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Advances in Catalytic Oxygenation by C–H Bond Activation

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Message from the Guest Editors

The efficient catalytic oxygenation of the C–H bond still represents a challenging goal in organic synthesis, because the main problem does not lie much in the low reactivity of the unactivated C–H bond, but rather in the difficulty of achieving its oxyfunctionalization with high selectivity. Over the past few decades, a large variety of catalytic systems, ranging from metal catalysts and organocatalysts to biocatalysts, have been developed for laboratory-scale synthesis, using mostly organic and inorganic peroxides as the primary oxidants, as well as the more convenient molecular oxygen. The latter represents the oxidant of election, due to its highly atom-economical, abundant, and environmentally safe features. Thus, inspired by certain metal-containing enzymes, such as monooxygenases, catalytic C–H oxygenation through activation of dioxygen has received growing attention by both academic and industrial research.

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Special Issue