## MS33-P118 - LATE | STABILITY OF NON-TOXIC GAMMA-CYCLODEXTRIN-BASED METAL–ORGANIC FRAMEWORK IN VARIOUS SOLVENTS

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Metal–organic frameworks (MOFs) have been known for decades, and they continuously have gained interest because of their potential application in the fields of medicine and pharmacology for drug storage, delivery and controlled release. For use in healthcare applications MOFs need to be toxicologically acceptable to human. Such kind of edible MOFs can be easily obtained from readily available components, e.g. γ-cyclodextrin (γ-CD) and potassium hydroxide. γ-CD has been used to prepare biocompatible and non-toxic MOFs due to the presence of -OCCO- binding groups in the primary and secondary faces, which can be readily used to form complexes with alkali and alkaline earth metal ions.

In this study γ-CD-based metal ($K^+$) MOF (γ-CD-MOF-1) was synthesized as described in [1] and its stability in various solvents was verified by single-crystal X-ray structure analysis. Symmetry changes of the examined crystals from cubic to orthorhombic was observed in diethyl ether, dichloromethane (DCM) and toluene. The symmetry of the γ-CD-K crystal is lowered. Major changes of the sample crystals occurred in DCM and toluene, where two γ-CD molecules are bonded by 4 potassium cations, whereas in γ-CD-MOF-1 8 potassium cations are bonded to one γ-CD molecule. Thereby γ-CD tori arrangement in crystal structure is different if compared to γ-CD-MOF-1 and the $(\gamma\text{-CD})_6$ cubes are not observed in these crystals. Meanwhile, packing similarity to the mother crystal along the *a* direction is maintained.

[1] Smaldone, R. A.; et al.Metalorganic frameworks from edible natural products. *Angew. Chemie - Int. Ed.* **2010**, 49, 8630–8634.