

## **下世代腦機界面：超生物順應電子**

### **Next-Generation Brain-Machine Interfaces: Materials Design and Fabrication of Ultra-compliant Neural Implants**

Design and fabrication of multifunctional biointerfaces is beneficial for the development of next-generation brain-machine interfaces. Precise controlling over the chemical and physical cues of biomaterials can create bioactive interfaces to permit the efficient promotion on the cell adhesion, growth and the extensive tissues regeneration, while it also enables the formation of biopassive interfaces for the protection on the implantable bioelectronic device from getting inevitable tissue responses. Strategies covering the incorporating novel biomimetic materials, nonconventional microelectronic fabrication techniques, and comprehensive electronic device integration strategies that are used to develop ultra-compliant neural implantable microelectrode arrays applied in central and peripheral nervous systems (CNS and PNS). We believe that next-generation bioelectronic interfaces will provide seamlessly match with soft tissues to exhibit unprecedented functionality and reliability.