

## **Title: Recent Advancements in Electronic Skin for Robotics and Wearables**

### Abstract:

The human skin is a large, multi-point, multi-modal, and stretchable sensor, inspiring the development of electronic skin for robots capable of detecting pressure and thermal distribution simultaneously. Advances in conformability have facilitated the extension of electronic skin to human bodies, reaching a stage where ultrathin semiconductor membranes can be directly affixed to the skin. This intimate integration of electronics with human skin allows for continuous monitoring of health conditions over extended periods, enabling personalized medical care. The ultimate goal of electronic skin is to non-invasively measure human activities under natural conditions, promoting interactive reinforcement between electronic skin and human skin. In this talk, I will review recent progress in stretchable thin-film electronics for robotics and next-generation healthcare wearables, addressing challenges and outlining the prospects of electronic skin.

### Short Biography:

Takao Someya is Executive Director and Vice President and Professor at the University of Tokyo. He also serves as Director General of the Division of University Corporate Relations, with oversight of startup initiatives. He is recognized as an inventor of electronic skins, which was featured in TIME Magazine as one of the best inventions of the year in 2005. His current research focus is on next-generation wearables with organic electronics for application to healthcare, biomedical, and robotics.