

## عنوان مقاله:

Nanosized Vanadium Oxide (V<sub>2</sub>O<sub>5</sub>/NPs): A Hetrogenous Catalyst for Direct Epoxidation of Some Alkenes Compounds

## محل انتشار:

بیست و ششمین سمینار شیمی آلی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 1

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## خلاصه مقاله:

In recent year, the catalytic epoxidation of alkenes are a very important area in chemistry and chemical engineering. The simplest epoxide, is ethylene epoxides, is produced by vapor-phase oxidation of ethylene with air or oxygen over a silver catalyst, promoted by alkali metals and supported on a non-porous form of  $\gamma$ -alumina. This process was introduced by Union Carbide in 1937 and by Shell in 1958 to replace the practice of ethylene oxide production via the chlorohydrin process. However, this silver catalyzed process can only be applied to olefins which do not process C-H allylic bonds, such as ethylene, 1,3-butadiene and styrene. For all the other olefins, such as propane, low yields of the desired product are obtained, due to the competing oxidation of allylic C-H bonds, which leads to numerous by-products [1,2]. In this study V<sub>2</sub>O<sub>5</sub>/NPs were prepared by a green sol-gel method according to our past project [2] and tertbutylhydroperoxide (TBHP) (1 mmol) was added to a solution of different alkenes (0.5 mmol) and V<sub>2</sub>O<sub>5</sub> /NPs (0.005 mmol) in MeOH (7 ml). The mixture was stirred at 85 °C under air condition. The reaction progress was monitored using gas chromatography and the yield of products was determined by GC analysis. Assignments of products were made by comparison with starting materials or were identified by their IR, <sup>1</sup>H NMR and GC-Mass spectral data. Influence of the solvent, temperature, catalyst concentration and influence of different TBHP were studied by monitoring their reaction by GC-Mass technique see Figure 1. In general the high efficiency and selectivity obtained by using this catalyst.

## کلمات کلیدی:

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