

Einladung zum Vortrag von

Prof. Linda S. Shimizu

University of South Carolina, Columbia

**“Functional materials from self-assembling
bis-urea macrocycles”**

Porous materials are applicable to nanofluidics, to catalysis, and to gas storage and can be used as controlled nanoenvironments to stabilize reactive species or facilitate selective reactions. Our group has focused on macrocyclic building blocks that are constructed from urea groups and organic C-shaped spacers. These simple building blocks are remarkably robust and assemble in high fidelity to give columnar structures. A subset of nanoporous molecular crystals, the columns are held together by non-covalent interactions. Modifying the C-shaped spacer alters the size, shape, and functionality of the columns. Macrocycles with larger cavities afford guest-accessible channels that can be used to uptake guests and to study the diffusion of guests through homogeneous 1-dimensional tubes. These porous crystals have also been applied as a reaction vessel to facilitate photochemical reactions including dimerizations, oxidations mediated by singlet oxygen, and radical polymerizations. Controlled supramolecular assembly of benzophenone, a well-known triplet sensitizer was also found to modulate its photophysics and to generate long-lived stable organic radicals. Assembled materials with exterior functional groups can expand like clays to bind guests between columns. This talk examines the optimal design of these materials and probes their utility.

Mittwoch, 21. März 2018, 16:15 Uhr
Hörsaal 3 der Fakultät für Chemie
Währinger Straße 38, 1090 Wien

Kai C. Hultsch
Institut für Chemische Katalyse

Veronika Somoza
Vizedekanin

Bernhard Keppler
Dekan

Lothar Brecker
Vizedekan