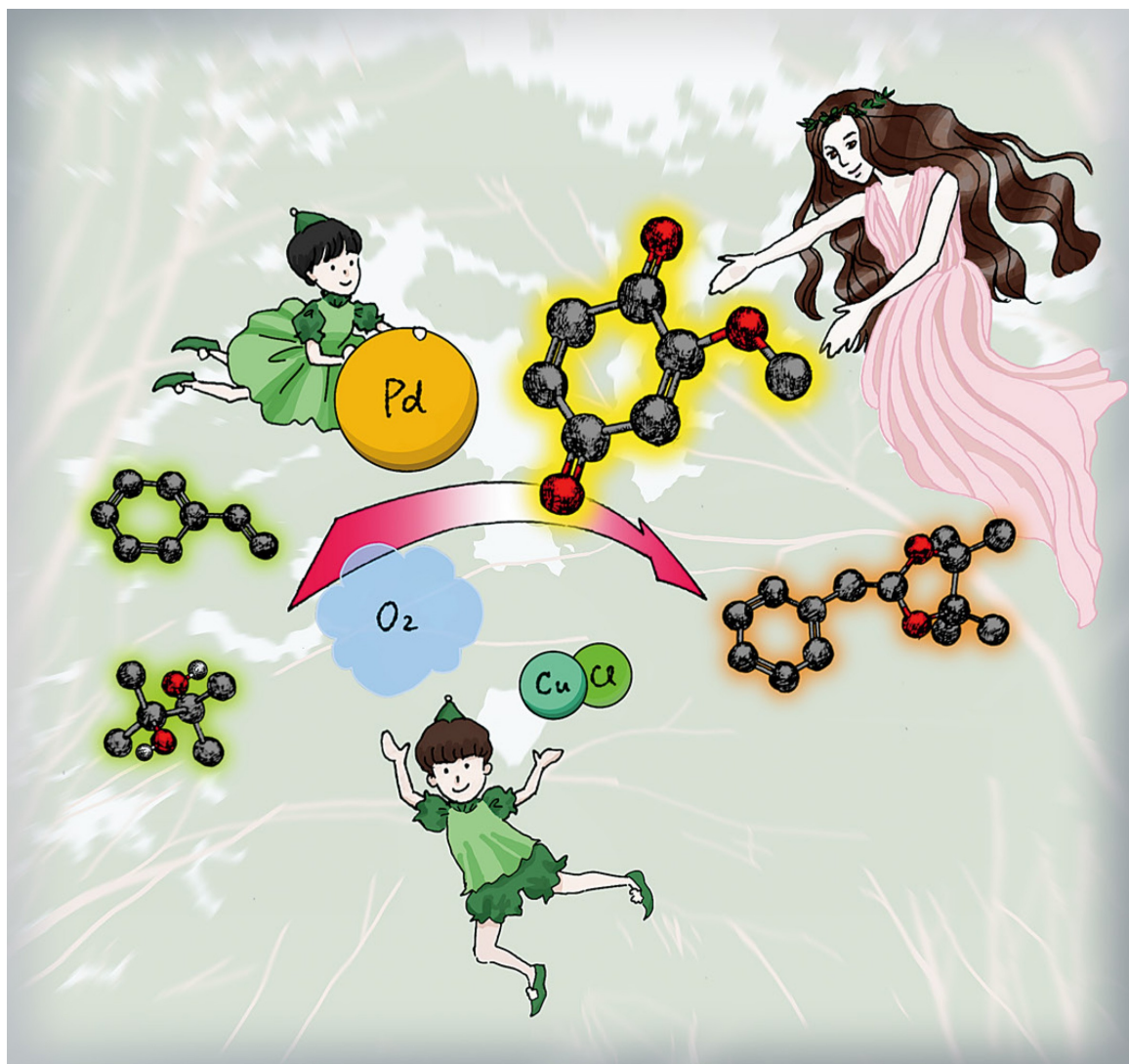


Environmental load-reducing organic transformation reactions using transition metal catalysts

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Pd/Cu-catalyzed synthesis of terminal acetals (protected compounds of aldehydes) from terminal alkenes using molecular oxygen as an oxidant

Organic carbon resources such as petroleum oil, coal, and natural gas have been decreasing at present. Toward the sustainable future, transformation reactions with extremely lower environmental load than the conventional reactions have to be developed. We have been investigating on environmental load-reducing, highly difficult transformation reactions of organic feedstock such as alkanes and alkenes using transition metal catalysts. Especially, oxidation reactions using molecular oxygen (synthesis of alcohols by oxidation of alkanes, synthesis of aldehydes by oxidation of terminal alkenes, etc.) and addition reactions which do not produce by-products (synthesis of primary alcohols by addition of water to terminal alkenes, etc.) are our current target reactions to be developed. Creation and reactivity of novel transition metal complexes which can be used as catalysts for the above reactions have also been investigated.

Keywords : low environmental load, transition metal complexes, catalysts, organic transformation reactions, green chemistry