P18 - MOISTURE RESISTANT CYCLODEXTRIN-BASED METAL-ORGANIC FRAMEWORKS (MOFs) WITH ENCAPSULATION OF DYES FOR OPTICAL APPLICATIONS

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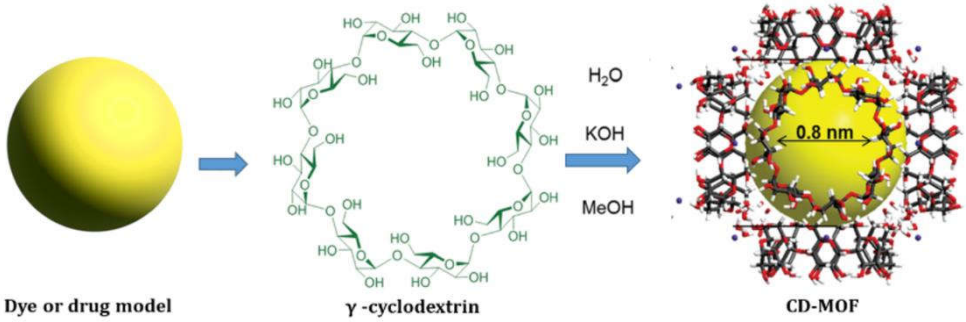
Keywords: CD-MOF, esterification, palmitic acid

Porous materials, such as Metal–Organic Frameworks (MOFs)[1] have been widely known for their characteristics as coordination compound materials because of their high surface area, high porosity, tunability, etc. Especially natural and renewable cyclodextrin MOFs (CD-MOFs), have opened a new channel of research in light of their non-toxic, edible, and renewable characteristics, which led to their applications into numerous directions including drug delivery, sensors, food packaging, electrical conductors,...



Based on this, it was reported [2] that novel core-shell structured CD-MOFs based on epitaxial seed growth and layered by different dyes can achieve multi-color luminescence, but unfortunately, CD-MOFs which rapidly disintegrate when exposed to humid conditions, the practical applications face serious challenges and even are hampered in many cases by their moisture-sensitive nature.

Here, we report on the optimized synthesis of water-stabilized CD-MOF nanoparticles with palmitic acids via surface modification by esterification. In addition, moisture resistant MOFs can be used to load dyes, which makes them potentially useful as nanocarriers for optical applications.

References:

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