The focus of my research group is on the synthesis of polymers, especially functional polymers. Over the last years we have developed an expertise to prepare highly functionalized polymers and block copolymers with a precisely defined architecture, which led to a variety of novel applications.

Based on the synthesis of functional polymers one of our primary interests has been tuning of the behavior of functional polymers on surfaces and/or at interfaces. The behavior of ultra-thin polymer films on surfaces and the respective influence on surface properties can be understood and controlled in a very elegant manner.

The focus of this presentation will be to highlight some possibilities that precisely defined polymers offer in respect to surfaces and interfaces. Examples for the functionalization of various nanoparticles will be given to demonstrate the easy usability of polymers as polymeric ligands for tuning of surface properties. Furthermore, a versatile approach to control the wettability of coatings independently of the nature of the substrate will be presented. One application of this approach for surface property manipulation is the immobilization of biological complexes.