

When in the presence of the strong hydrogen bonds, the weak hydrogen bonds gain an importance.

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Rok wydania

2006

Czasopismo

CrystEngComm

Numer woluminu

8

Strony

66-74

DOI

10.1039/B515365D

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The crystal structures of brucinium hydrogen *N*-benzoyl-D-aspartate tetrahydrate (**1**), brucinium *N*-benzoyl-D-asparaginate trihydrate (**2**), brucinium *N*-*tert*-butoxycarbonyl-L-alaninate 2-propanol solvate hydrate (**3**) and brucinium *N*-*tert*-butoxycarbonyl-L-proline ethanol solvate hydrate (**4**) were determined. In all crystals under investigation, the brucinium cations form corrugated layers with anions and solvent molecules between them. Our investigations concerning the nature of the brucine layers show that such self-assemblies provide optimally appropriate surfaces for interactions in the hydrophilic environment from which the crystals of brucinium salts were usually grown. In an effort to obtain the most appropriate surfaces, weak hydrogen bonds gain in importance. This suggestion seems to be confirmed by the presence of the same pattern of the weak hydrogen bonds that one can observe in many crystals containing brucine (molecular/ionic)

Adres publicznyDOI <https://doi.org/10.1039/B515365D>Strona internetowa wydawcy<https://www.rsc.org/>