The Chinese University of Hong Kong
Department of Biomedical Engineering

My Quest for the ONE Elastomer

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McAdam Family Foundation Professor of Heart Assist Technology

Meinig School of Biomedical Engineering

Cornell University

Date	:	15 October 2025 (Wednesday)
Time	:	10:00 am
Venue	:	Room 1122, William M W Mong Engineering Building, CUHK

Abstract

My lab studies soft matter designed to interface seamlessly with living tissues. A major topic is bioelastomer. I have been designing bioelastomers since the 2000s. The first generation has good biocompatibility and is now widely used in academic and industrial research. It has been commercially available for about 10 years now. However, it is difficult to process. In a quest to make processing easier while maintaining excellent biocompatibility, I guided my students to develop the 2nd and 3rd generation bioelastomers with chelation or coordination bonds as crosslinks. Here I will describe my 20-year journey in elastomer design with a focus on our recent work on bioactive metallo-elastomers that exhibit remarkable catalytic functions: they scavenge reactive oxygen species and generate nitric oxide upon contact with plasma—mimicking and enhancing the protective roles of the vascular endothelium. I will finish with a brief update on our effort to translate this material into the clinics.

Biography

Dr. Yadong Wang is the inaugural McAdam Family Foundation Professor in the Meinig School of Biomedical Engineering at Cornell University, a position he has held since joining the institution in 2017. He earned his Ph.D. in 1999 under Professor T. Daniel P. Stack at Stanford University and conducted postdoctoral research under Professor Robert Langer at MIT. He began his academic career as an assistant professor at the Georgia Institute of Technology in 2003, advanced to associate professor at the University of Pittsburgh in 2008, and was promoted to full professor in 2023. Shortly thereafter, he was named the Whiteford Professor, a testament to his rapid rise in the field. A prolific researcher, he has published over 150 peer-reviewed articles across chemistry, materials science, and biomedical engineering in high-impact journals throughout his career. His work focuses on designing and applying innovative biomaterials, with several inventions licensed for commercial use, including one approved for clinical applications. He co/founded three companies specializing in advanced medical adhesives, drug delivery technologies, and vascular grafts, respectively. His contributions have earned him prestigious recognitions, including fellowship in the American Institute for Medical and Biological Engineering and the National Academy of Inventors.

***** ALL ARE WELCOME *****

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