

UNIVERSITY OF RHODE ISLAND

Department of Chemistry

SEMINAR

Room 234 Pastore Hall

3:00 p.m, Wednesday, March 30, 2016

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URI

***“Hybrid Calix-arenes for green
sulfoxidation reactions”***

HOST Louis Kirschenbaum

Department of Chemistry

401-874-2340

Hybrid Calix-arenes for green sulfoxidation reactions

Abstract

The calix-[n]-arenes are cyclic/cone shaped structures¹. The smallest calixarene has four phenyl rings, and the largest has eight phenyl rings. These calixarenes are currently being used in fields such as supramolecular chemistry for molecular recognition, catalysis and self-assembly². This particular presentation focuses on the catalysis aspect of calixarenes and synthesis of hybrid-calixarenes. The combination of calixarenes with an inorganic moiety results in hybrid calixarenes, which can be used in catalysis. The inorganic moieties that were used in this study were polyoxomolybdates, which are Mo-Oxygen nanosize anionic clusters. In this study this hybrid-calixarene has been used to optimize and enhance the sulfoxidation of thioethers with low catalyst loading³. Also interestingly the catalyst can be reused even after the reaction has been performed on large scale. This presentation will focus mainly on synthesis of hybrid-calixarenes, polyoxometalates and use of hybrid-calixarenes to catalyze sulfoxidation reactions of various thioethers.

- (1) Gutsche, C. D. *Acc. Chem. Res.* **1983**, *16*, 161–170.
- (2) Rodler, F.; Schade, B.; Backes, S.; Hampel, F.; Böttcher, C.; Clark, T.; Hirsch, A. *J. Am. Chem. Soc.* **2015**, *137*, 3308–3317.
- (3) Meninno, S.; Parrella, A.; Brancatelli, G.; Geremia, S.; Gaeta, C.; Talotta, C.; Neri, P.; Lattanzi, A. *Org. Lett.* **2015**, *17*, 5100–5103.

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