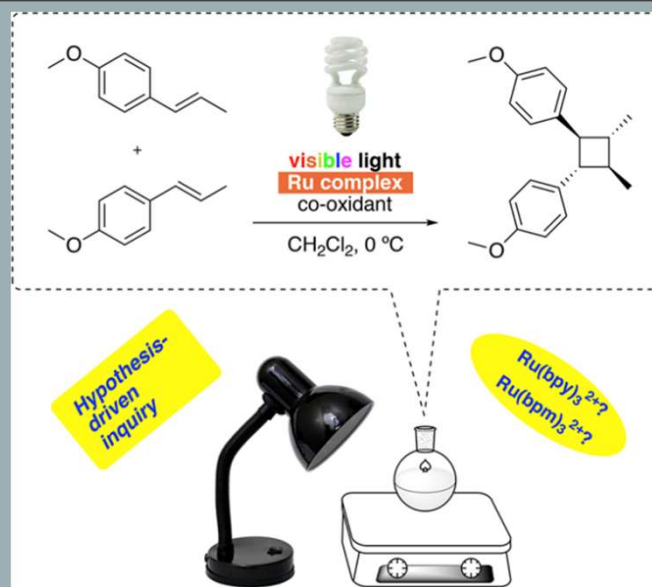


SYNTHESIS OF 1,2-DIHYDRONAPHTHALENES AND INDENES FOR SUBSTRATE SCOPE AND LIMITATION STUDIES OF SUBSTITUTED CYCLOBUTANE FORMATION VIA PHOTOREDOX CATALYSIS

Photoredox catalysis (PRC), utilizing light energy and transition metals to control single-electron transfer reactions, can produce substituted cyclobutanes, as well as many other structural motifs. Natural products containing cyclobutane rings often exhibit antiviral, antifungal, and anticancer activity; methods allowing for efficient entry into related molecular structures are of potential value. By creating a small library of olefins via a two-step synthetic route from 1-indones and tetralones, we have initiated studies toward exploring the substrate scope and limitations of Ruthenium PRC in the context of [2+2] cycloadditions. Building on the work of Chen et al., $\text{Ru}(\text{bpy})_3^{2+}$ and $\text{Ru}(\text{bpm})_3^{2+}$ will be initially screened against a small library of olefins.



Senior Seminar By: Nathan Maynard
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4:30 pm