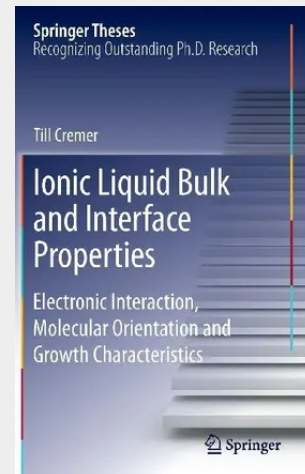


Ionic Liquid Bulk and Interface Properties

Electronic Interaction, Molecular Orientation and Growth Characteristics

In this thesis, Till Cremer investigates the bulk properties of ionic liquids (IL), the IL/vacuum interface and the IL/solid interface. For these studies the author primarily uses angle-resolved X-ray photoelectron spectroscopy under ultrahigh vacuum conditions. ILs represent a class of materials with unique physico-chemical properties. Many applications take advantage of the extremely low vapor pressure of aprotic ILs to fabricate permanent, non-volatile liquid coatings on solid materials. The author focuses on issues related to thin IL coatings, in particular concerning new catalytic concepts such as the supported ionic liquid phase (SILP) and solid catalyst with ionic liquid layer (SCILL) systems. Till Cremer presents a number of fundamental contributions to the new field of "Ionic Liquid Surface and Interface Science". Highlights are his results concerning anion/cation-interactions and the growth of ultrathin layers of ionic liquids on various substrates in the context of supported ionic liquid catalysis. His results have significantly contributed to the present level of understanding in the field and accordingly he is author and coauthor of ten publications on the topic in high-ranked journals.

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