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COLLEGE OF ARTS & SCIENCES

Department of Chemistry

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Redox-induced reactivity in non-porphyrin $\{RuNO\}^{6/7/8}$ complexes.

ABSTRACT:

We recently demonstrated that [Ru(porphyrin)(NO)Cl] complexes undergo diffusion-rate-limited chloride-for-solvent exchange following reduction in THF. Electronically similar non-porphyrin complexes such as [Ru(salchy)(NO)Cl] (salchy = N,N'-bis(3,5-di-tert-butylsalicylidene)-1,2-cyclohexanediamine) also appear to undergo similar chemistry in MeCN and in THF, i.e. a reversible loss of chloride following reduction. We have been exploring the synthesis, electrochemistry and spectroelectrochemistry of new derivatives of these Schiff base species with an eye to ascertaining the fate of the NO ligand upon reduction in the presence of H+ or other Lewis acids.

BIO:

Originally from the Eastern Townships of Quebec, Mike Shaw earned a B.Sc. in Chemistry at Mount Allison University in New Brunswick, Canada in 1988. He worked with Dr. Peter Legzdins at the University of British Columbia and earned a Ph.D. in inorganic chemistry in 1993. He and his partner then moved to the University of Vermont (UVM), where Dr. Shaw was a postdoctoral fellow in Dr. William Geiger's group and where he developed a taste for electroanalytical chemistry. In 1996, Dr. Shaw began lecturing at UVM and taught classes and labs in freshman chemistry, chemistry for allied health sciences, quantitative analysis, and advanced inorganic chemistry. These experiences shaped the rest of his career.

In 1998, Dr. Shaw accepted an assistant professor position in inorganic chemistry at Southern Illinois University Edwardsville, in the metro-east region of St. Louis, MO. He was granted tenure and promotion in 2003, and promoted again to professor in 2008. He served as Chair of his department from 2012-2015 and was awarded the title "distinguished research professor" in 2017. He has made a point in his career to create opportunities for undergraduate and MS students to participate in externally-funded research experiences. Most recently his work has focused on the synthesis of biologically-relevant metal-containing molecules, with emphasis on the consequences of electron transfer on their structure and reactivity studied by electrochemistry and spectroelectrochemistry methods.