

## The Chemistry of Metal-Diselenolene Complexes

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Since the 1960s dithiolene complexes have been intensively studied, however, the analogous diselenolene complexes have not been as well studied. Yet, the search for Se-containing ligands has been active since the 1970s. Using a combination of computational tools the role of diselenolene complexes in bioinorganic chemistry as well as in materials science was investigated. The results of this work provide new understandings into the enhancement of naturally occurring enzymes, as well as insight into the potential design of new components within dye-sensitized solar cells, catalysts for the renewable production of H<sub>2</sub>, and the capture and release of carbon dioxide. Key results will be presented.