SYNTHESIS AND MOLECULAR RECOGNITION OF PROTON-IONIZABLE CROWN ETHERS

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Proton-ionizable crown ethers at higher pH than their pKₐ values are mostly ionized to anions which increase the cation-ligand complex stability with enhancement of selectivity, and avoid the need for a counter anion in cation transport through an aqueous source phase/organic membrane/aqueous receiving phase system.

We are interested in crown ethers having a proton-ionizable moiety as a part of the macroring, because after deprotonation the negatively charged donor atom is in the coordination sphere which surrounds the complexed cation.

In my talk I’ll deal with the synthesis of crown ethers containing pyridone and acridone subcyclic units (see Figure). The complexation and transport studies on some of the ligands will also be presented.

Figure. Structures of proton-ionizable crown ethers

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