

"Designing Ligands to Capture the Sun"

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A fundamental approach to the photodecomposition of water into its elements will be set forth. Ruthenium polypyridine complexes are designed and synthesized with the purpose of photooxidizing a metal-bound water molecule to a metal-oxo species. Supramolecular dinuclear complexes that catalyze water oxidation are described along with mononuclear systems which accomplish the same purpose.