

# 59th GREEN Open Seminar

2017/ 8/7(Mon) 10:00~11:00

Venue : 4F conf. room 401, WPI-MANA Bldg., Namiki Site

## Surface Science Studies of Nanoporous Materials: Zeolite Model Systems and Zeolite Nanosheets

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### Abstract

Although Surface Science has provided useful insights into a variety of materials of interest for catalysis, its contribution to the understanding of zeolites has been limited. This was mainly due to the lack of suitable well-defined surfaces that successfully mimic the properties of these nano-porous materials while allowing its analysis using surface science tools. Two approaches to overcome this limitation will be described during this talk. One of them is through the use of two-dimensional aluminosilicates (the zeolite model) showing the same chemical behavior as zeolites. The second one consists zeolite nanosheets deposited onto a conductive support, so that surface science methods can be used for their study. Both of these approaches are being carried out at conditions ranging from ultra-high vacuum to elevated pressures.

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- [2] J.A. Boscoboinik, X. Yu, B. Yang, F.D. Fischer, R. Włodarczyk, M. Sierka, S. Shaikhutdinov, J. Sauer, H.-J. Freund, *Angew. Chem. Int. Ed.* 51 (2012) 24, 6005-6008.
- [3] J.A. Boscoboinik, S.K. Shaikhutdinov. *Catal. Lett.* (2014), 144, 1987-1995.
- [4] J.-Q. Zhong, J. Kestell, I. Waluyo, S.B. Wilkins, C. Mazzoli, A. Barbour, K. Kaznatcheev, M. Shete, M. Tsapatsis, J.A. Boscoboinik. *J. Phys. Chem. C* (2016), DOI: 10.1021/acs.jpcc.6b02851
- [5] J.D. Kestell, J.-Q. Zhong, M. Shete, I. Waluyo, J.T. Sadowski, D. J. Stacchiola, M. Tsapatsis, J.A. Boscoboinik. *Catal. Today* (2017), DOI: 10.1016/j.cattod.2016.07.015

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