

MS30-P03 | CRYSTALLIZATION-INDUCED STEREOISOMERIC RECOGNITION AND STEREOCHEMICAL TRANSFORMATIONS OF CHIRAL ORGANIC MOLECULES: ROLE OF SUPRAMOLECULAR SYNTHONS

Lodochnikova, Olga (A.E. Arbuzov Institute, Kazan, RUS)

Supramolecular chemistry developed in 1970s, following on from and elaborating the ideas of organic chemistry, and borrowing some key concepts from it. One of the most complete and successful examples thereof is the concept of supramolecular synthon. The history of stereochemistry, in turn, goes back more than one and a half centuries. Two aspects of stereochemistry are commonly distinguished: Static and dynamic. The concept of stereochemistry was also quite successfully extended to the supramolecular area in the sense of a field of chemistry that studies the mutual arrangement of structural blocks within complex associates. In other words, currently, the basic area of stereochemistry, namely static stereochemistry, has been adapted to the supramolecular area.

At the same time, accumulating much information on various supramolecular associates formed through hydrogen bonds or other intermolecular interactions in a different and complex manner requires transferring the ideology and the basic concepts of dynamic stereochemistry to the supramolecular area. Just as classical dynamic stereochemistry considers the spatial features of reaction behaviors, so supramolecular dynamic stereochemistry will focus on the spatial features of binding molecules in associates via intermolecular interactions. The time is ripe for introducing the concept of stereochemical transformation, that is amplifying the stereochemical specifications of a molecule at the stage of forming some intricate supramolecular associates. The driving force of stereochemical transformation is usually the tendency to forming one or another stable supramolecular synthon.

This work was financially supported by the Russian Science Foundation (grant No 17-13-01209).