Sustainable Iontronics: Engineering of Ionic Matter for Neuromorphic e-SKIN

• Time: 2026.05.26. (Tue) 16:00-17:15

• Place: 104-E206 Classroom

Speaker

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Abstract

An iontronic-based artificial tactile nerve is a promising technology for emulating the tactile recognition and learning of human skin with low power consumption. However, its weak tactile memory and complex integration structure remain challenging. In this talk, we explore the significance of ion dynamics in sustainable solid-state gel electronics for neuromorphic e-SKIN applications such as tactile perception, biochemical and electrophysiological sensing, neural interfaces, and therapeutic treatments. We conclude with future perspectives and challenges in gel-based electronic devices, highlighting the need for ongoing innovation in iontronic materials to further enhance the integration of these technologies in the versatile fields. Additionally, we aim to extend our discussion to the emulation of biological perception via artificial synapses, concluding with future perspectives and challenges in neuromorphic system development.