Proton conduction in alkali metal ion-exchanged porous ionic crystals

This work reports that Li⁺ in an alkali metal-ion exchanged porous ionic crystal forms a dense and extensive hydrogen-bonding network of water molecules with mobile protons leading to a high proton conductivity (> 10⁻³ S cm⁻¹). The crystals do not contain environmentally incompatible elements or functional groups, and most importantly, this is the first comprehensive work discussing the effect of alkali metal ions toward proton conduction in porous crystals.