Bioinspired metallo-elastomers

Yadong Wang[1] and Cole Latvis[1]

[1] School of Biomedical Engineering, Cornell University, Ithaca, USA
yadongwang@cornell.edu

Abstract. My lab studies soft matter designed to control the interface with living tissues. We focus on elastomers that are important for repair and regeneration of vital organs. Our most recent generation of bioelastomers are inspired by metallo-enzymes such as superoxide dismutase. We use Cu ions to chelate polymer chains into a highly elastic network. These materials possess excellent biocompatibility. Furthermore, they have inherent catalytic capability in degrading reactive oxygen species and generating nitric oxide. They mimic and enhance the protective roles of the vascular endothelium. I will discuss briefly our effort to translate this material into the clinics.