MS35-P14 | CRYSTAL STRUCTURE AND SELF-ASSEMBLY OF PILLAR[N]PYRIDINIUMS

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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.

[1] S. Kosiorek, B. Rosa, T. Boinski, H. Butkiewicz, M .P. Szymanski, O. Danylyuk, A.Szumna, V. Sashuk, *Chem Commun.*, **53** (2017) 13320; S. Kosiorek, H. Butkiewicz, O. Danylyuk, V. Sashuk, *Chem Commun.*, **54** (2018), 6316.