# Surface Acidity of the Supported Molybdenum oxide Catalysts Probed by Potentiometric Titration of n-butylamine

Abstract

A series of alumina and silica supported molybdenum oxide catalysts were prepared using ammonium heptamolybdate at different loading levels (5–20 wt% of molybdenum oxide) by the impregnating method. The total acidity of the solid catalysts was measured by means of potentiometric titration. The supported catalysts possess very strong acid sites (may be contain both Brønsted and Lewis acid sites). The total surface acidity was observed to increase dramatically with increasing of loading levels. However the surface acidity of alumina supported molybdena catalysts are found to be higher than surface acidity of silica supported molybdena catalysts. Sulfation modification remarkably enhances the surface acidity and increases the strength of acidity due to the inductive effect of S= O.