

Supporting Information

In order to exploration the oxidation of alkene when H-TiNTs were used as the catalyst. 1-octylene was added into methanol with a mass fraction of 20 wt%. Evaluation of oxidative performance of the H-TiNTs was conducted in a 100-mL three-neck flask equipped with magnetic stirrer and condenser. In the reaction, 0.1 g H-TiNTs, 15 mL solution described above, and 2.2 mL H_2O_2 were added to the reactor and stirred for 60 min at 313 K. After that, the products of reaction were analyzed by a GC-HP6890 (Agilent Technologies, Santa Clara, CA). And the results are shown in Figure S1.

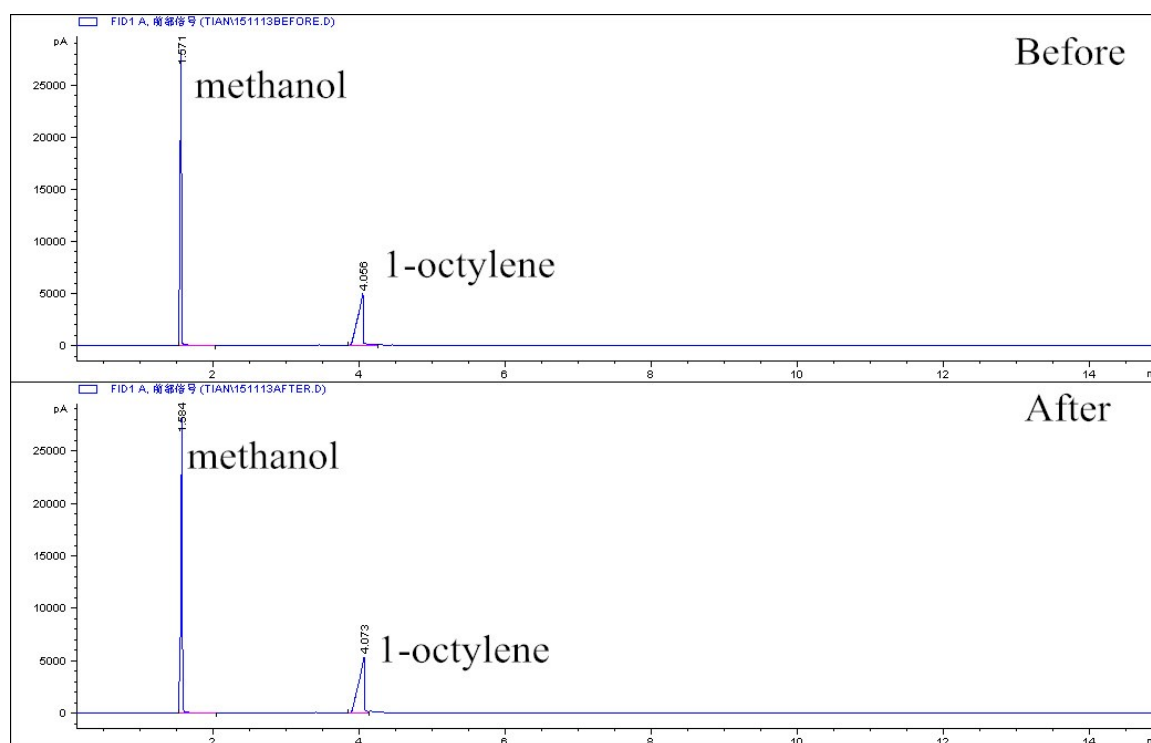


Figure S1 The results of the oxidation of alkene. Reaction conditions: m (Catalyst) = 0.1g, T = 313K, V(H_2O_2) = 2.2 mL, t = 60min

It is clear that no oxidation products were detected after oxidation reaction. One can draw the conclusion that there were no alkenes or even a trace amount of alkenes involved in the oxidation reaction when H-TiNTs were used as the catalyst.