Conformal Nano-bio Interfaces for Sense Digitalization

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The emerging nano-bio interfaces have created new opportunities for developing advanced sensing technologies with unparalleled sensitivity and specificity. In this talk, I will present the development of conformal nano-bio interfaces that allow for the seamless integration of nanoelectronic interfaces into biological systems for sense digitalization with maintaining function even under deformed states. In addition, I will discuss the recent development of a biphasic, nano-dispersed interface that can reliably connect soft, rigid, and encapsulation modules without the need for pastes. This interface was used to create stretchable devices for in vivo neuromodulation and on-skin electromyography. The modular integration improves signal quality and electrode performance, simplifying and accelerating the development of on-skin and implantable stretchable devices.