

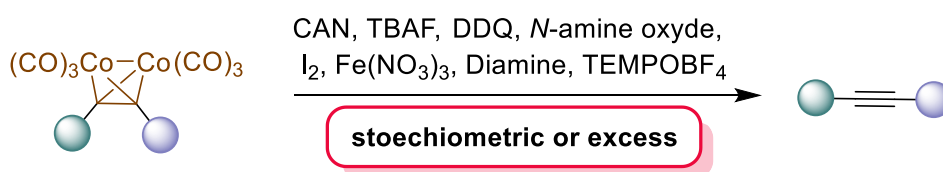
Catalytic Demetallation of Dicobalt Hexacarbonyl Complexes using Near-Infrared Photocatalysis

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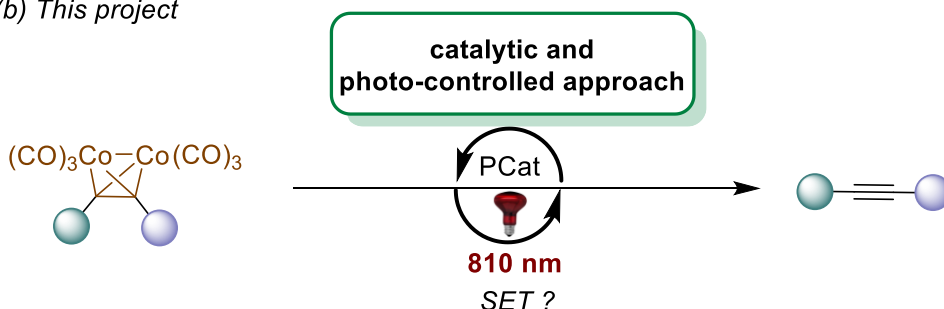
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Dicobalt hexacarbonyl complexes are widely used in organic synthesis, both for Nicholas reactions and simply to protect a triple bond.¹ At the end, the alkyne moiety is recovered by the deprotection of these cobalt-complexed alkynes which requires the use of a stoichiometric amount of a one-electron oxidizing agent such as Ceric Ammonium Nitrate (CAN).² Our goal was to develop a catalytic method of demetallation using photocatalysis. After several optimization steps, the best results were obtained with near-infrared photocatalysis.³ This method would allow photo-control of deprotection while limiting the quantity of oxidant required to a catalytic amount. This study includes a mechanistic discussion to understand if a Single Electron Transfer (SET) is involved in this reaction.

(a) State of the art



(b) This project



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