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Transition metal catalyzed direct ortho-aroylation of arene C-H bonds through aerobic oxidative coupling reaction

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Friedel-Crafts acylation of arenes is the most accepted strategy for diaryl ketone synthesis but it requires the corrosive Lewis acid $AlCl_3$. Arene pre-functionalization and organometallic reagents synthesis limits the use of metal-catalyzed carbonylative coupling. During the last few years, aroylation of arenes through direct C-H bond functionalization by transition metal complexes have been widely utilized in organic synthesis. A novel strategy for direct ortho-aroylation of arene C-H bonds by transition metal catalyst has been devised using organocatalytic dioxygen activation. This catalytic method provides new access to the synthesis of aryl ketones guided by suitably positioned directing groups. The practicability of the catalytic efficacy of this protocol was established by synthesis of bioactive molecule using C-H aroylation as crucial step. The present work provides a green and practical method to synthesize diaryl ketones which are important structural motifs in the pharmaceuticals, fragrance, dye and agrochemicals as well.

Biography

Bhavin V Pipaliya has completed his MS (Pharm) in 2012 from NIPER-Kolkata, India. Currently, he is pursuing his Doctoral studies as DST-INSPIRE Fellow under the supervision of Professor Asit K Chakraborti from NIPER-SAS Nagar, India. He has published more than 3 papers in reputed journals.

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