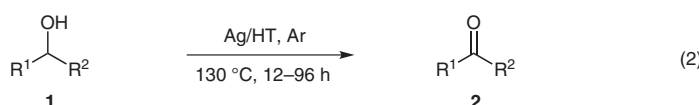
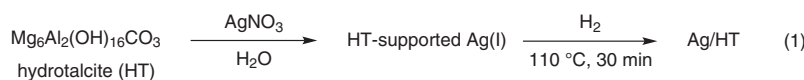
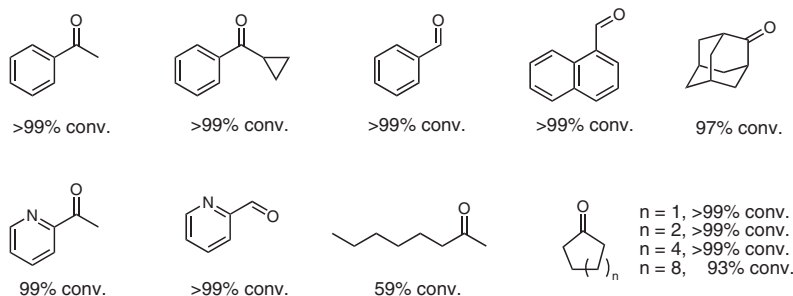


# Oxidation of Alcohols Using Hydrotalcite-Supported Silver Nanoparticles



Typical results



**Significance:** Hydrotalcite (HT) reacted with 5.0 mM aqueous solution of  $\text{AgNO}_3$  at 3 °C for 1 h to afford HT-supported Ag(I). The Ag(I) ions were reduced with hydrogen to give the Ag/HT catalyst (eq. 1). The oxidation (dehydrogenation) of various alcohols **1** without oxidant took place under Ar atmosphere in the presence of the Ag/HT catalyst to give the corresponding carbonyl compounds **2** with up to 99% conversion and chemoselectivity (eq. 2). This catalyst was reused four times in the oxidation of 1-phenylethanol with no significant loss of activity and chemoselectivity.

**Comment:** In this paper, the HT-supported Ag nanoparticle was used as a highly selective catalyst for oxidation of various alcohols. The Ag/HT catalyst is superior to various hetero- or homogeneous catalysts, for example Ag/SiO<sub>2</sub>, Ag/TiO<sub>2</sub>, Pd/HT, Ru/HT, CP\*Ir(PyOH). Generation of an equimolar amount of molecular H<sub>2</sub> was observed as the alcohol oxidation proceeded.