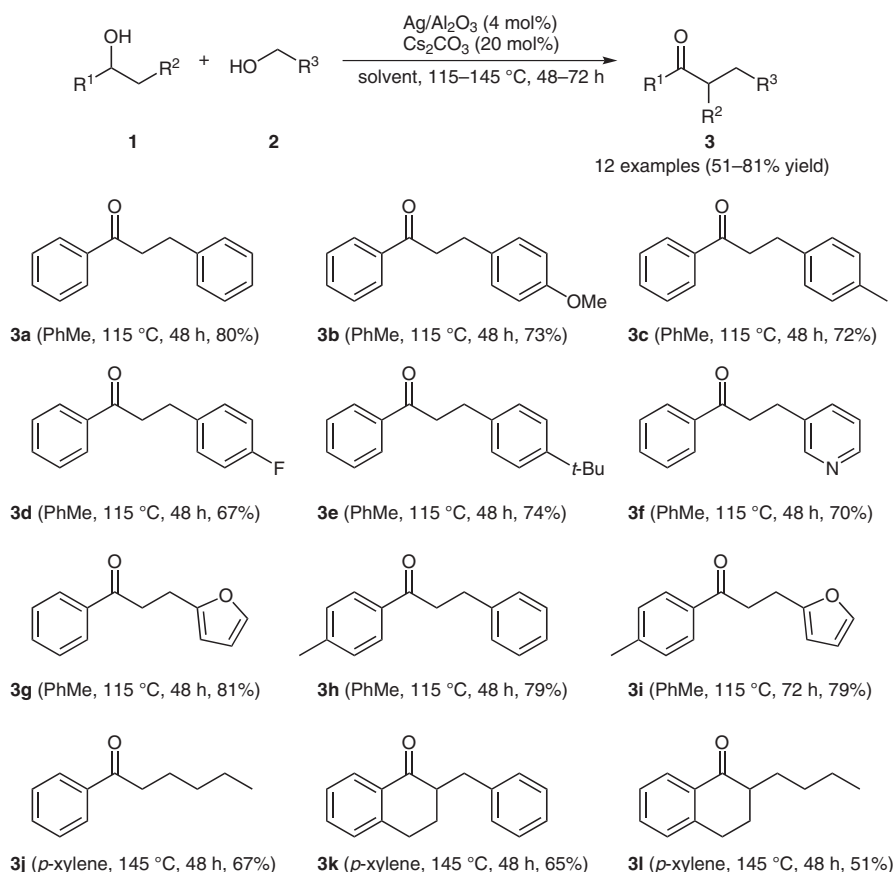


C–C Cross-Coupling of Alcohols Catalyzed by $\text{Ag}/\text{Al}_2\text{O}_3$



Significance: γ -Alumina-supported silver clusters ($\text{Ag}/\text{Al}_2\text{O}_3$) catalyzed the C–C bond formation of secondary alcohols **1** and primary alcohols **2** in the presence of Cs_2CO_3 to give the corresponding ketones **3** in 51–81% yield (12 examples). The catalyst was recovered by filtration and reused twice without significant loss of activity after the reactivation (e.g., formation of **3a**; 1st reuse: 77%, 2nd reuse: 78%).

Comment: The authors have previously reported the preparation of $\text{Ag}/\text{Al}_2\text{O}_3$ and its application to dehydrogenation of alcohols (*Chem. Eur. J.* 2009, 15, 2341). The authors proposed a reaction pathway for the present coupling as follows: (1) dehydrogenation of **1** and **2** forming the corresponding ketone and aldehyde along with co-production of Ag–H; (2) dehydrative cross-aldol reaction giving α,β -unsaturated ketone; (3) reduction of the C=C bond to give **3**.