

SYNTHESIS AND PROPERTIES OF ARENE-RUTHENIUM COMPLEXES BEARING PHOTOSWITCHABLE AZOBENZENE LIGANDS

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While the photochemistry of $(\eta^6\text{-Arene})\text{Ru}^{\text{II}}$ complexes has been well-studied and exploited for both synthetic purposes and photo-controlled activation in a biological environment, photoswitchable arene ruthenium complexes have been only scarcely reported.[1]

Organometallic complex **1**, containing *o*-sulfonamide azobenzene ligand, was found to exhibit uncommon coordination pattern with an exocyclic N=N bond. Upon irradiation, this compound cleanly undergoes *E*→*Z* photo-isomerization followed by thermal *Z*→*E* isomerization upon resting in the dark.[1,2] Derivatization with various phosphorus nucleophiles was investigated and allowed isolation of *Z*-configured complex **2**. Under appropriate reaction conditions, quantitative triphenylphosphine photo-release from *Z*-**2** was achieved through *Z*→*E* isomerization of the ligand. This process was applied to the photo-initiation of catalytic aza Morita-Baylis-Hillman reaction.[3]

The synthesis, structure and properties of a series of organometallic complexes derived from **1** and **2** will be presented, as well as the study of factors influencing their photo-isomerization behavior.

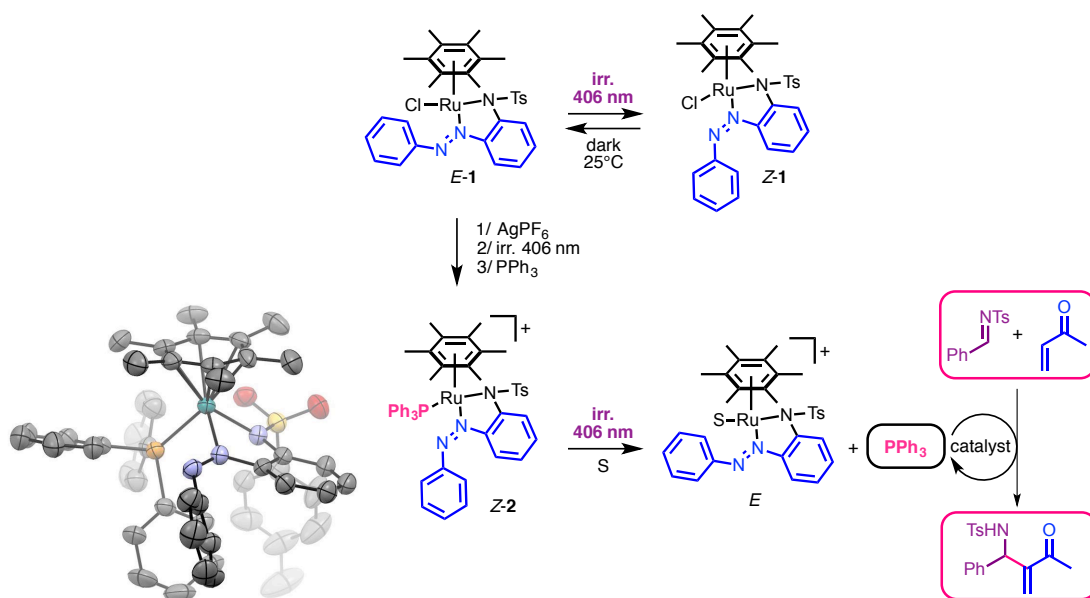


Figure 1. Synthesis, structure and ligand photo-releasing properties of complex **Z-2**

[1] C. Deo, N. Bogliotti, R. Métivier, P. Retailleau, J. Xie, *Organometallics* **2015**, *34*, 5775-5784.

[2] C. Deo, H. Wang, N. Bogliotti, Y. Zang, P. Retailleau, X.-P. He, J. Li, J. Xie, *J. Organomet. Chem.* **2016**, *820*, 111-119.

[3] C. Deo, N. Bogliotti, P. Retailleau, J. Xie, *Organometallics* **2016**, *35*, 2694-2700.