

Letter to the Editor

A Layered Clathrate Hydrate Structure of Tetrapropyl Ammonium Fluoride

JANUSZ LIPKOWSKI and ROMAN LUBORADZKI

Institute of Physical Chemistry, Polish Academy of Sciences, Kasprzaka 44/52, 01 224 Warszawa, Poland.

KONSTANTIN UDACHIN, and YURIJ DYADIN

Institute of Inorganic Chemistry, Siberian Branch of the Academy of Sciences, 630090 Novosibirsk, Russia

In the course of physicochemical studies of the water/tetraalkylammonium fluoride systems, a distinct solid phase has been obtained of composition $C_{12}H_{28}NF \cdot 11H_2O$.

A single crystal of the compound was used for extensive X-ray structure studies. A full report on this will be submitted soon, after completion of the guest cation ordering-disordering pattern. In this report we demonstrate qualitatively the new, interesting structure, in which, as illustrated, the tetraalkylammonium cations span the space between the layers of water molecules aggregated in zigzag chains of hydrogen bonds. For the sake of clarity in the figure only one orientation of the guest cations is shown (space filling drawing mode) and the host layers are depicted in the stick mode.

Crystal data: $a = 7.649(2)$; $b = 14.920(6)$; $c = 43.61(2)$; *Fddd*. Structure refined to $R = 0.039$ for 901 observed reflections. These data refer to a temperature of $-50^\circ C$.

