

Kiyotaka NAKAJIMA (Ph.D.)

Associate Professor

Catalysis Research Center, Hokkaido University

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Education

2000 School of science and technology, Meiji University
BS (Supervisor; Prof. Eiji FURUYA)

2002 Chemical Resources Laboratory, Tokyo Institute of Technology,
MS (Supervisor; Prof. Kazunari DOMEN)

2005 Chemical Resources Laboratory, Tokyo Institute of Technology
Ph.D. (Supervisors: prof. Kazunari DOMEN, prof. Takashi TATSUMI)

Title of Ph.D. thesis: Studies on the syntheses, structural characteristics, and applications of organic-inorganic hybrid mesoporous materials

Professional Carrier

2006-2007 Postdoctoral Fellow, Toyota R&D labs. Inc.,

2007-2015 Assistant professor, Materials and Structures Laboratory, Tokyo Institute of Technology

2015-present Associate Professor, Catalysis Research Center, Hokkaido University

2007-2012 Visiting Researcher, Kanagawa Academy of Science and Technology

2012-present PRESTO Researcher,

Awards and Honors

2012 Young Scientist Award, The Japan Petroleum Institute

2014 Challenging Research Award, Tokyo Institute of Technology

2015 Young Scientist Award, Catalysis Society of Japan

2015 Young Scholar Lecture Award, The Chemical Society of Japan

Representative publication

1. Hiroshi Shintaku, **Kiyotaka Nakajima**, Masaaki Kitano, Michikazu Hara, "Efficient Mukaiyama aldol reaction in water with TiO₄ tetrahedra on a hydrophobic mesoporous silica surface", *Chemical Communications*, **2014**, 50, 13473-13476.
First published online: 2014/07/12, DOI: 10.1039/C4CC05711B
2. Hiroshi Shintaku, **Kiyotaka Nakajima**, Masaaki Kitano, Nobuyuki Ichikuni, Michikazu Hara, "Lewis Acid Catalysis of TiO₄ Tetrahedra on Mesoporous Silica in Water", *ACS Catalysis*, **2014**, 4, 1198-1204.
First published online: 2014/03/11, DOI: 10.1021/cs401149n
3. **Kiyotaka Nakajima**, Ryouhei Noma, Masaaki Kitano, Michikazu Hara, "Selective glucose transformation by titania as a heterogeneous Lewis acid catalyst", *Journal of Molecular Catalysis A: General*, **2014**, 338-339, 100-105.

First published online: 2013/10/12, DOI:10.1016/j.molcata.2013.09.012

4. **Kiyotaka Nakajima**, Ryouhei Noma, Masaaki Kitano, Michikazu Hara, "Titania as an Early Transition Metal Oxide with a High Density of Lewis Acid Sites workable in Water", *Journal of Physical Chemistry C*, **2013**, 117, 16028-16033.

First published online: 2013/07/17, DOI: 10.1021/jp404523r

5. **Kiyotaka Nakajima**, Michikazu Hara, "Amorphous Carbon with SO₃H Groups as a Strong Brønsted Acid Catalyst", *ACS Catalysis*, **2012**, 2, 1296-1304.

First published online: 2012/04/18, DOI: 10.1021/cs300103k

6. **Kiyotaka Nakajima**, Yusuke Baba, Ryouhei Noma, Masaaki Kitano, Junko N. Kondo, Shigenobu Hayashi, Michikazu Hara, "Nb₂O₅·nH₂O as a Heterogeneous Catalyst with Water-Tolerant Lewis Acid Sites", *Journal of the American Chemical Society*, **2011**, 133, 4224-4227.

First published online: 2011/03/03, DOI: 10.1021/ja110482r.

7. **Kiyotaka Nakajima**, Tsuyoshi Fukui, Masaaki Kitano, Hideki Kato, Junko N. Kondo, Shigenobu Hayashi, Michikazu Hara, "Structure and Acid Catalysis of mesoporous Nb₂O₅·nH₂O", *Chemistry of Materials*, **2010**, 22, 3332-3339.

First published online: 2010/05/07, DOI: 10.1021/cm100391q

8. **Kiyotaka Nakajima**, Mai Okamura, Junko N. Kondo, Kazunari Domen, Takashi Tatsumi, Shigenobu Hayashi, Michikazu Hara, "Amorphous Carbon Bearing Sulfonic Acid Groups in Mesoporous Silicas as a Selective Catalyst", *Chemistry of Materials*, **2009**, 21, 186-193.

First published online: 2008/12/11, DOI: 10.1021/cm801441c

9. Satoshi Suganuma, **Kiyotaka Nakajima**, Masaaki Kitano, Daizo Yamaguchi, Hideki Kato, Shigenobu Hayashi, Michikazu Hara, "Hydrolysis of Cellulose by Amorphous Carbon Bearing SO₃H, COOH, and OH groups", *Journal of the American Chemical Society*, **2008**, 130, 12787-12793.

First published online: 2010/08/29, DOI: 10.1021/ja803983h

10. **Kiyotaka Nakajima**, Ikuyoshi Tomita, Michikazu Hara, Shigenobu Hayashi, Kazunari Domen and Junko N. Kondo, "A Stable and Highly Active Hybrid Mesoporous Solid Acid Catalyst", *Advanced Materials*, **2005**, 17, 1839-1842.

First published online: 2005/07/21, DOI: 10.1002/adma.200500426