

Focused Seminar Series on Microdevices in Biological Studies
25 Jul 2016 – 10 Oct 2016**Tactile sensing using wearable microfluidics**

Mr. Joo Chuan YEO

IES Prestigious Engineering Achievement Award Winner 2016

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Date: 5th September 2016, Monday

Time: 4pm to 5pm

Venue: Perseverance Room, Enterprise Level 5

***Abstract***

Recent years have seen an increased use of wearable sensors for monitoring physiological signals and bodily movements. However, these sensors are typically rigid and stiff, making them a mismatch to our skin. Here, we develop a novel liquid-based tactile sensor that is soft, flexible, thin, and even stretchable. We utilize soft elastomer based microfluidic templates that encapsulate conductive liquid, enabling mechanotransduction of physical forces to electrical signals. We create different microfluidic architectures to customize its precision, specificity, and sensitivity for different applications. Overall, this work highlights the potential use of liquid-based microfluidic sensors in a wide range of applications towards disease sensing, rehabilitation, and robotics.

Short Biography

Joo Chuan is currently in his third year of PhD candidature under A*STAR scholarship. His research interests include microfluidics, wearables, and point of care diagnostics. He is also the co-founder of a startup to further commercialize the patented technology. He has received the IES Prestigious Engineering Achievement Award 2016 for his research.