

EINLADUNG ZUM
WIENER PHYSIKALISCHEN KOLLOQUIUM

**INTERFACIAL WATER AT BIOLOGICAL
AND INORGANIC SURFACES:
SUPER CAPACITORS, AQUEOUS LUBRICATION
AND POSSIBLE HEALTH ISSUES
OF RADIO-FREQUENCY RADIATION**

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The molecular layer of water molecules on surfaces, the so-called hydration layer, is important for a whole number of properties of biological as well as technological surfaces. Insight can be gained from all-atomistic simulations in conjunction with appropriate continuum modeling.

- Dielectric properties of interfacial water layers are important for the design of high-power capacitors, and can be spatially resolved in simulations.
- Hydrophobic (water-repelling) surfaces in contact with water show a pronounced depletion layer with a thickness of a few Angstroms within which the water density is highly reduced, leading to superlubrication behavior which is relevant for technological low-friction applications.
- Hydration water at biological membranes absorbs electromagnetic radiation specifically in the 0.1-10 GHz range that is used for radio communication. Possible health issues are discussed.

Montag, 13. Jänner 2014, 17:30 Uhr
(ab 17:00 Uhr Kaffee)

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