

Functional sol-gel coatings

Transfer offering

Using sol-gel technology, it is possible to produce non-metallic inorganic or hybrid polymer coatings. In combination with different (pretreatment) processes (C-CVD/ AP-CVD) specific functionalizations can be achieved, resulting in a wide range of applications.

Approach

At INNOVENT e.V. Technologieentwicklung functional sol-gel coatings with the following properties have been developed:

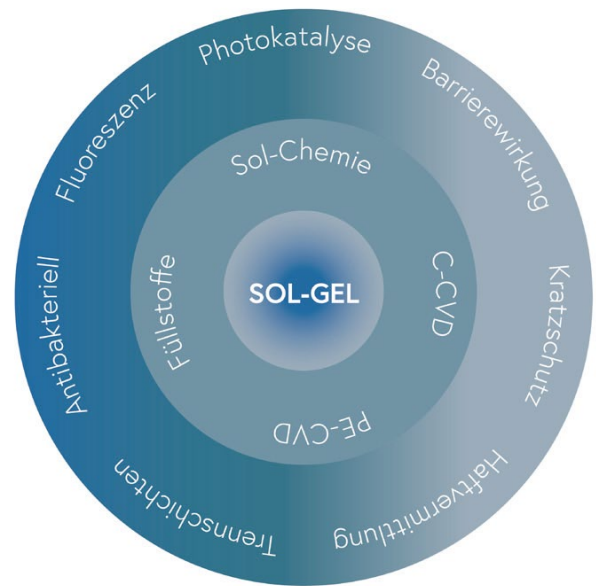
- antibacterial
- non-stick
- corrosion protection coating for metals
- barrier coating for polymer films
- photocatalytically active / easy-to-clean Coatings
- fluorescent

The application is possible with:

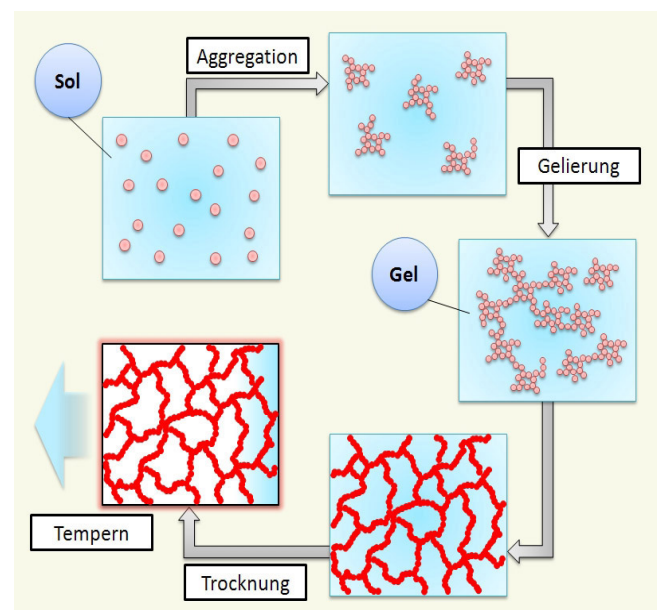
- slot die
- spraying
- dipping
- doctor blade

Advantages

- specific functionalization of different materials
- multiple functionalization
- extensive property portfolio
- large-area coating
- improved adhesion and long-term stability through process combination with C-CVD or APCVD processes



possible combinations of processes to achieve different functionalities



Scheme of the sol-gel process



Sol-gel laboratory plant at INNOVENT e.V.

Development status and property rights

For various applications and requirements, a variety of functional sol-gel coatings already exist as well as the combination of these with C-CVD or APCVD processes.

In addition, there is the possibility of developing new sol-gels, which are tailored to special requirements.