



## SEMINAR

### Tissue-Interfaced Organic Printed Bioelectronics

**Date:** 6 August, 2026 (Thursday)

**Time:** 11:00 a.m.

**Venue:** Room 7-35  
Haking Wong Building  
HKU

**Speaker:** Professor Sungjune Jung  
Department of Materials Science and Engineering  
POSTECH  
South Korea



#### Abstract:

Organic bioelectronics provides materials and device platforms for establishing intimate interfaces with living systems, from the human skin and brain to engineered 3D tissue models. The mechanical compliance, mixed ionic–electronic transport, and solution processability of organic semiconductors are particularly advantageous for developing biointerfaces that conform to soft, dynamic, and structurally complex biological environments. This seminar presents our recent advances in the digital additive manufacturing of organic transistor-based bioelectronics for wearable, implantable, and tissue-integrated applications. First, flexible organic thin-film transistor arrays are fabricated with high device yield and electrical uniformity and integrated with piezoresistive and photodiode sensors to realize multifunctional, mechanically compliant sensing platforms. Next, digitally printed organic active neural probes are introduced, in which multiple organic electrochemical transistors (OECTs) and passive circuit components are monolithically integrated on flexible probes to provide high gain and low-noise recording of neural activity in the somatosensory cortex. Finally, we present tissue-interfaced OECT platforms that combine large-area inkjet-printed organic transistors with 3D bioprinted lung tissues for non-destructive monitoring of ionic transport, epithelial barrier formation, and dynamic tissue responses. These studies demonstrate how digital printing, organic electronics, and three-dimensional bioprinting can be integrated to create adaptive bioelectronic interfaces that communicate with living tissues across multiple spatial and functional scales, opening new opportunities in physiological monitoring, disease modeling, therapeutic modulation, and personalized medicine.

#### Biography:

Prof. Sungjune Jung is a young distinguished professor at the department of materials science and engineering in Pohang University of Science and Technology (POSTECH). He received his PhD degree in manufacturing engineering from the University of Cambridge in 2007 and subsequently joined the department of physics, the University of Cambridge. Before his PhD, he worked for Samsung Electronics, digital printing division, for 3 years.

Since joining POSTECH in 2013, Prof. Jung has established and led the Bio-Printing and Printed Electronics Laboratory, where he and his team conduct cutting-edge research in biofabrication and printed electronics.

Prof. Jung's interdisciplinary approach integrates materials science, engineering, and biology, addressing critical challenges in healthcare and electronics. His pioneering work has led to numerous high-impact publications in journals, including *Nature*, *Nature Communications*, *Science Advances*, *Advanced Materials*, and *ACS Nano*. Prof. Jung's contributions to the scientific community have been recognized through prestigious awards, including the Minister's Award from the Ministry of Trade, Industry of the Korean Government, Outstanding Research Achievement Award and Young Distinguished Professorship from POSTECH. His vision and leadership continue to drive advancements in emerging biofabrication and flexible electronics, making a lasting impact on both scientific innovation and practical applications.

**ALL INTERESTED ARE WELCOME**

**For further information, please contact Professor Philip Chow at 3917 7905.**