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Outline

The catalytic activity of titanosilicate zeolite has been affected by many factors, especially zeolite structure and distribution of active sites, *i.e.*, tetrahedrally coordinated framework Ti atoms, in zeolite framework. Firstly, Ti distribution in zeolite framework was estimated by selective alkene epoxidations of 1-hexene (1-HX) and 2-metyl-2-pentene (2-MP). It was found that the difference in the catalytic activities between 1-HX and 2-MP gave us the information on the distribution of framework Ti atoms. In Ti-MWW zeolite, the Ti distribution and catalytic performance were dependent on the preparation method. Besides, novel CON-type titanosilicate zeolite, Ti-CON, was firstly synthesized by post-synthesis method. Thus prepared Ti-CON was found to be a nice catalyst for alkene epoxidations compared to conventional titanosilicate zeolites including TS-1, Ti-MWW and Ti-Beta.