Macrocyclic host molecules are important multidentate toolboxes in modern supramolecular chemistry. Depending on their size, shape and electronic properties macrocycles found many useful applications in diverse host-guest transport systems, sensing, extraction, catalysis etc. Very recently, the new class of cationic macrocycles, pillar\(n\)pyridiniums $P[n]P$, has been synthesized and introduced into supramolecular arena. [1] Pillar\(n\)pyridiniums are cyclic oligomers consisted of pyridynium units linked through nitrogen and para carbon with methylene bridges. The open cylindrical cavity surrounded by cationic electron-deficient pyridinium units provide a highly potential platform for anion recognition and anion-induced self-assembly. Moreover, the simple structure, straightforward synthesis and good aqueous solubility are attractive advantages of these novel macrocyclic hosts.

We would like to present structural aspects and solid state self-assembly features of these inherently cationic macrocycles. Particularly, the conformational properties in the solid state (rigidity versus flexibility of the macrocyclic skeleton), the binding of different anionic guests, main non-covalent interactions involved in the molecular recognition and self-assembly processes with anions will be discussed.