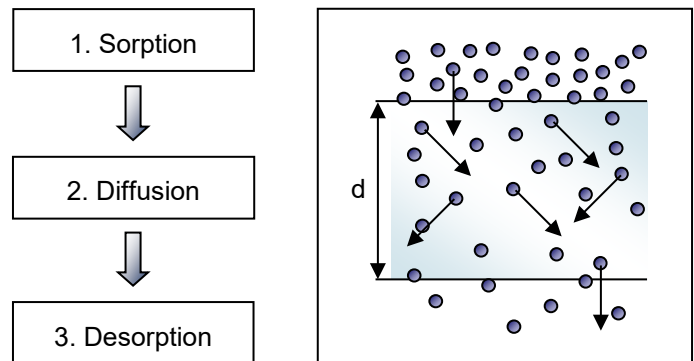


Combination of C-CVD and sol-gel technology to create barrier layers on polymer films

Transfer offering

Untreated polymer films usually have only a low barrier effect against gases. By means of a coating, their diffusion paths can be extended, which increases this.

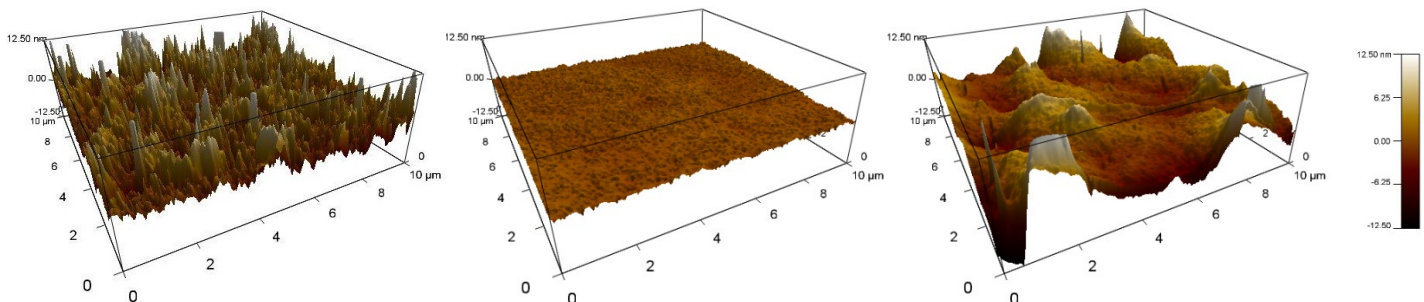
At INNOVENT, user-specific systems can be developed and analysed which allow a targeted adjustment of the permeation behaviour.



Mechanism of particle penetration in polymer films

Approach

By combining C-CVD (Combustion Chemical Vapor Deposition, especially Pyrosil® process) and sol-gel technology, it is possible to produce relatively thin, flexible and smooth coating systems with a low defect density.



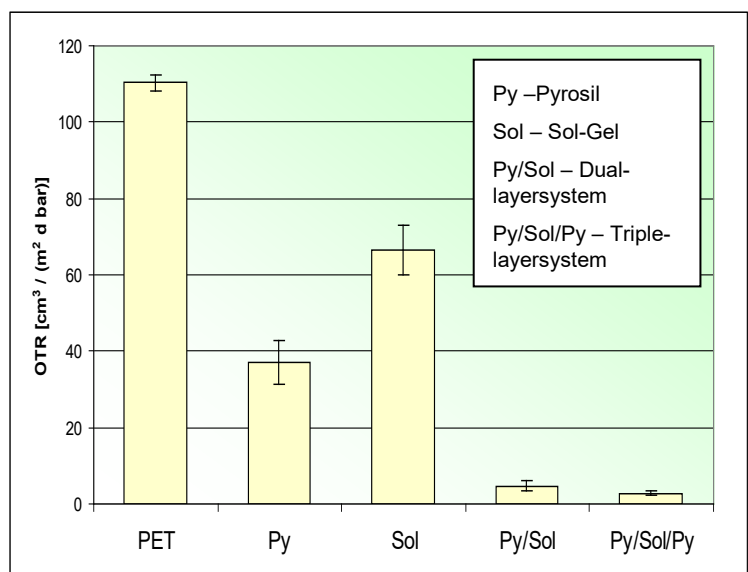
AFM image of a Pyrosil® layer (left), a sol-gel coating (center) and a combination layer (right)

Advantages

- large area coating (both processes R2R suitable)
- nearly any inclusions or pores (homogeneous coating by superposition)
- virtually no aging of the layers

Development status and property rights

The presented topic is the subject of various research projects. Especially layer systems on films with an increased barrier effect against water vapour are currently in focus. The generation of a barrier effect by means of CVD and sol-gel technology is already partly protected by patent.



Oxygen Transmission (OTR) of uncoated and coated PET film