**Solvation-involved nanoionics: New opportunities from graphene-based membranes**

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Nanoionics is a sub-field of nanotechnology and is concerned with the study and application of ion transport and storage in nanoscale systems. Despite being the key to a myriad of technologies related to energy, water and biology, experimental understanding of solvated ion transport under nanoconfinement, particularly below 2 nm, has so far been limited. In this talk, I will demonstrate how the multilayered graphene hydrogel membranes developed in my group can enable novel approaches to study solvation-involved nanoionics. The potential application of graphene-based nanoionics for energy storage and conversion, ion separation and biomedical applications will be discussed.

**References**

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