

THE 2015 M. FREDERICK HAWTHORNE LECTURE

Honoring

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Bioinspired Sponges: Functional Metal-Organic Frameworks (MOFs)

Abstract: Metal-organic frameworks (MOFs) are an emerging class of solid-state materials built from metal-based nodes and organic linkers. They exhibit permanent porosity and unprecedented surface areas which can be readily tuned through coordination chemistry at the inorganic node and organic chemistry at the linkers. The high porosities and surface areas are highly attractive in the context of chemical threat filtration and decomposition as well as other catalytic processes. As exemplified by many catalytic enzyme assemblies in nature, site-isolation is a powerful strategy for performing catalytic reactions to synthesize complex molecules in an efficient way. MOFs provide an exciting platform for deploying different homogenous catalysts as building blocks. Importantly, the catalytically active moieties in these materials can be made in a site-isolated fashion and the cavities surrounding them can be engineered to conceptually mimic enzymes. This talk will address the catalytic activity of few examples of such materials.

Wednesday, April 1, 2015 - CNSI Auditorium - 4:00 pm

Reception to follow

The 2015 M. Frederick Hawthorne Lecture is made possible by the Raymond and Dorothy Wilson Endowment.

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