

# MULTI-PROTON MULTI-ELECTRON TRANSFORMATIONS CARRIED OUT BY 3D METAL COMPLEXES BEARING REDOX-ACTIVE LIGANDS

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Metalloenzymes take advantage of metal-ligand cooperativity to carry out proton-coupled electron transfer reactions using 1<sup>st</sup> row transitions metals (e.g., Cu, Fe). Our research lab takes inspiration of these natural catalysts to develop metal complexes bound by redox-active ligands capable of performing multi-proton multi-electron transformations. This research talk will summarize our recent efforts on the development of Cu and Fe complexes that act as electron-coupled proton buffers (see *J. Am. Chem. Soc.*, **2018**, *140*, 16625; *J. Am. Chem. Soc.*, **2022**, *144*, 16905; *Inorg. Chem.* **2024**, *63*, 9014; and *Inorg. Chem.* **2025**, *64*, 19632).