Polymeric Organophotocatalyst as Catalytic Oxidant for Metal Catalysis

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Being highly sustainable strategies for chemical transformations, photocatalysis has always been one of the major research interests for applications in organic synthesis. Despite the vast amounts of photocatalytic reactions developed,^[1,2,3] common choices of photocatalysts include Ir-/Rucomplexes^[4] or organic dyes.^[5] However, the high cost of the rare metals and the instability of organic dyes to high temperature and harsh chemical conditions have made the application of photocatalysis less attractive at a larger scale such as in the industry. This leads to the necessity of alternatives which overcome these limitations while still having comparable efficiency in photoreactions. The rise of porous organic materials such as polymeric organophotocatalysts fulfill the quest for cheap, green and yet robust photocatalysts.^[6] Although first examples have been shown to exhibit excellent photocatalytic properties, the compatibility of these polymeric organophotocatalysts in a dual catalysis system is mostly unexplored.^[7] We will present the use of porous organic materials as polymeric organophotocatalyst in combination with metal catalysis. These materials can serve as an economical and sustainable source of catalytic oxidant. The developed methodology could be extended to various metal catalysed procedures, highlighting the high applicability of such polymeric organophotocatalysts.

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