POLYMORPHISM OF SUPRAMOLECULAR RECEPTORS: PRACTICAL APPLICATION

Ziganshin M.A., Gorbatchuk V.V.

Butlerov Institute of Chemistry, Kazan (Volga Region) Federal University, Kremlevskaya ul. 18, Kazan, 420008 Russia, e-mail: Marat.Ziganshin@ksu.ru

Polymorphism of solid receptors, giving the formation and collapse of metastable porous structures, can affect significantly their binding ability for vapors and gases [1-3]. Substances capable of polymorphism and/or pseudo-polymorphism can be used as new sorption materials with high sorption and adjustable selectivity, sorption capacity and thermal stability for solving problems of energy, environment and medicine.

In present study, the parameters of polymorphic and pseudo-polymorphic transitions in the phase of supramolecular receptors were determined using simultaneous thermogravimetry and differential scanning calorimetry analysis combined with mass-spectrometry of evolved vapors (TG/DSC/MS).

Sorption properties of supramolecular receptors in different modifications toward the vapors of organic compounds were studied with the static method of headspace gas chromatographic analysis, and quartz crystal microbalance (QCM) sensor.

As the result of study the new approach to molecular recognition of vapors of some organic guests was offered, which is based on the use of polymorphism and pseudo-polymorphism of supramolecular receptors [4].

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