

A non-sodium synthesis of highly ordered V-MCM-41 and its catalytic application in isomerization

Li, Lusi

2009

Li, L. (2009, March). A non-sodium synthesis of highly ordered V-MCM-41 and its catalytic application in isomerization. Presented at Discover URECA @ NTU poster exhibition and competition, Nanyang Technological University, Singapore.

<https://hdl.handle.net/10356/107531>

© 2009 The Author(s).

Downloaded on 20 Mar 2024 17:20:51 SGT

A non-sodium synthesis of highly ordered V-MCM-41 and its catalytic application in isomerization

Objective

To synthesize highly ordered V-MCM-41 using direct hydrothermal approach and investigate its catalytic application in alkene isomerization.

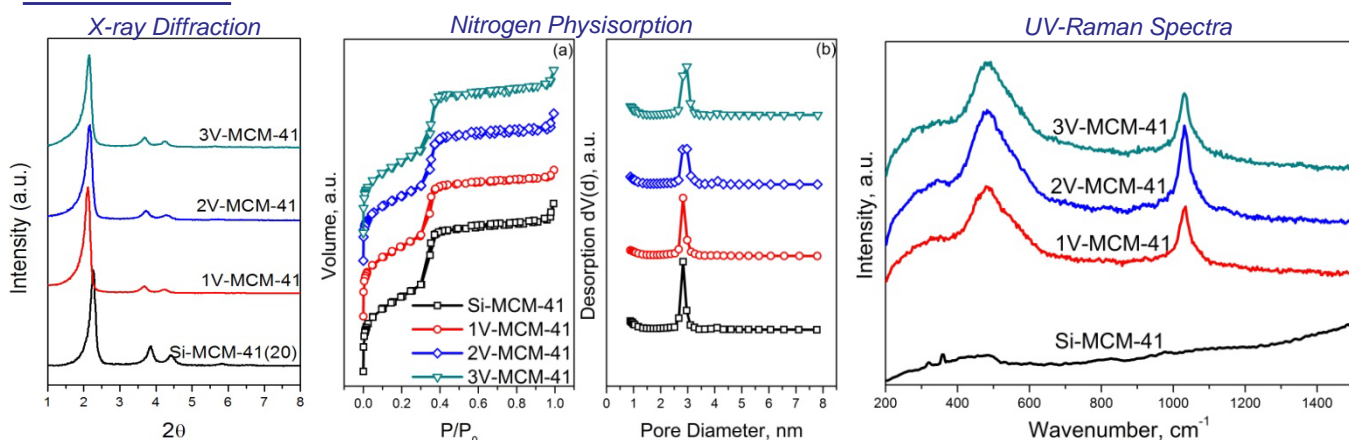
V-MCM-41

MCM-41 is one of the most popular mesoporous molecular sieves. The incorporation of vanadium manipulates the acidity on the MCM-41 pore wall surface to some extent.

Synthesis



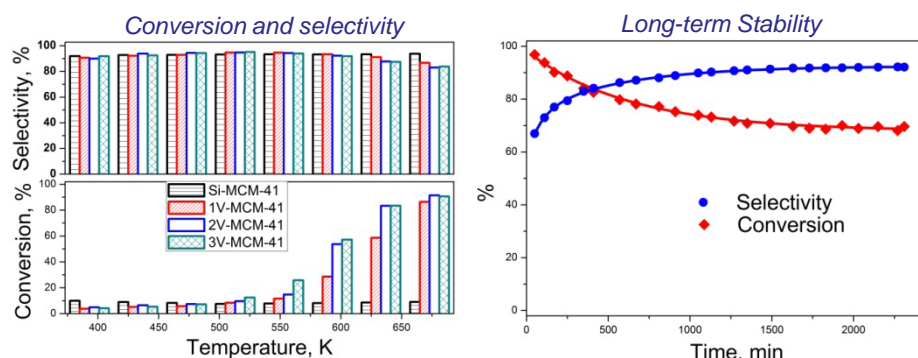
Characterization



Heptene Isomerization

The experiments study the heptene Isomerization under hydrogen flow over V-MCM-41 mesoporous molecular sieves.

The long-term stability of 2V-MCM-41 catalyst was test under 593K for 40 hours.



Conclusion

A series of highly ordered V-MCM-41 samples were successfully synthesized.

The heptene isomerization result shows that V-MCM-41 catalysts presented high conversion and isomer selectivity.