



The effect of Al_2O_3 and ionic liquids in palladium catalyzed arylation of cyclohexene. Interaction of $\text{Hg}(0)$ with immobilized palladium.

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Three-component systems containing $\text{Pd}(\text{OAc})_2$, Al_2O_3 , and an IL (IL=ionic liquid) were applied in the Heck arylation of cyclohexene. The highest productivity and selectivity to 4-phenylcyclohexene was noted in reaction catalyzed by $\text{Pd}/\text{Al}_2\text{O}_3$ in the presence of a small amount of an IL, dimethyldidodecylammonium lactate (C). The addition of Al_2O_3 alone to the reaction catalyzed by soluble precursors, $\text{PdCl}_2(\text{PhCN})_2$ or $\text{Pd}(\text{OAc})_2$ and IL, remarkably increased conversion to 4-phenylcyclohexene. $\text{Hg}(0)$ inhibited the reaction catalyzed by $\text{Pd}/\text{Al}_2\text{O}_3$ by formation of Pd-Hg amalgam immobilized on Al_2O_3 . SEM/EDX studies of $\text{Pd}/\text{Al}_2\text{O}_3$ performed after treatment with $\text{Hg}(0)$ showed that the IL modified the surface properties of $\text{Pd}/\text{Al}_2\text{O}_3$.

Słowa kluczowe

palladium, heck coupling, Cyclohexene, ionic liquids, $\text{Hg}(0)$, TEM, SEM

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