

Regeneration of Microparticle-structured Biosensor Surfaces

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Structured biosensor surfaces

Why structures?

- ⇒ Increased surface area
- ⇒ More binding events
- ⇒ Signal enhancement
- ⇒ Improved detection limit

Particle structures – pros & cons

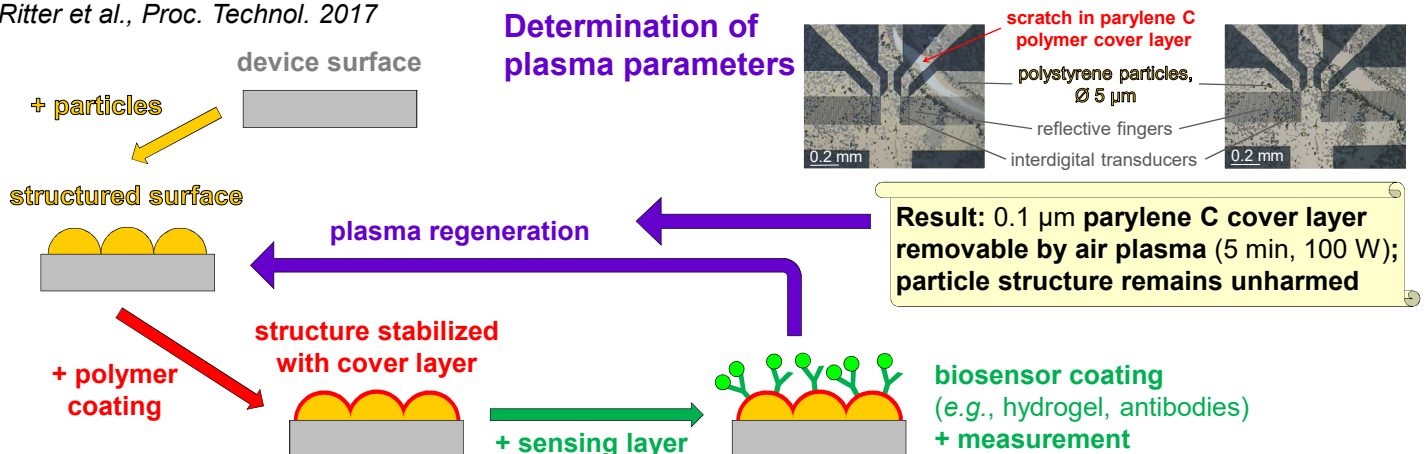
- + High surface gain, easy to apply
- +/- Cover layer required for stability
 - offers basis for functionalization
- Limited reproducibility

Regenerated structures

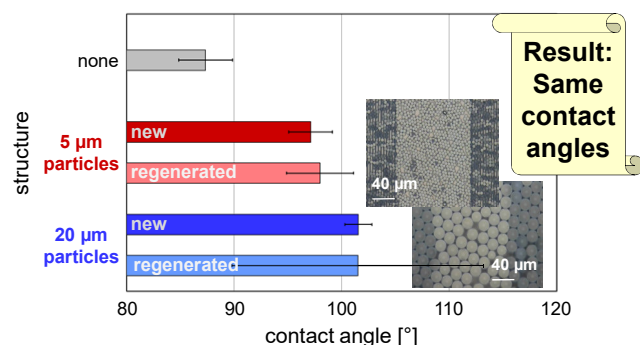
- ⇒ Regeneration would allow **repeated use of perfect particle structures**
- ⇒ To be investigated: **performance of new vs. regenerated structures**

Structuring, coating and regeneration of surface acoustic wave (SAW) devices

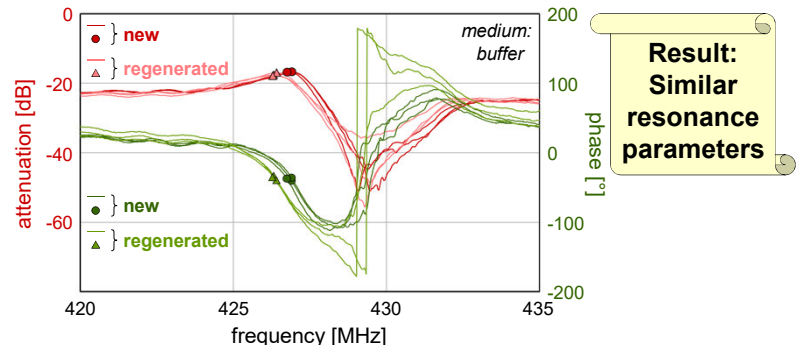
Ritter et al., Proc. Technol. 2017



Contact angles on structured SAW devices coated with parylene C



Resonance points of SAW devices coated with 5 µm particles, parylene C + hydrogel



Summary: SAW biosensor devices with new and regenerated structures show the same performance in terms of physical properties.

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