

Synthesis and Characterization by Diffraction of X-rays of a new Hybrid Compound based on Tin

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Organic-inorganic hybrid materials have attracted a great deal of attention during the past few decades because of their ionic, electrical, magnetic and optical properties [1-3]. Only one crystal structure of an arylammonium hexachlorostannate(IV) compound has been reported previously [4]. In this study we present a new organic-inorganic hybrid compound with the formula $(R-NH_3)_2SnX_6$, it promises both the superior carrier mobility of inorganic semiconductors and the processability of organic materials.

The title compound, $(C_7H_8NO_2)_2(SnF_6)$, crystallized in the $C2/c$ space group of the monoclinic system, was prepared from aminobenzoic acid and tin(II) fluoride in hydrofluoric acid. The structure can be described by alternating layers of SnF_6^{2-} and $C_7H_8NO_2^+$ ions along the a axis. The cations and anions are linked to each other through strong hydrogen bonds, formed by all H atoms covalently bonded to the N and O atoms. This three-dimensional complex network of hydrogen bonds reinforces the cohesion of the ionic structure.

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