



Beitrag ID: 36

Typ: Talk

## Charge Density Waves that Guide Critical Composition Fluctuations

*Dienstag, 8. Oktober 2024 17:30 (15 Minuten)*

Binary liquids may show critical composition fluctuations if the temperature and composition are close to the critical point. When adding ionic surfactants (or antagonistic salts) the whole system gets dominated by the ions that are arranged locally in lamellae that display the charge density waves. The domains only fluctuate along the surfaces in 2 dimensions on short time scales. Only at longer time scales of milliseconds, the charge density waves take over and the third dimension springs to life. Many details of the system 3-methyl pyridine / heavy water and sodium tetraphenylborate support this view.

Binary fluids are interesting in many aspects such as electrolytes in batteries or fuel cells and electrolyzers. But also applications as skimming where the liquids are separated may be interesting. Thus, the fundamental understanding of binary fluids may support enhanced applications in the near future.

**Hauptautor:** Dr. FRIELINGHAUS, Henrich (Jülich Centre for Neutron Science at MLZ, Forschungszentrum Jülich GmbH, Garching, Germany)

**Co-Autoren:** SAHA, Debasish; HOLDERER, Olaf (JCNS); DUBEY, Purushottam (Forschungszentrum Jülich am MLZ)

**Vortragende(r):** Dr. FRIELINGHAUS, Henrich (Jülich Centre for Neutron Science at MLZ, Forschungszentrum Jülich GmbH, Garching, Germany)

**Sitzung Einordnung:** Industrial applications & Emulsions

**Track Klassifizierung:** Emulsions