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DEPARTMENT OF CHEMISTRY

Modeling Enzymatic Reactivity with Copper Coordination Complexes

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Synthetic models of enzyme intermediates play an important role in evaluating mechanistic hypotheses for critical biochemical reactions. In the first part of my talk, I will present the synthesis of tricopper clusters as small-molecule models of multicopper oxidases, a class of copper proteins that catalyze four-electron reduction of O_2 to H_2O. We found that an enzyme-like macrocyclic ligand can provide the rigid coordination environment to support multi-electron multi-proton transfers at tricopper clusters. In the second part of my talk, I will discuss how synthetic models of monocopper oxygenases can be applied in the synthesis of pharmaceutically relevant organic molecules. Inspired by lytic polysaccharide monooxygenases, we develop a catalytic C-H fluorination method that selectively produces monofluorinated products in an undivided electrochemical cell at room temperature.

Students, meet the speaker after the seminar in a student/postdoc session from 4:45-5:15 pm

Date: Fri, Jan. 28, 2022
Time: 3:30-4:30 pm
Location: Virtual Seminar (Zoom)

https://wvu.zoom.us/j/96144654608?pwd=RjVDaEUyNXovYnNCalNNd0prNCtnUT09