

UCSD NANOENGINEERING/CHEMICAL ENGINEERING  
\* *Jan Talbot Inaugural Seminar* \*  
Wednesday, November 4, 2020  
Seminar Presentation: 11:00am – 12:00pm PT  
**Zoom Seminar**

*“Skin-Inspired Organic Electronics”*

**Zhenan Bao, PhD**

*Department Chair and K.K. Lee Professor of Chemical Engineering,  
and by courtesy, a Professor of Chemistry and  
a Professor of Material Science and Engineering at Stanford University*



**Abstract:** 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 organic electronic materials to mimic skin functions. These new materials and new devices enabled a range of new applications in medical devices, robotics and wearable electronics.

**Biosketch:** Zhenan Bao is Department Chair and K.K. Lee Professor of Chemical Engineering, and by courtesy, a Professor of Chemistry and a Professor of Material Science and Engineering at Stanford University. Bao founded the Stanford Wearable Electronics Initiative (eWEAR) in 2016 and serves as the faculty director.

Prior to joining Stanford in 2004, she was a Distinguished Member of Technical Staff in Bell Labs, Lucent Technologies from 1995-2004. 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.

Bao is a member of the National Academy of Engineering and the National Academy of Inventors. She is a Fellow of MRS, ACS, AAAS, SPIE, ACS PMSE and ACS POLY.

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 Gibbs Medal by the Chicago session of ACS 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, ACS Carl Marvel Creative Polymer Chemistry Award in 2013, ACS Cope Scholar Award in 2011, the Royal Society of Chemistry Beilby Medal and Prize in 2009, the IUPAC Creativity in Applied Polymer Science Prize in 2008.

Bao is a co-founder and on the Board of Directors for C3 Nano and PyrAmes, both are silicon-valley venture funded start-ups. She serves as an advising Partner for Fusion Venture Capital.

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\*The Chemical Engineering program at UC San Diego has established this named lectureship in honor of Jan Talbot, a faculty member in Chemical Engineering (now emeritus) and the director of the program at UCSD for about 20 years.