

Russian Chemical Bulletin 2005 vol.54 N9, pages 2104-2112

Synthesis, structure, and complexation properties of tetraamide derivatives of thiacalix[4]arene in different conformations

Solovieva S., Grüner M., Omran A., Gubaidullin A., Litvinov I., Habicher W., Antipin I., Kononov A.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The interaction of p-tert-butylthiacalix[4]arene with N,N- diethylchloroacetamide was studied in the presence of alkali metal carbonates in acetone. Three stereoisomers, viz., cone, partial cone, and 1,3-alternate, of the tetraamide derivative of thiacalixarene substituted at the lower rim were synthesized selectively using the template effect of alkali metal cations, as well as a complex of the 1,3-alternate stereoisomer with potassium chloride. The structures of the compounds synthesized were studied by 2D NMR spectroscopy. A high extraction ability of the compounds toward alkali metal cations was demonstrated. © 2005 Springer Science+Business Media, Inc.

<http://dx.doi.org/10.1007/s11172-006-0084-7>

Keywords

Alkali metals, Amides, Extraction, Inclusion compounds, NMR spectroscopy, Stereoisomerism, Template effect, Thiacalix[4]arenes, X-ray diffraction analysis