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(NATIONAL UNIVERSITY OF SINGAPORE, REPUBLIC OF SINGAPORE, AND NATIONAL UNIVERSITY OF SINGAPORE (SUZHOU) RESEARCH INSTITUTE, SUZHOU, P. R. OF CHINA)
Photoinduced Site-Selective Alkenylation of Alkanes and Aldehydes with Aryl Alkenes
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Category
Metals in Synthesis

Key words
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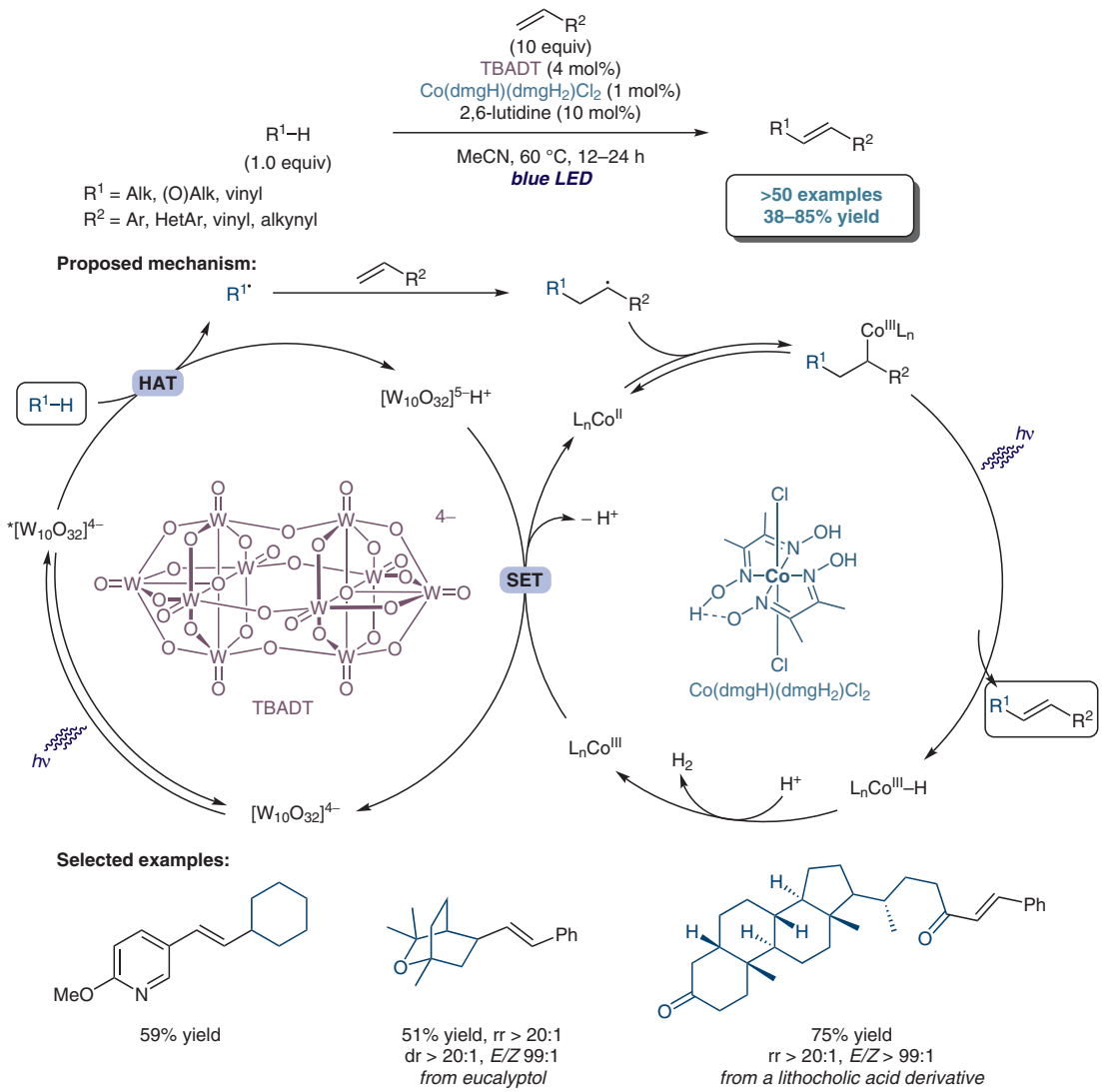
Synfact of the Month

Dual-Catalyst Photoinduced Alkenylation of Alkanes and Aldehydes via C–H Activation



Significance: The authors report a site-selective photoinduced alkenylation of various alkanes and aldehydes with aryl and heteroaryl alkenes. This dehydrogenative reaction utilizes two photoactive catalysts (tetra-*n*-butylammonium decatungstate (TBADT) as HAT agent and $Co(dmgH)(dmgH_2)Cl_2$), which eliminates the need for an external oxidant.

Comment: This mild alkenylation was used for the late-stage functionalization of diverse complex molecules, while still ensuring a high level of site-selectivity for the sterically most accessible and most electron-rich C–H bond. Wu and co-workers propose a mechanism that involves cooperation of the tungstate and the cobalt catalysts.

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