

## Poster Presentation

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### *Deprotonation of resorcinarenes and novel ammonium salt complexes*

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The bowl shape cavity of resorcinarenes usually stabilized by four intramolecular hydrogen bonds offers an interesting array of binding modes such as C–H··· $\pi$  and cation··· $\pi$  interactions to recognize a variety of guests. The multiple hydroxyl groups can participate in a series of intermolecular hydrogen bonds with guest molecules. This unique cone conformation of resorcinarenes has led to the synthesis of many receptors with convergent arrangement of binding sites suitable for molecular recognition in many applications. Unfunctionalized resorcinarenes are known to easily form molecular complexes with guests of varying shapes and sizes. Amines are very common bases used in many catalytic processes. A good example is the use of amines as bases in the alkylation and acylation of resorcinarenes leading to cavitands, carcerands, hemicarcerands and velcrands. The use of amines in such reactions is to deprotonate the resorcinarene hydroxyl groups, hence facilitating the alkylation and acylation processes. The subsequently protonated ammonium cation then forms interesting supramolecular complexes with the anionic and dianionic resorcinarenes. Furthermore, secondary and tertiary ammonium salts possess hydrogen bond donating -NH<sub>2</sub> and -NH respectively and these can further enhance their complexation through intermolecular hydrogen bonds. Here we present our recent examples of supramolecular assemblies resulting from the deprotonation of resorcinarenes by mono- and dibasic amines. Also, our latest supramolecular co-crystals between resorcinarenes as the receptors and a series of secondary and tertiary mono- and diammonium cations are illustrated.

[1] N. K. Beyeh, A. Valkonen, K. Rissanen, *CrystEngComm*, 2014, in press., [2] N. K. Beyeh, F. Pan, A. Valkonen, K. Rissanen, *Org. Biomol. Chem.*, submitted.

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