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Conformal Sense Digitalization

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and Engineering
Nanyang Technological
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Conformal Sense Digitalization

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ABSTRACT

Conformal sense digitalization is an emerging interdisciplinary field that aims to revolutionize sensing and interaction by seamlessly integrating digital technology with physical objects, environments, and human experiences. This talk will delve into the principles of conformal sense digitalization, its potential applications, and the challenges it faces in realizing its full potential. I will discuss the latest advancements in materials science and soft electronics,, which have paved the way for the development of conformal sensors and interfaces that can adapt to complex geometries, surfaces, and biological systems. These conformal systems have the potential to transform various industries, from healthcare and robotics to wearable technology and smart environments. By bridging the gap between the digital and physical realms, conformal sense digitalization has the potential to redefine how we interact with our surroundings, unlocking a new era of seamless and intuitive human-machine interaction.



Professor Xiaodong Chen holds the prestigious President's Chair Professorship in Materials Science and Engineering at Nanyang Technological University (NTU), Singapore, with courtesy appointments in both Chemistry and Medicine. His research interests span mechanomaterials science and engineering, flexible electronics technology, sense digitalization, cyber-human interfaces and systems, and carbon-negative technology. Prof. Chen's outstanding scientific contributions have been recognized with numerous awards, including the Singapore President's Science Award, Singapore National Research Foundation (NRF) Investigatorship and NRF Fellowship, Winner of Falling Walls, the Friedrich Wilhelm Bessel Research Award from the

Alexander von Humboldt Foundation, and Dan Maydan Prize in Nanoscience and Nanotechnology. He is a Fellow of the Singapore National Academy of Science, the Academy of Engineering Singapore, the Royal Society of Chemistry, and the Chinese Chemical Society. Prof. Chen also serves on the editorial advisory boards of 16 esteemed international journals, including *Advanced Materials* and *Small*. Currently, he is the Editor-in-Chief of *ACS Nano*, a flagship journal in nanoscience and nanotechnology.