

“Energy Conversion at the Molecular Level”

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The greatest challenge facing our global future is energy currency. Within our lifetimes, energy consumption will increase by at least two-fold. This enormous increase gives rise to many misconceptions of what energy source will fuel our future. The talk will discuss these misconceptions and then address fundamental science that needs to be undertaken at the molecular level to meet the global future's energy needs. Among the fundamental science are the mechanism of multielectron reactions, the design of new electronic excited states to effect relevant energy storing multielectron transformations of substrate molecules, and the coupling of protons and electrons in these substrate transformations. Recent advances from our labs in these areas will be presented.