

# FLEX

7-8 November

Singapore

## Southeast Asia 2019

Marina Bay Sands Convention Centre  
Jasmine Ballroom | Level 3

### Topics and Abstracts:

<b>Speaker</b>	<b>Dr. Chen Xiaodong</b>
<b>Company</b>	<b>Innovative Centre for Flexible Devices (iFLEX), Max Planck – NTU Joint Lab for Artificial Senses, School of Materials Science and Engineering, Nanyang Technological University, Singapore</b>
<b>Designation</b>	<b>Director of Innovative Centre for Flexible Devices (iFLEX) at NTU and the Director of Max Planck – NTU Joint Lab for Artificial Senses.</b>
<b>Title of Presentation</b>	<b>Opportunities and Challenges in Flexible Hybrid Electronics</b>
<b>Abstract</b>	<p>Flexible hybrid electronic devices integrate functional materials/components in traditional and unusual electronic architectures on flexible substrates. It yields the systems that have unique properties, unavailable to conventional, wafer-based devices -- light-weight construction, conformable mechanics, functional reconfigurability, self-healing constitution and others.</p> <p>Recent breakthroughs in the area of flexible hybrid electronics not only open up tremendous new avenues for research, but also suggest the potential for broader impacts in human life. Successful outcomes may help to realize a vision in which 'everything is connected' as a collection of 'Internet of Things', with implications for next-generation wearables, information technology, energy, healthcare, social security, and so on. Industry analysts from IDTechEx predict compound growth rates in flexible hybrid electronics of 30% per year from 2011 to 2028, thereby forming the foundations for further fundamental research in this area.</p> <p>In this talk, I will present the opportunities and challenges in this arising field. I will particularly highlight the potential to revolutionize electronic system architectures, advanced manufacturing processes, strategies for integrating semiconductor devices with the human body, methods for harvesting power and for processing and wirelessly transmitting data potential to be very useful and constructive for researchers in this area. Looking forward, the accelerated growth of development efforts in flexible hybrid electronics will lead to expansive possibilities for technological translation, in which industrialization-based innovations will play crucial roles.</p>

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### Biography



Dr. Xiaodong Chen is President's Chair Professor in Materials Science and Engineering and Professor (by courtesy) of Physics and Applied Physics at Nanyang Technological University, Singapore (NTU). He is the Director of Innovative Centre for Flexible Devices (iFLEX) at NTU and the Director of Max Planck – NTU Joint Lab for Artificial Senses. He received his B.S. degree (Honors) in chemistry from Fuzhou University (China) in 1999, M.S. degree (Honors) in physical chemistry from the Chinese Academy of Sciences in 2002, and Ph.D. degree (Summa Cum Laude) in biochemistry from University of Muenster (Germany) in 2006. After his postdoctoral fellow working at Northwestern University (USA), he started his independent research career as Nanyang Assistant Professor at Nanyang Technological University since 2009. He was promoted to Associate Professor with tenure in Sept 2013, then Full Professor in Sept 2016. He was appointed as the President's Chair Professor in Materials Science and Engineering in April 2019. His research interests include mechano-materials and devices, integrated nano-bio interface, and cyber-human interfaces. So far, he publishes more than 270 high-profiled papers with a citation of more than 18,000.