



# Platirus

**Novel regenerable hybrid solid phase extraction material for the recovery of Palladium**

**Platirus Exploitation Workshop 21 April 2021, online**

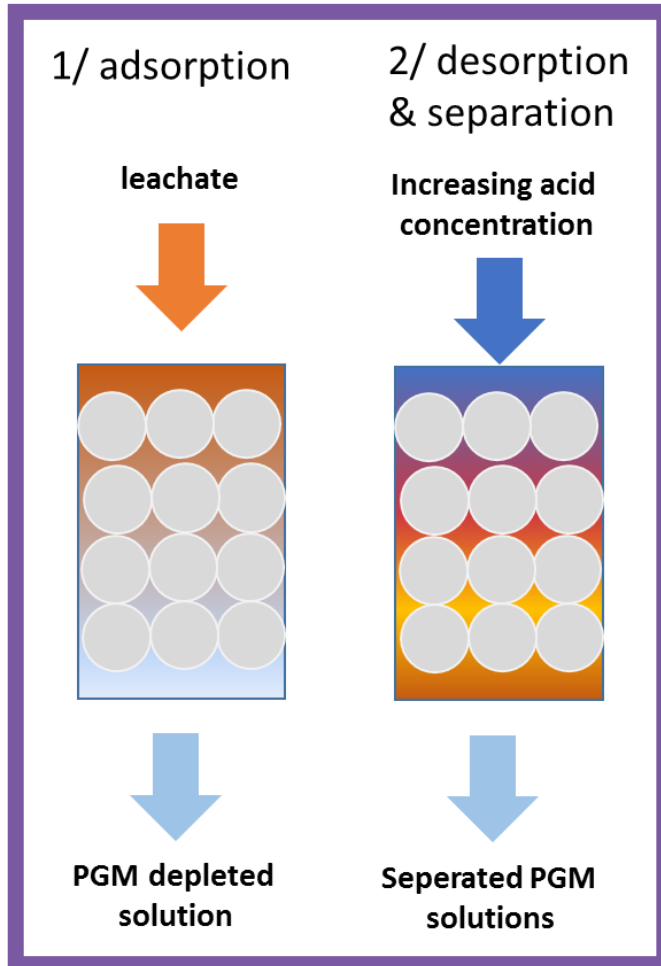
**Bart Michielsen – VITO**

PLATIRUS is a project funded by the European Commission.

This project has received funding from the European Union's Horizon 2020 Research and Innovation program under Grant Agreement n° 730224



# Novel regenerable hybrid solid phase extraction material for the recovery of Palladium



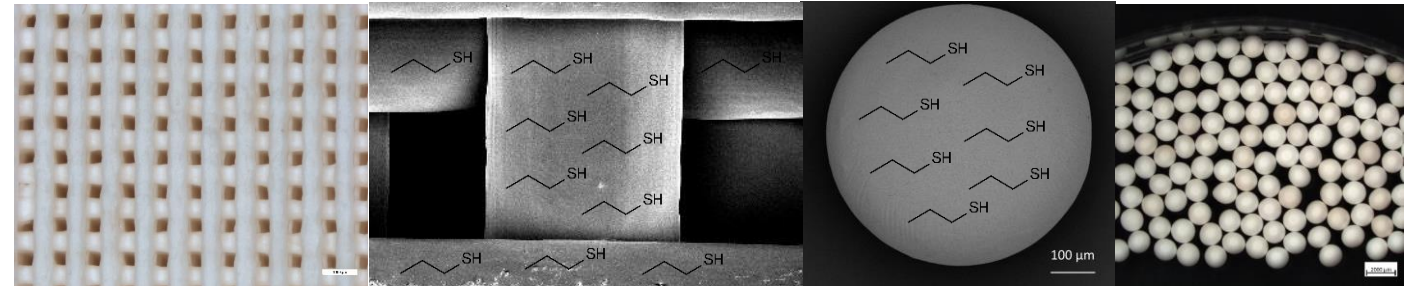
## hybrid solid phase extraction material

### inorganic $\text{TiO}_2$ 3D-support

- ✓ Uniform size
- ✓ Controlled porosity
- ✓ Controlled pressure drop and mixing
- ✓ Large specific surface

### organic scavenging group

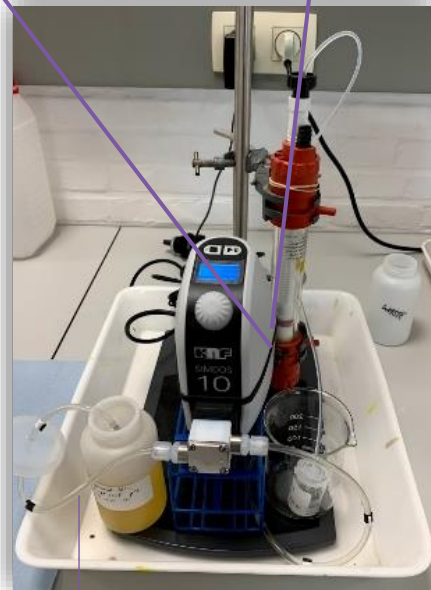
- ✓ High selectivity
- ✓ Improved hydrolytic stability
- ✓ Presence of multiple target groups
- ✓ Solvent-free synthesis procedure



# Novel regenerable hybrid solid phase extraction material for the recovery of Palladium

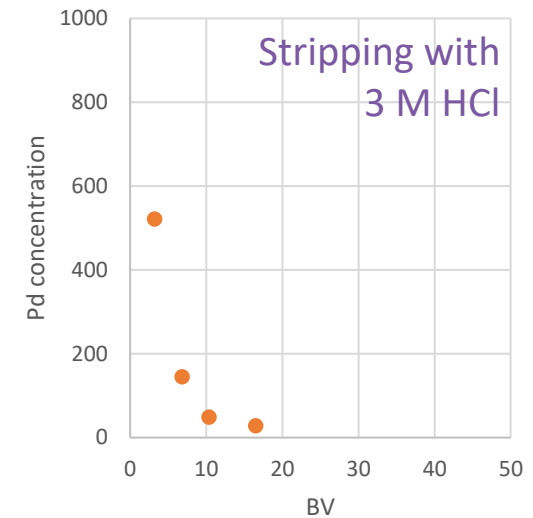
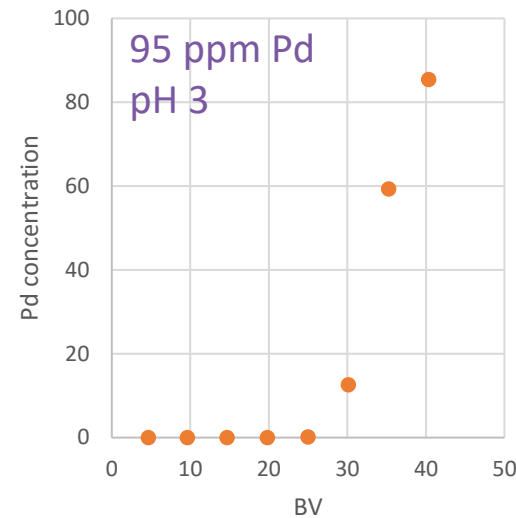


5 g of  
Pd loaded  
spheres



95 ppm Pd  
pH 3

- Complete removal of Pd from synthetic solution at contact times < 100 s
- Up concentration of Pd possible (10 x)
- Very low leaching of SPE (> 0,04 %)
- Up to 7 cycles tested



# Main Contact

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