

Hydrated ions as molecular-ball-bearings

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The combination of tenacious attachment of hydration layers to ions in aqueous salt solutions, together with the potential lability of these layers (covering some 14 orders of magnitude in exchange/relaxation rates) leads to interesting nanomechanical properties, including the long-known hydration repulsion. In recent years the central role of such hydrated ions in lubrication phenomena in both synthetic and especially biological systems has been pointed out¹⁻⁵. The talk will focus on recent developments, including the effect on water and hydrated ions of confinement by metallic as well as dielectric surfaces.

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