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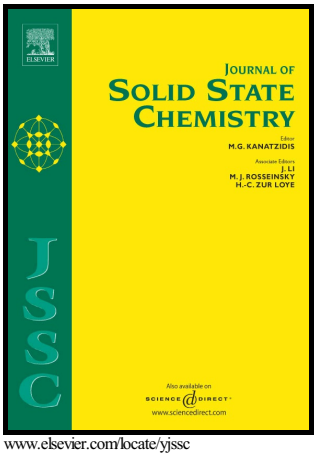

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Dehydration-Driven Evolution of Topological Complexity in Ethylamonium Uranyl Selenates

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Abstract

Single crystals of four novel uranyl selenate and selenite-selenate oxysalts with protonated ethylamine molecules, $(C_2H_8N)_2[(UO_2)(SeO_4)_2(H_2O)](H_2O)$ (**I**), $(C_2H_8N)_3[(UO_2)(SeO_4)_2(HSeO_4)]$ (**II**), $(C_2H_8N)[(UO_2)(SeO_4)(HSeO_3)]$ (**III**), and $(C_2H_8N)(H_3O)[(UO_2)(SeO_4)_2(H_2O)]$ (**IV**) have been prepared by isothermal evaporation from aqueous solutions. Uranyl-containing 1D and 2D units have been investigated using topological approach and information-based complexity measurements that demonstrate the evolution of structural units and the increase of topological complexity with the decrease of H_2O content.

Graphical abstract

Single crystals of four novel uranyl selenate and selenite-selenate oxysalts with protonated ethylamine molecules have been prepared by isothermal evaporation from aqueous solutions. Structural analysis and information-based topological complexity calculations points to the possible sequence of crystalline phases formation, showing both topological and structural branches of evolution.

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