Public Abstract
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The sun provides more energy in one day than we, as the whole human society, use in one year. That is why, the utilization of solar energy is of great interest. Photovoltaic cells are the most wide spread and the cheapest method to convert solar into electricity. This approach, however, lacks efficient and inexpensive energy storage. Efficient conversion and storage of solar energy is key to establish it as an alternative energy source to the existing fossil and nuclear power plants. Inorganic chemistry, especially photochemistry of transition metals, provides a way to directly convert and store solar energy in chemical energy. The metal complexes are used as catalyst to split stable molecules. Most often this concept is applied to splitting of water into molecular hydrogen and molecular oxygen. An alternative to water splitting is the splitting of hydrohalic acid (HX, X = Cl and Br) into molecular hydrogen and molecular halogen. The Sharp group is interested in photochemical processes of late transition metal complexes (Pt and Ir). The research group is focused in studying photo elimination of halogens from metal complexes. In this thesis the synthesis of a series of iridium(III) and platinum(IV) complexes and their photochemistry is described.