

Wechselwirkungen in Molekülkristallen, 162 [1, 2].

Di(arylsulfonyl)amine – geeignete Liganden für lipophil umhüllte

Polyionen-Aggregate mit Cs⁺-Schichten variabler Dicke

Interaction in Molecular Crystals, 162 [1, 2]. Di(arylsulfonyl)amines – Ligands for Lipophilically Wrapped Polyion Aggregates with Cs⁺-Layers of Variable Thickness

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Herrn Professor Herbert W. Roesky zum 65. Geburtstag gewidmet

Z. Naturforsch. **55 b**, 1053–1066 (2000); eingegangen am 15. Juni 2000

Di(arylsulfonyl)amide Salts, Crystal Growth, Lipophilically Wrapped Cs⁺ Polycation Layers

Di(arylsulfonyl)amides are presented as novel anionic ligands for polycation aggregates. Starting from the structures of Ag⁺ and Na⁺ salts registered in the Cambridge Structural Database, the largest alkali cation Cs⁺ with high coordination number has been selected and in extreme low gradient crystallisation single crystals of both cesium-di(benzenesulfonyl)amide and cesium-di(4-toluenesulfonyl)amide were grown. Their structure determinations revealed that both polymeric salts contain cation layers (Cs⁺)_∞: The one lipophilically wrapped by di(benzenesulfonyl)amide ligands exhibits hexagonal (Cs⁺)₆ subunits, whereas the methyl-substituted di(4-toluenesulfonyl)amide ligands of the other one are interspersed within (Cs⁺)_∞ layers. The resulting lipophilically wrapped sheets with Cs⁺ cations of ten- and twelve-fold coordination to disulfonyl O and C centers vary in their overall thickness of 1.77 nm and 1.39 nm because the toluene substituents in the thinner one are tilted. The remarkable effects caused by the 4-methyl substitution of the phenyl rings determine the structures of the parent di(arylsulfonyl)amines as well: Contrary to the polymeric phenyl substituted derivative, the toluene homologue crystallizes in dimers. The single crystals grown of the closely related di(arylsulfonyl)amides with or without para methyl substituents and their poly(Cs⁺) aggregates without any solvent inclusion show hitherto unknown structural motifs and, therefore, further improve our knowledge of alkali salt self-organisation phenomena in crystals.