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Abstract: "Sensors for robotic applications and implantable electronics"

Skin is the body's largest organ, and is responsible for the transduction of a vast amount of information. This conformable, stretchable, self-healable and biodegradable material simultaneously collects signals from external stimuli that translate into information such as pressure, pain, and temperature. The development of electronic materials, inspired by the complexity of this organ is a tremendous, unrealized materials challenge. However, the advent of organic-based electronic materials may offer a potential solution to this longstanding problem. In this talk, I will describe the design of skin-inspired sensors and their applications in robotics and implantable applications

Bio: Prior to joining Stanford in 2004, Zhenan Bao was a Distinguished Member of Technical Staff in Bell Labs, Lucent Technologies. She received her Ph.D in Chemistry from the University of Chicago in 1995. She has over 500 refereed publications and over 65 US patents with a Google Scholar H-Index >160. She pioneered a number of molecular design concepts for organic electronic materials. Her work has enabled flexible electronic circuits and displays. In the past ten years, she pioneered the field of skin-inspired organic electronic materials, which resulted in unprecedented performance or functions in medical devices, energy storage and environmental applications.

Bao is a member of the National Academy of Engineering and the National Academy of Inventors. Bao was selected as Nature's Ten people who mattered in 2015 as a "Master of Materials" for her work on artificial electronic skin. She was awarded the inaugural ACS Central Science Disruptor and Innovator Prize in 2020, the Wilhelm Exner Medal by Austrian Federal Minister of Science 2018, ACS Award on Applied Polymer Science 2017, the L'Oréal-UNESCO For Women in Science Award in the Physical Sciences 2017, the AIChE Andreas Acrivos Award for Professional Progress in Chemical Engineering in 2014.