

Accepted Manuscript

Title: Poisoning of Ru/C by homogeneous Brønsted acids in hydrodeoxygenation of 2,5-dimethylfuran via catalytic transfer hydrogenation

Authors: Matthew J. Gilkey, Dionisios G. Vlachos, Bingjun Xu



PII: S0926-860X(17)30258-2
DOI: <http://dx.doi.org/doi:10.1016/j.apcata.2017.06.010>
Reference: APCATA 16271

To appear in: *Applied Catalysis A: General*

Received date: 2-12-2016
Revised date: 22-4-2017
Accepted date: 3-6-2017

Please cite this article as: Matthew J.Gilkey, Dionisios G.Vlachos, Bingjun Xu, Poisoning of Ru/C by homogeneous Brønsted acids in hydrodeoxygenation of 2,5-dimethylfuran via catalytic transfer hydrogenation, Applied Catalysis A, General <http://dx.doi.org/10.1016/j.apcata.2017.06.010>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Poisoning of Ru/C by Homogeneous Brønsted Acids in Hydrodeoxygenation of 2,5-Dimethylfuran via Catalytic Transfer Hydrogenation

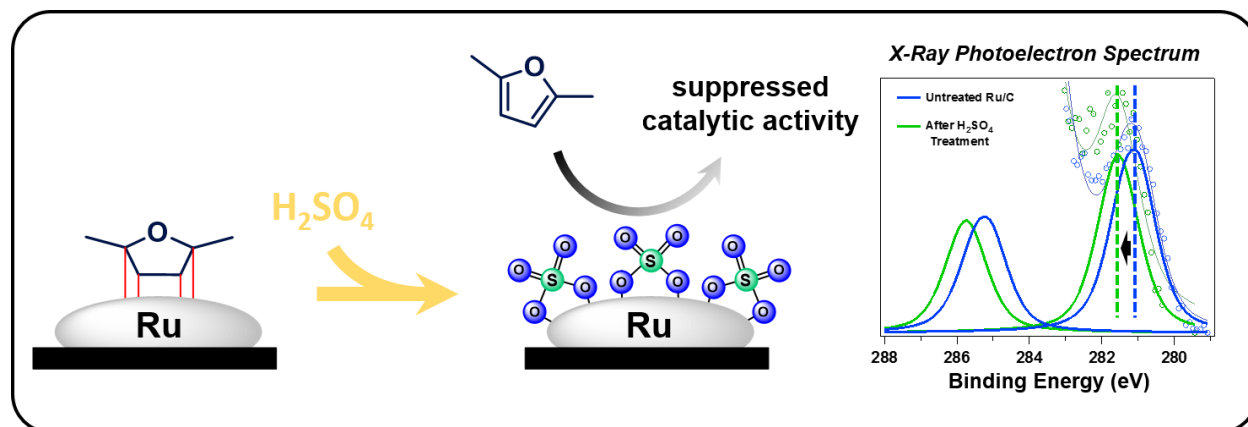
Matthew J. Gilkey, Dionisios G. Vlachos*, Bingjun Xu*

Department of Chemical and Biomolecular Engineering, Catalysis Center for Energy Innovation

University of Delaware, Newark, DE 19711

*Emails: vlachos@udel.edu, bxu@udel.edu

Graphical abstract



Highlights

- Homogeneous Brønsted acids are found to severely poison Ru/C mediated hydrodeoxygenation and ring opening of 2,5-dimethylfuran.
- Strong adsorption of sulfates on Ru is confirmed by CO chemisorption, ICP-MS and XPS, and is identified as the main cause for catalyst deactivation.
- Atomically mixed acid and metal sites are likely necessary for synergistic acid/metal bifunctional catalysis in ring opening chemistry.

Download English Version:

<https://daneshyari.com/en/article/4755673>

Download Persian Version:

<https://daneshyari.com/article/4755673>

[Daneshyari.com](https://daneshyari.com)