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Arene-Ruthenium Complexes Containing Azobenzene Ligands

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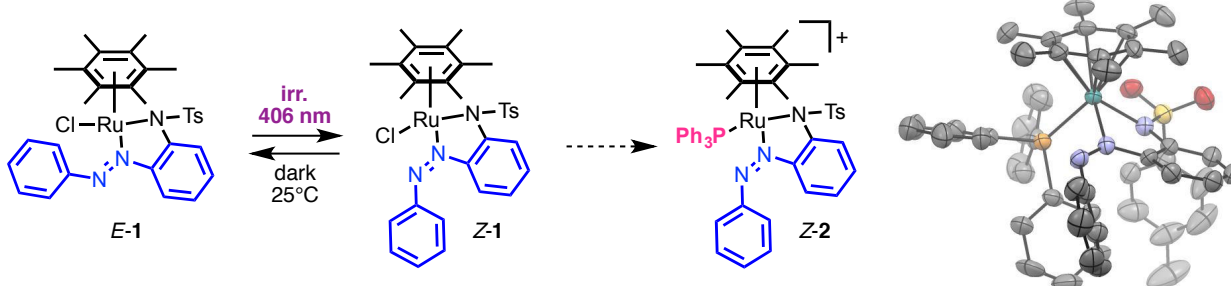
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The external manipulation of molecular systems with light is being increasingly exploited for the control of events at various scales, eventually giving rise to “smart” systems. In such context, catalytic strategies are especially appealing since modification of the properties of only a little number of chemical entities is expected to affect the entire system.

In the aim of developing new tools that could act as photo-controlled catalysts, we have investigated the properties of arene ruthenium complexes such as **1**, containing *o*-sulfonamide azobenzene ligands. These compounds were found to exhibit uncommon coordination pattern allowing clean *E*→*Z* photo-isomerization followed by thermal *Z*→*E* isomerization upon resting in the dark.^{1,2} Derivatization with phosphorus nucleophiles allowed isolation of novel phosphine-ruthenium complexes of type **2**, which undergo triphenylphosphine photo-release resulting in initiation of catalytic activity.³



The synthesis, structure and properties of these compounds will be presented and some of their applications will be discussed.

References

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.