Curriculum Vitae

Mizuho Yabushita

Personal Information

Nationality:	Japanese
Gender:	Male
Office Address:	Institute for Catalysis, Hokkaido University
	Kita 21 Nishi 10, Kita-ku, Sapporo, Hokkaido 001-0021, Japan
Phone (Office):	+81-11-706-9136
Phone (Mobile):	+81-90-9753-7190
E-mail:	m.yabushita@cat.hokudai.ac.jp

Education

Mar. 2015	Doctor of Philosophy in Science
	Graduate School of Chemical Sciences and Engineering,
	Hokkaido University, Sapporo, Japan
Sep. 2012	Master of Chemical Sciences and Engineering
	Graduate School of Chemical Sciences and Engineering,
	Hokkaido University, Sapporo, Japan
Mar. 2011	Bachelor of Science
	Faculty of Science, Hokkaido University, Sapporo, Japan

Professional Carrier

Apr. 2016–	Postdoctoral Fellow, Institute for Catalysis, Hokkaido University
May 2015–Mar. 2017	Visiting Scholar, Department of Chemical and Biomolecular Engineering, University of California, Berkeley
Apr. 2015–Mar. 2016	Research Fellow PD, Japan Society for the Promotion of Science
Apr. 2014–Mar. 2015	Research Fellow DC2, Japan Society for the Promotion of Science
Oct. 2012–Mar. 2014	Research Assistant, Hokkaido University
Apr. 2011–Sep. 2011	Teaching Assistant, Hokkaido University

Publications: Original Papers

1. M. Yabushita,* P. Li, T. Islamoglu, H. Kobayashi, A. Fukuoka,* O. K. Farha,* A. Katz*
   "Selective Metal–Organic Framework Catalysis of Glucose to 5-Hydroxymethylfurfural Using Phosphate-Modified NU-1000"
   Ind. Eng. Chem. Res. **2017**, *56*, 7141–7148
2. M. Yabushita, P. Li, K. A. Durkin, H. Kobayashi, A. Fukuoka,* O. K. Farha,* A. Fukuoka,* A. Katz*
   "Insights into Supramolecular Sites Responsible for Complete Separation of Biomass-Derived Phenolics and Glucose in Metal–Organic Framework NU-1000"
   Langmuir **2017**, *33*, 4129–4137
3. M. Yabushita, K. Techikawara, H. Kobayashi,* A. Fukuoka,* A. Katz*
   "Zeolite-Templated Carbon Catalysts for Adsorption and Hydrolysis of Cellulose-Derived Long-Chain Glucans: Effect of Post-Synthetic Surface Functionalization"
   ACS Sustainable Chem. Eng. **2016**, *4*, 6844–6851
4. M. Yabushita, P. Li, H. Kobayashi, A. Fukuoka,* O. K. Farha,* A. Katz*
   "Complete furanics-sugar separations with metal-organic framework NU-1000"
   Chem. Commun. **2016**, *52*, 11791–11794
5. M. Yabushita, P. Li, V. Bernales, H. Kobayashi, A. Fukuoka,* L. Gagliardi,* O. K. Farha,* A. Katz*
   "Unprecedented selectivity in molecular recognition of carbohydrates by a metal-organic framework"
   Chem. Commun. **2016**, *52*, 7094–7097

6. M. Yabushita, H. Kobayashi,* K. Kuroki, S. Ito, A. Fukuoka*
   "Catalytic Depolymerization of Chitin with Retention of *N*-Acetyl Group"
   ChemSusChem **2015**, *8*, 3760–3763
   Inside Cover (DOI: 10.1002/cssc.201501457)
7. P.-W. Chung, M. Yabushita, A. T. To, Y. Bae, J. Jankolovitz, H. Kobayashi,* A. Fukuoka,* A. Katz*
   "Long-Chain Glucan Adsorption and Depolymerization in Zeolite-Templated Carbon Catalysts"
   ACS Catal. **2015**, *5*, 6422–6425
8. H. Kobayashi, M. Yabushita, J. Hasegawa,* A. Fukuoka*
   "Synergy of Vicinal Oxygenated Groups of Catalysts for Hydrolysis of Cellulosic Molecules"
   J. Phys. Chem. C **2015**, *119*, 20993–20999
9. M. Yabushita, H. Kobayashi, A. Shrotri, K. Hara, S. Ito, A. Fukuoka*
   "Sulfuric Acid-Catalyzed Dehydration of Sorbitol: Mechanistic Study on Preferential Formation of 1,4-Sorbitan"
   Bull. Chem. Soc. Jpn. **2015**, *88*, 996–1002
10. Y. Shi, Y. Nabae, T. Hayakawa, H. Kobayashi, M. Yabushita, A. Fukuoka, M. Kakimoto*
    "Synthesis and characterization of hyperbranched aromatic poly(etherketone)s functionalized with carboxylic acid terminal groups"
    Polym. J., **2014**, *46*, 722–727
11. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka*
    "Quantitative evaluation of ball-milling effect on hydrolysis of cellulose catalysed by activated carbons"
    Catal. Sci. Technol. **2014**, *4*, 4–8
12. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka*
    "Entropically Favored Adsorption of Cellulosic Molecules onto Carbon Materials through Hydrophobic Functionalities"
    ChemSusChem **2014**, *7*, 1443–1450
13. H. Kobayashi, Y. Yamakoshi, Y. Hosaka, M. Yabushita, A. Fukuoka*
    "Production of sugar alcohols from real biomass by supported platinum catalyst"
    Catal. Today **2014**, *226*, 204–209

14. H. Kobayashi, M. Yabushita, T. Komanoya, K. Hara, I. Fujita, A. Fukuoka*
"High-Yielding One-Pot Synthesis of Glucose from Cellulose Using Simple Activated Carbons and Trace Hydrochloric Acid"
ACS Catal. **2013**, *3*, 581–587

Publications: Reviews

1. M. Yabushita, H. Kobayashi, A. Fukuoka*
"Catalytic transformation of cellulose into platform chemicals"
Appl. Catal. B: Environ. **2014**, *145*, 1–9
2. A. Fukuoka, H. Kobayashi, M. Yabushita
"High-efficient saccharification of non-food biomass by activated carbons (Japanese title: 活性炭を用いた非可食バイオマスの高効率糖化)"
Clean Energy **2013**, *22*, 45–48

Publications: Books

1. M. Yabushita
A Study on Catalytic Conversion of Non-Food Biomass into Chemicals: Fusion of Chemical Sciences and Engineering
2016, Springer-Verlag Singapore
2. H. Kobayashi, M. Yabushita, A. Fukuoka
"Depolymerization of Cellulosic Biomass Catalyzed by Activated Carbons"
in *Reaction Pathways and Mechanisms in Thermocatalytic Biomass Conversion I: Cellulose Structure, Depolymerization and Conversion by Heterogeneous Catalysts*, Eds. M. Schlaf, Z. C. Zhang, **2016**, Springer-Verlag Singapore, pp. 15–26.

Oral Presentations

1. M. Yabushita, K. Techikawara, H. Kobayashi, A. Fukuoka, A. Katz
"Unique Microporous Catalysts for Upstream Biorefinery Processes: Metal-Organic Framework (MOF) and Zeolite-Templated Carbon (ZTC)"
252nd ACS National Meeting & Exposition, Philadelphia, USA, Aug. 22, 2016.
Keynote lecture, Best Presentation (CATL session)

2. M. Yabushita, H. Kobayashi, J. Hasegawa, A. Fukuoka
   "Adsorption and hydrolysis of cellulosic molecules on activated carbon catalysts"
   The International Chemical Congress of Pacific Basin Societies 2015, Honolulu, USA, Dec. 19, 2015.
3. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka
   "Adsorption of β-glucans onto carbon materials driven by hydrophobic functionalities"
   France-Japan IAL International Workshop CAT&P4Bio, Kyoto, Japan, Jun. 7, 2014.
4. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka
   "Hydrolysis of Cellulose Catalyzed by Alkali-Activated Carbons"
   XIth European Congress on Catalysis, Lyon, France, Sep. 4, 2013.

Poster Presentations

1. M. Yabushita, A. Katz
   "Adsorption and Catalytic Depolymerization of Cellulose-Derived Polysaccharides over Microporous Materials"
   2016 Gordon Research Conference in Catalysis – From Theory to Commercialization, New London, USA, Jun. 15, 2016.
2. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka
   "Adsorption and hydrolysis of cellulosic molecules on activated carbon catalysts"
   The International Chemical Congress of Pacific Basin Societies 2015, Honolulu, USA, Dec. 19, 2015.
3. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka
   "Adsorption of cellulosic molecules on carbon materials driven by their hydrophobicity"
   248th ACS National Meeting & Exposition, San Francisco, USA, Aug. 12, 2014.
4. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka
   "Adsorption mechanism of cellulosic molecules on carbons"
   The 3rd Frontier Chemistry Center International Symposium "Challenges at the Frontier of Chemistry Sciences", Sapporo, Japan, Jun. 13, 2014.
5. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka
   "Entropically-Favored Adsorption of Cellulosic Molecules onto Carbon Materials by Hydrophobic Functionalities"
   The Seventh Tokyo Conference on Advanced Catalytic Science and Technology, Kyoto, Japan, Jun. 3, 2014.

6. M. Yabushita, H. Kobayashi, J. Hasegawa, K. Hara, A. Fukuoka
   "Adsorption of cellulosic molecules onto carbons with positive entropy change"
   TOCAT7 Pre-symposium "International Symposium on Catalysis for Renewable Chemicals", Shari, Japan, May 30, 2014.
7. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka
   "Catalysis of Oxygenated Functional Groups on Carbons for Cellulose Hydrolysis"
   Frontier Chemistry Center International Symposium 2013 "Advanced Materials Science", Sapporo, Japan, Dec. 9, 2013.
8. M. Yabushita, H. Kobayashi, A. Fukuoka
   "Selective Production of Oligosaccharides and Glucose from Cellulose by Carbon-Based Catalysts"
   2nd International Congress on Catalysis for Biorefineries, Dalian, China, Sep. 24, 2013.
   Chinese Journal of Catalysis Best Poster Award
9. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka
   "Catalysis of Alkali-Activated Carbons in Hydrolysis of Cellulose"
   The Sixteenth International Symposium on Relations between Homogeneous and Heterogeneous Catalysis, Sapporo, Japan, Aug. 5, 2013.
10. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka
    "Highly-Effective Hydrolysis of Cellulose by Carbon-Based Catalysis"
    The 2nd International Conference on MEXT Project of Integrated Research on Chemical Synthesis "Molecular Functions in Complex Systems", Nagoya, Japan, Dec. 10, 2012.
11. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka
    "Catalytic Conversion of Cellulose into Glucose by Carbon"
    15th International Congress on Catalysis 2012, Munich, Germany, Jul. 3, 2012.
12. M. Yabushita, H. Kobayashi, K. Hara, A. Fukuoka
    "Catalytic Conversion of Cellulose into Renewable Chemicals"
    The 3rd Hokkaido University Sustainability Weeks Research Poster Contest, Sapporo, Japan, Oct. 26, 2011

Honors and Awards

1. Best Presentation (CATL session) at 252nd ACS National Meeting & Exposition
   American Chemical Society, Sep. 2016
2. Springer Theses Prize
   Springer Science+Business Media, Aug. 2015
3. Chinese Journal of Catalysis Best Poster Award at 2nd International Congress on Catalysis for Biorefineries
   Chinese Journal of Catalysis, Sep. 2013
4. Best Poster Award at 111th Catalysis Society of Japan Meeting
   Catalysis Society of Japan, Mar. 2013
5. Best Poster Award at 52th Aurora Seminar
   Hokkaido Branch of Catalysis Society of Japan, Jul. 2011
6. Clark Award
   Hokkaido University, Mar. 2011
7. Best Presentation Award at Winter Meeting of Hokkaido Branches of Chemical Societies in 2011
   Hokkaido Branch of Catalysis Society of Japan, Mar. 2011
8. Nitobe Prize
   Hokkaido University, Jun. 2008