Synthesis and Functionalization of Heterocycles

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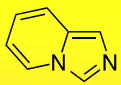
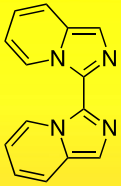
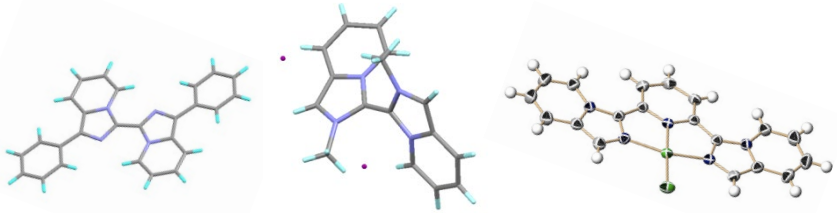


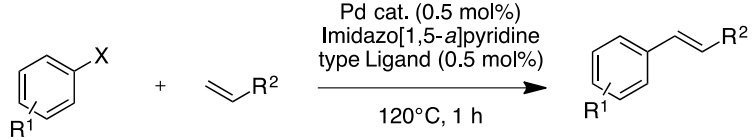
Imidazo[1,5-*a*]pyridine



Dimeric structure



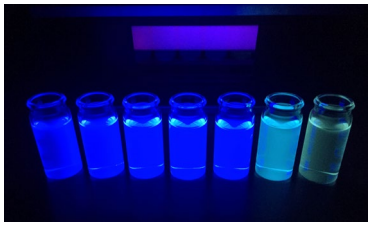
<Application as Ligands to Mizoroki–Heck Reaction>

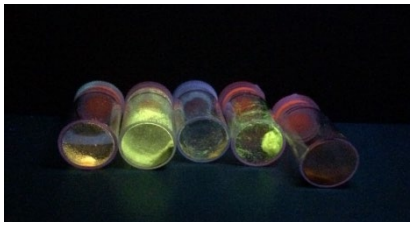


X = Br or Cl

up to 94% yield

<Fluorescence in solution and in the solid state>





Content:

Imidazo[1,5-*a*]pyridine derivatives have been drawn considerable attention because of their potential application as pharmaceutical agents and functional materials. Therefore, various molecules featuring imidazo[1,5-*a*]pyridine skelton have been synthesized and characterized.

Recently, we have synthesized the novel dimeric imidazo[1,5-*a*]pyridine. These compounds have been examined to apply as the ligand in catalytic systems and functional materials such as sensing molecules and high efficient light emitting molecules. For example, the palladium-catalyzed Mizoroki–Heck reaction of aryl bromides and chlorides with alkenes using our imidazo[1,5-*a*]pyridine-$PdCl_2$ system afforded the desired products in good-to-high yields with the low palladium loadings and short reaction times. On the other hand, the substituted dimeric imidazo[1,5-*a*]pyridines exhibited relatively strong emissions.

Keywords : Heterocycle, Functionalized molecule

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