



Molecule-Based Catalysts and Hybrid Assemblies for Water Oxidation

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Water oxidation is considered one of the key reactions in the context of today's energy challenge. Water oxidation not only is a thermodynamically demanding reaction, but is also of enormous molecular complexity since it requires that the removal of four electrons and four protons from two water molecules is synchronized in a multi-step charge transfer process, together with the formation of an oxygen-oxygen bond. This lecture will describe some of our recent progress towards the synthesis of rugged and efficient molecular water oxidation catalysts that exploit cooperativity of two adjacent metal centers. Detailed mechanistic insight provides the basis for the development and fundamental understanding of hybrid systems for light-driven water splitting, containing molecular catalysts anchored to oxide absorber films, which will be tackled as part of the new CRC.