

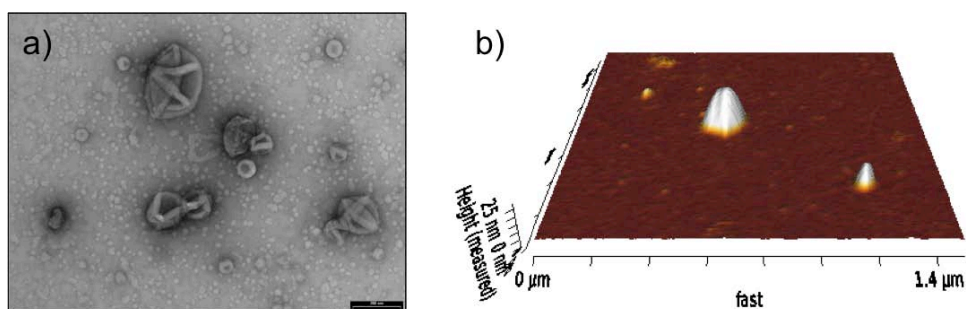
**Functional surfaces through immobilization of polymersome nanocompartments**

G. Gunkel-Grabole<sup>1,3</sup>, T. Einfalt<sup>1</sup>, M. Loroma<sup>1</sup>, C. Spinnler<sup>1</sup>, S. Lörcher<sup>1</sup>, S. Mantri<sup>2</sup>, C. G. Palivan<sup>1</sup>, W. Meier<sup>1\*</sup>

<sup>1</sup>Department of Chemistry, University of Basel, Klingelbergstrasse 80, CH-4056 Basel, Switzerland,

<sup>2</sup>Laboratory of Organic Chemistry ETH Zürich, Hönggerberg, Zürich, Switzerland, <sup>3</sup>  
Gesine.Gunkel@unibas.ch

Amphiphilic block copolymers possess the ability to self-assemble into planar membranes and nanometer-sized spherical architectures such as micelles and vesicles.<sup>1,2</sup> The intrinsic properties of polymers and the variety of monomers available to synthesize block copolymers give access to a library of functionalities that are explored to specifically modulate interactions. The covalent immobilization of polymer vesicles on solid support is realized using a thiol-ene reaction, and the conditions are optimized towards maintaining structural integrity of the hollow polymer architectures.<sup>3</sup> Thus, functional surfaces can be generated when immobilized polymer vesicles act as protected compartments to perform enzymatic reactions.



**Figure 1.** a) Visualization of polymer vesicles composed of polydimethylsiloxane-polyoxazoline triblock copolymers by transmission electron microscopy (scale bar 200 nm) and b) visualization of a surface immobilized polymer vesicles by atomic force microscopy.

[1] G. Gunkel-Grabole, S. Sigg, M. Lomora, S. Lörcher, C. Palivan, W. Meier; *Biomater. Sci.* **2015**, *3*, 25-40.

[2] T. Einfalt, G. Gunkel, M. Spulber, A. Najer, C. Palivan, *CRC Concise Encyclopedia of Nanotechnology*, **2015**, 1055-1072.

[3] G. Gunkel-Grabole, C. Palivan, W. Meier; *Macromol. Mater. Eng.* **2017**, *302*, 1600363.