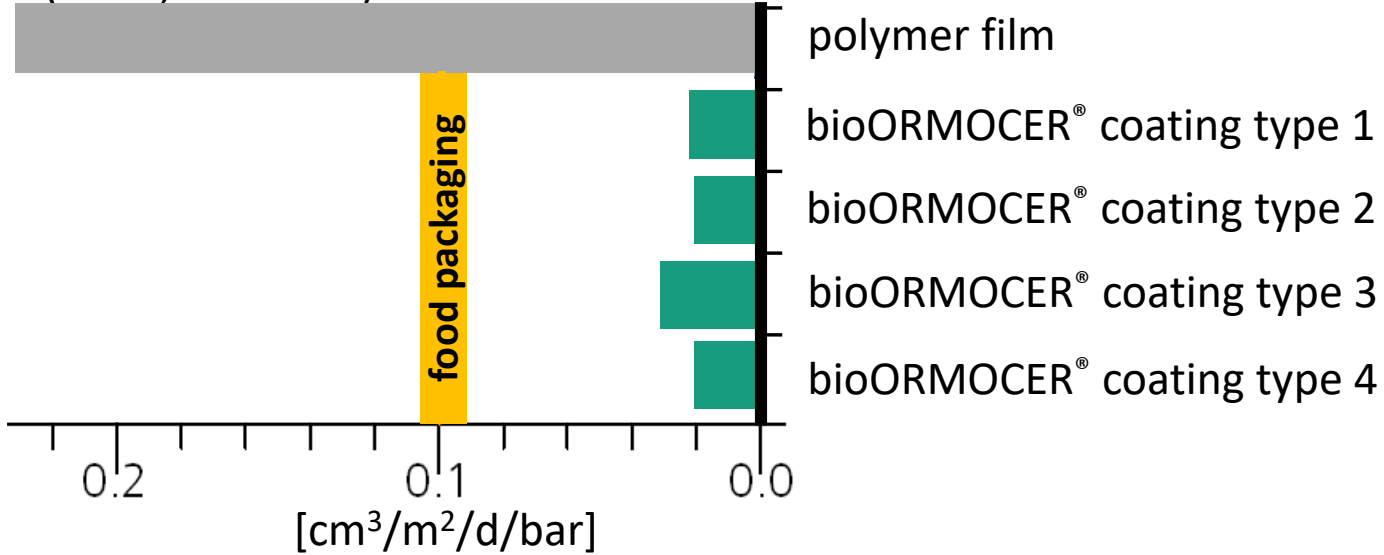
- easy to scale up
- low cost material
- robust coatings
- preserve the quality of food

# 1. Biodegradability tests ISO 14855-1:2013\*

bioORMOCER® is biodegradable under composting conditions

# 2. Barrier properties of bioORMOCER® : OTR

(23 °C, 50 % r. h.)



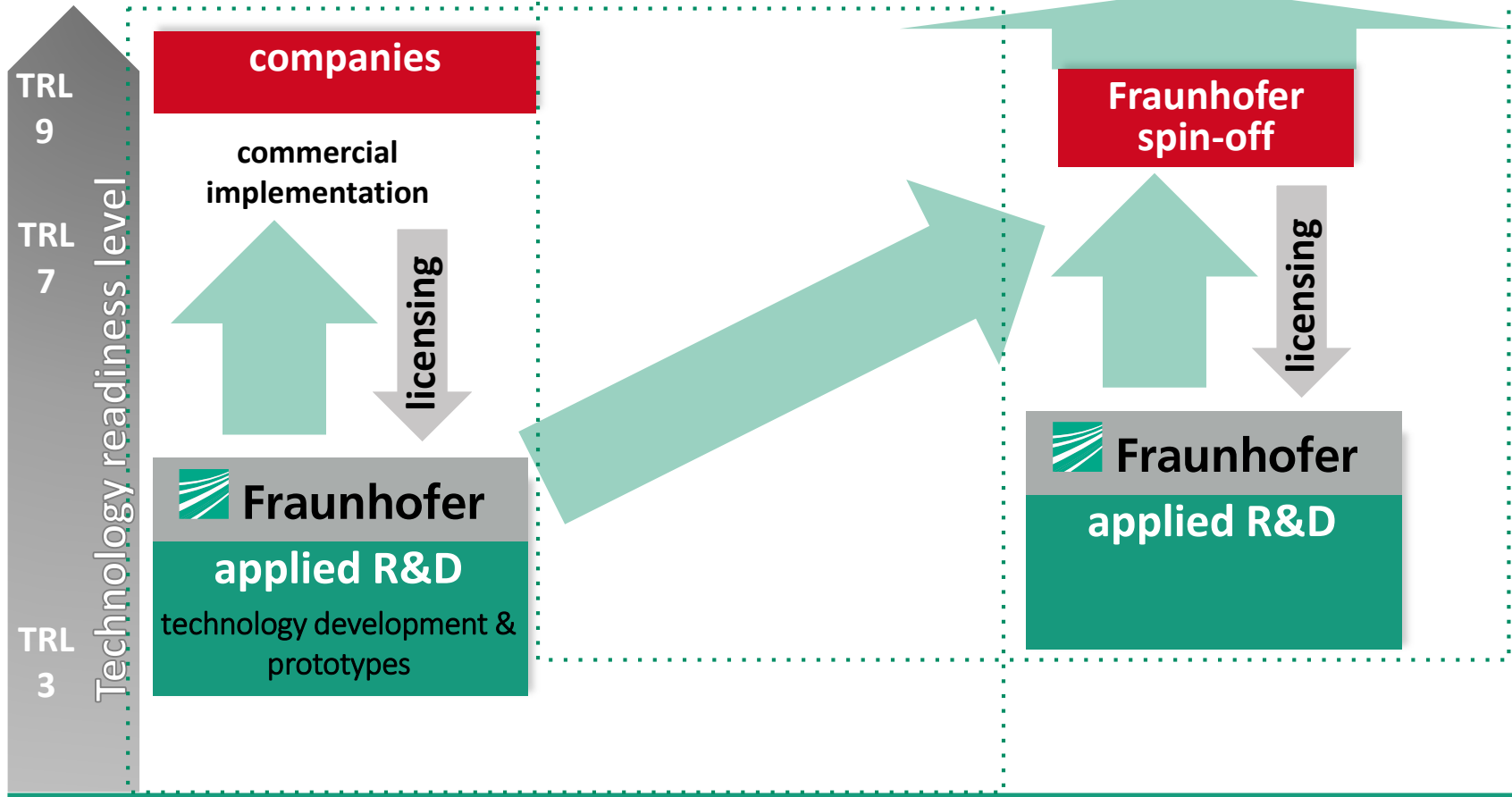
 **results very promising**  
 **for WVTR comparable results**

\*Determination of the ultimate aerobic biodegradability of plastic materials under controlled composting conditions – method by analysis of evolved carbon dioxide

# Business model

Phase 2:  
Fraunhofer spin-off  
company

Phase 1:  
Fraunhofer model



## Current status: **TRL 4-5**

- new material class of bioORMOCER® has been developed
- very good results already obtained
- our new lacquers are ready for testing on your materials



## Joint collaboration work with industrial partners ->**TRL 7**

- lacquer adaptations for specific product requirements (upscaling of the lacquer synthesis)
- technology transfer to industrial partner
- Continued ISC support until market launch



**THANK YOU FOR YOUR INTEREST!**

bioORMOCER®

Compostable  
FoodPackaging