

George Willis Huber

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Professor of Chemical and Biological Engineering
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Education

University of Wisconsin-Madison, Madison, Wisconsin, 2000 – 2005
Ph.D. in Chemical Engineering

Brigham Young University, Provo, Utah, 1992-1993, 1996-2000
M.S. in Chemical Engineering, 2000
B.S. in Chemical Engineering, 1999

Research Interests

- Biofuels
- Biochemicals
- Electrofuels
- Heterogeneous Catalysis
- Renewable Energy

Academic Positions

Professor, University of Wisconsin-Madison, 2012- present
Professor, University of Massachusetts-Amherst, 2012
Associate Professor, University of Massachusetts-Amherst, 2010-2012
Assistant Professor, University of Massachusetts-Amherst, 2006-2010

Research Experience

Post-Doctoral Research: Instituto de Tecnología Química, Universidad Politécnica de Valencia, 2005-2006 (research advisor: Avelino Corma)

- Developed processes for biofuels production using petrochemical refining technology

Doctoral Research: Department of Chemical Engineering, University of Wisconsin-Madison, 2000-2005 (research advisor: James A. Dumesic)

- Developed new catalytic processes for biofuel production (H₂ and liquid fuels).
- Discovered a non-precious metal catalyst (Raney NiSn) to convert carbohydrates into H₂
- Designed and built a high-throughput reactor

Masters Research: Department of Chemical Engineering, Brigham Young University, 1998-2000 (research advisor: Calvin H. Bartholomew)

- Discovered a new deactivation mechanism for Fischer-Tropsch Synthesis (FTS) catalysts
- Kinetic Study of bimetallic Pt-Co FTS catalyst

Industrial Experience

- Co-founder of a start-up company (Anellotech) that is commercializing technology developed in the Huber research group.
- Currently a consultant on biofuels for start ups, chemical companies and oil companies
- Worked on Research projects funded by: Conoco-Phillips, Cargill, and Exxon-Mobil.
- Ph.D. research is currently being commercialized by Virent Energy Systems

Awards and Honors

- Visiting Professorship from Chinese Academy of Sciences 2015
- Fellow of the Royal Society of Chemistry, 2013-present
- Vilas Associate, University of Wisconsin-Madison, 2013-2015
- Top 100 People in Bioenergy 2012 by Biofuels Digest (Number 66 and 7th professor)
- Camille Dreyfus Teacher-Scholar Award 2011
- Outstanding Young Faculty Award College of Engineering University of Massachusetts-Amherst 2010

- Armstrong professional development professor 2007-2010
- NSF CAREER Award
- Discovery of Raney-NiSn catalyst named one of top 50 technology breakthroughs of 2003 by Scientific American

Professional Service

- Have spoken about the central role of catalysis and Chemical Engineering at two different congressional briefings.
- Editorial Board for ChemCatChem (2010 Impact Factor 3.3), Energy and Environmental Sciences (2012 Impact Factor 9.4), and The Catalyst Review.
- Scientific Advisory Board member for CatchBIO (<http://www.catchbio.com/>)
- Scientific Advisory Board member for National Advanced Biofuels Consortium
- Co-editing a special issue on The Role of Biomass in America's Energy Future for Biofuels, Bioproducts & Biorefining
- Chair of NSF and DOE workshop on Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels (www.ecs.umass.edu/biofuels/), 2007
- International Assessment Committee Member for Panel on Nanostructured Catalysis, (<http://www.wtec.org/catalysis/>) 2007
- Co-chair for panel on catalysis for biofuels at DOE Office of Basic Science Workshop on Catalysis for Energy Applications, 2007
- Proposal Reviewer for NSF and DOE
- Reviewer for several journals including: Journal of Catalysis, Science, Angewandte Chemie, Chemical Reviews, Energy and Fuels, Applied Catalysis A, Applied Catalysis B, Nature Chemistry, Nature, Catalysis Letters, ChemSusChem, ChemCatChem, Green Chemistry, Science, Nature, and Industrial Engineering and Chemistry.

University Service

- Undergraduate Program Director 2010-2012
- AIChE Student Chapter Faculty Advisor 2007-2010
- Graduate Program Committee Member for Chemical Engineering Department 2006-2009
- Unit Operation Lab ABET Committee member 2007-2009

Citation Analysis from January 8, 2015 from Google Scholar (h index = 42 ; Total number of citations = 13,162, Citations in 2014 = 3,116)

Journal Publications

1. B O'Neil, DHK Jackson, J Lee, C. Canlas, PC Stair, CL Marshall, JW Elam, TF Kuech, JA Dumesic, GW Huber, Catalyst Design with Atomic Layer Deposition, ACS Catalysis, (2015), 5, 1804-1825.
2. YT Kim, JP Chada, Z Xu, YJ Pagan-Torres, DC Rosenfeld, WL Winniford, E Schmidt, GW Huber, Low-temperature oligomerization of 1-butene with H-ferrierite, Journal of Catalysis; (2015), 353 33-44.
3. A Sanna, TP Vispute, and GW Huber, Hydrodeoxygenation of the Aqueous Fraction of Bio-oil with Ru/C and Pt/C catalysts, Applied Catalysis B: Environmental; (2015), 165 446-456.
4. L Xu, Y Jiang, Q Yao, Z Han Y Zhang, Y Fu, Q Guo, and GW Huber, Direct production of indoles via thermo-catalytic conversion of bio-derived furans with ammonia over zeolites, Green Chemistry, in press.
5. AA Upadhye, I Ro, X Zeng, H Ju Kim, I Tejedor, MA Anderson, JA Dumesic, and GW Huber; Plasmon-enhanced reverse water gas shift reaction over oxide supported Au catalysts, Catalysis Science and Technology; (2015),
6. JA Herron, J Kim, A Upadhye, GW Huber, CT Maravelias, A generalized framework for the assessment of solar fuels technologies, Energy and Environmental Science (2015), 8 126-157.
7. AA Dabbawala, DK Mishra, GW Huber, JS Hwang, Role of acid sites and selectivity correlation in solvent free liquid phase dehydration of sorbitol to isosorbide, Applied Catalysis A: General; (2015) 492, 252-261.

8. HJ Kim, SH Lee, AA Upadhye, I Ro, M I Tejedor-Tejedor, MA Anderson, WB Kim, GW Huber; Plasmon-Enhanced Photoelectrochemical Water Splitting with Size Controllable Au Nanodot Arrays, *ACS Nano*, (2014) 8 10756-10765.
9. CJ Gilbert, JS Espindola, WC Conner Jr., JO Trierweiler, and GW Huber; The Effect of Water on the Conversion of Furan (a model biomass feedstock) over ZSM-5; *ChemCatChem*; (2014)6, 2497-2500.
10. R. Weingarten, A Rodriguez-Beuerman, F Cai, JS Luterbacher, DM Alonso, JA Dumesic, GW Huber, Selective Conversion of Cellulose to Hydroxymethylfurfural in Polar Aprotic Solvents; *ChemCatChem*; (2014) 8 2229-2234.
11. HJ Kim, J Lee, SK Green GW Huber, WB Kim, Selective Glycerol Oxidation by Electrocatalytic Dehydrogenation; *ChemSusChem* (2014) 7 1051-1056.
12. J. Duan, YT Kim, H Lou, GW Huber; Hydrothermally stable regenerable catalytic supports for aqueous-phase conversion of biomass; *Catalysis Today* (2014) 234 66-74.
13. J. Lee, DHK Jackson, T Li, RE Winans, JA Dumesic, TF Kuech, GW Huber; Enhanced stability of cobalt catalysts by atomic layer deposition for aqueous-phase reactions; *Energy and Environmental Science* (2014) 7, 1657-1660.
14. J Jae, R Coolman, TJ Mountziaris, GW Huber; Catalytic fast pyrolysis of lignocellulosic biomass in a process development unit with continual catalyst addition and removal, *Chemical Engineering Science* (2014) 108, 33-46.
15. J Bond, A Upadhye, H Olcay, G Tompsett, J Jae, R Xing, DM Alonso, D Wang, T Zhang, R Kumar, AJ Foster, SM Sen, CT Maravelias, R Malina, S Barrett, R Lobo, C Wyman, JA Dumesic, GW Huber; Production of renewable jet fuel range alkanes and commodity chemicals from integrated catalytic processing of biomass *Energy and Environmental Science* (2014) 7, 1657-1660.
16. PU Karanjkar, RJ Coolman, MT Blatnik, S Almalkie, SM BruynKops, TJ Mountziaris, W C Conner, GW Huber; Production of aromatics by catalytic fast pyrolysis of cellulose in a bubbling fluidized bed reactor; *AIChE Journal*; (2014) 60, 1320-1335.
17. H Olcay, Y Xu, GW Huber; Effects of hydrogen and water on the activity and selectivity of acetic acid hydrogenation on ruthenium; *Green Chemistry*, (2014) 16, 911-924.
18. J Lee, YT Kim, GW Huber, Aqueous phase hydrogenation and hydrodeoxygenation of biomass-derived oxygenates with bimetallic catalysts; *Green Chemistry* (2014) 16(2) 708-718.
19. B. M. Moreno, N. Li, J. Lee, G. W. Huber and M. T. Klein; Modeling aqueous-phase hydrodeoxygenation of sorbitol over Pt/SiO₂-Al₂O₃; *RSC Advances*, (2013) 3, 23769-23784.
20. R. Weingarten, Y. Tae Kim, G. A Tompsett, A. Fernández, K.S. Han, E. W Hagaman, Wm Curt Conner Jr, J. A Dumesic, G. W Huber; Conversion of glucose into levulinic acid with solid metal (IV) phosphate catalysts; *Journal of Catalysis*, (2013) 304, 123-134.
21. YT Kim, JA Dumesic, GW Huber, Aqueous-phase hydrodeoxygenation of sorbitol: A comparative study of Pt/Zr phosphate and PtReO/C, *Journal of Catalysis* (2013) 304, 72-85.
22. SK Green, J Lee, HJ Kim, GA Tompsett, WB Kim, G Huber, The electrocatalytic hydrogenation of furanic compounds in a continuous electrocatalytic membrane reactor, *Green Chemistry* (2013) 15, 1869-1879.
23. J Cai, W Wu, R Liu, GW Huber, A distributed activation energy model for the pyrolysis of lignocellulosic biomass, *Green Chemistry* (2013), 15 (5), 1331-1340.
24. J Lee, Y Xu, GW Huber, High-throughput screening of monometallic catalysts for aqueous-phase hydrogenation of biomass-derived oxygenates, *Applied Catalysis B: Environmental* (2013), 140-141, 98-107.
25. H. Olcay, A. V. Subrahmanyam, R. Xing, J. Lajoie, J. A. Dumesic, G. W. Huber; Production of Renewable Petroleum Refinery Diesel and Jet Fuel Feedstocks from Hemicellulose Sugar Streams; *Energy and Environmental Science*, (2013) 6 (1), 205-216.
26. S. Chu; A. V. Subrahmanyam; and G. W. Huber; The pyrolysis chemistry of a β -O-4 type oligomeric lignin model compound; *Green Chemistry* (2012) DOI: 10.1039/c2gc36332a.
27. A. Jayakumar; A. Javadekar; J. Gissinger; J. M. Vohs; G. W. Huber; and R. J. Gorte; The stability of direct carbon fuel cells with molten Sb and Sb-Bi alloy anodes; *AIChE Journal*, (2012), 1, 1 DOI: 10.1002/aic.13965.

28. Y.T. Cheng; Zhuopeng Wang, Christopher J. Gilbert, Wei Fan, and G.W. Huber; Production of p-Xylene from Biomass by Catalytic Fast Pyrolysis Using ZSM-5 Catalysts with Reduced Pore Openings; *Angew. Chem. Int. Edit.* (2012), 51, 11097-11100, DOI: 10.1002/ange.201205230.
29. V. Agarwal; P. J. Dauenhauer; G. W. Huber; S. M. Auerbach; Ab Initio Dynamics of Cellulose Pyrolysis: Nascent Decomposition Pathways at 327 and 600°C; *Journal of the American Chemical Society*; (2012), 134, 14958-14972, DOI:10.1021/ja305135u.
30. Y.T. Cheng; and G.W. Huber; Production of targeted aromatics by using Diels-Alder classes of reactions with furans and olefins over ZSM-5; *Green Chemistry*; (2012), 14, 3114-3125, DOI: 10.1039/c2gc35767d
31. S. K. Green; G. A. Tompsett; H. Ju Kim; W. B. Kim; and; G. W. Huber; Electrocatalytic Reduction of Acetone in a Proton-Exchange-Membrane Reactor: A Model Reaction for the Electrocatalytic Reduction of Biomass; *ChemSusChem* (2012); 5 (12), 2410-2420, DOI: 10.1002/cssc.201200416.
32. R. Weingarten; W.C. Conner, Jr. and G. W. Huber; Production of levulinic acid from cellulose by hydrothermal decomposition combined with aqueous phase dehydration with a solid acid catalyst; *Energy and Environmental Science* (2012); 5, 7559-7574, DOI: 10.1039/c2ee21593d.
33. A. J. Foster; J. Jae; Y-T. Cheng; G.W. Huber; and R. F. Lobo; Optimizing the aromatic yield and distribution from catalytic fast pyrolysis of biomass over ZSM-5; *Applied Catalysis A: General* (2012), 423-424; 154-161, DOI: 10.1016/j.apcata.2012.02.030.
34. Y. Lin; J. Cho; J.M. Davis; and G.W. Huber; Reaction-transport model for the pyrolysis of shrinking cellulose particles; *Chemical Engineering Science*; (2012), 74, 160-171, DOI: 10.1016/j.ces.2012.02.016.
35. R. Weingarten; J. Cho; R. Xing; W.C. Conner, Jr. and G. W. Huber; Intrinsic Kinetics and Reaction Engineering of Levulinic Acid Production from Aqueous Glucose Solutions; *ChemSusChem*; (2012), 7, 1280-1290.
36. V. Mendu; T. Shearin; J.E. Campbell Jr; J. Stork; J. Jae; M. Crocker; G. W. Huber; S. DeBolt; Global bioenergy potential from high-lignin agricultural residue; *Proceedings of National Academy of Sciences*; (2012), 109, 4014-4019, DOI:10.1073/pnas.1112757109
37. Y. Cheng, J. Jae, J. Shi, W. Fan, and G. W. Huber, Renewable Aromatics Production by Catalytic Fast Pyrolysis of Lignocellulosic Biomass with Bifunctional Ga/ZSM-5 Catalysts, *Angew. Chem. Int. Edit.* (2012), 51, 1387-1390, DOI: 10.1002/anie.201107390.
38. W. Shen; G. A. Tompsett; W. C. Conner; R. Xing and G. W. Huber; Vapor phase butanal self-condensation over unsupported and supported alkaline earth metal oxides, *Journal of Catalysis*, (2012) 286, 248-259, DOI:10.1016/j.jcat.2011.11.009.
39. J. Cho; S. Chu; P. J. Dauenhauer; and G. W. Huber, Kinetics and reaction chemistry for slow pyrolysis of enzymatic hydrolysis lignin and organosolv extracted lignin derived from maplewood, *Green Chemistry* (2012), 14, 428-439; DOI: 10.1039/c1gc16222e.
40. H. Zhang; T.R. Carlson; R. Xiao; and G. W. Huber; Catalytic Fast Pyrolysis of Wood and Alcohol Mixtures in a Fluidized Bed Reactor (Cover Story), *Green Chemistry*, (2012), 14, 98-110, DOI: 10.1039/c1gc15619e.
41. V. Mendu; A. E Harman-Ware; M. Crocker; J. Jae; J. Stork; S. Morton; A. Placido; G. W. Huber; and S. DeBolt; Identification and thermochemical analysis of high-lignin feedstocks for biofuel and biochemical production; *Biotechnology for Biofuels* (2011), 4, 43 , DOI:10.1186/1754-6834-4-43.
42. V. Agarwal; G. W. Huber; W. C. Conner, Jr. and G.W. Huber; Simulating IR Spectra and Hydrogen Bonding in Cellulose I β at Elevated Temperatures, *Journal of Chemical Physics* (2011), 115(1), 188-194, DOI:10.1063/1.3646306.
43. A.A. Upadhye; W. Qi; and G.W. Huber; Conceptual Process Design: A Systematic Method to Evaluate and Develop Renewable Energy Technologies, *AIChE Journal* (2011), (Cover Story) 57(9), 2292-2301, DOI: 10.1002/aic.12733.
44. A. Teela; G. W. Huber; and D. M. Ford; Separation of acetic acid from the aqueous fraction of fast pyrolysis bio-oils using nanofiltration and reverse osmosis membranes , *Journal of Membrane Science* (2011), 378(1-2), 495-502, DOI: 10.1016/j.memsci.2011.05.036.

45. H.J. Kim, S.M. Choi; S. M. Ho; S. Green; G. W. Huber; and W.B. Kim; Efficient electro-oxidation of biomass-derived glycerol over a graphene-supported PtRu electrocatalyst, *Electrochemistry Communications* (2011), 13(8), 890-893, DOI: 10.1016/j.elecom.2011.05.031.
46. Y. Cheng and G.W. Huber, Chemistry of Furan Conversion into Aromatics and Olefins over HZSM-5: A Model Biomass Conversion Reaction; *ACS Catalysis* (2011), 1(6) 611-628, DOI: 10.1021/cs200103j.
47. H. Zhang; Y. Cheng; T. P. Vispute; R. Xiao; and G. W. Huber, Catalytic Conversion of Biomass-derived Feedstocks into Olefins and Aromatics with ZSM-5: The Hydrogen to Carbon Effective Ratio, *Energy and Environmental Science* (2011) ,4(6), 2297-2307, DOI: 10.1039/c1ee01230d.
48. R. Xing; W. Qi; and G.W. Huber; Production of Furfural and Carboxylic Acids from Waste Aqueous Hemicellulose Solutions from the Pulp and Paper and Cellulosic Ethanol Industries; *Energy and Environmental Science* (2011), 4(6), 2193-2205, DOI: 10.1039/c1ee01022k.
49. J. Jae; G.A. Tompsett; A.J. Foster; K.D. Hammond; S. M. Auerbach; W.C. Conner; R.F. Lobo; and G.W. Huber; Investigation into the Shape Selectivity of Zeolite Catalysts for Biomass Conversion, *Journal of Catalysis* (2011), 279, 257-268, DOI: 10.1016/j.jcat.2011.01.019.
50. R. Weingarten; G. A. Tompsett; Wm. Curtis Conner, Jr. and G. W. Huber; Design of Solid Acid Catalysts for Aqueous Phase Dehydration of Carbohydrates: The Role of Lewis and Brønsted Acid Sites, *Journal of Catalysis* (2011), 279, 174-182, DOI: 10.1016/j.jcat.2011.01.013.
51. W. Shen; G. A. Tompsett; K. D. Hammond; R. Xing; F. Dogan; C. P. Grey; W. C. Conner; S. M. Auerbach; and G. W. Huber; Liquid Phase Aldol Condensation Reactions with MgO-ZrO₂ and Shape-Selective Nitrogen-Substituted NaY, *Applied Catalysis A General*, (2011) 392 57-68, DOI: 10.1016/j.apcata.2010.10.023.
52. H.J. Kim, S.M. Choi; S. Green; G. A. Tompsett; M.H. Seo; S.H. Lee; J. Cho; G. W. Huber; and W.B. Kim; Highly active and stable PtRuSn/C catalyst for electrooxidation of ethylene glycol and glycerol, *Applied Catalysis B: Environmental* (2011), 101, 366-375, DOI: 10.1016/j.apcatb.2010.10.005.
53. N. Li; G. A. Tompsett; T. Zhang; J. Shi; C. E. Wyman; and G. W. Huber; Green gasoline from aqueous phase hydrodeoxygenation of aqueous sugar solutions prepared by hydrolysis of maple wood, *Green Chemistry* (2011), 13, 91-101, DOI: 10.1039/c0gc00501k.
54. T. R. Carlson; Y.-T. Cheng; J. Jae and G. W. Huber, Production of Green Aromatics and Olefins by Catalytic Fast Pyrolysis of Wood Sawdust, *Energy and Environmental Science* (2011), 4, 145-161, DOI: 10.1039/c0ee00341g.
55. T. P. Vispute; H. Zhang; A. Sanna; R. Xiao; and G. W. Huber, Renewable Chemical Commodity Feedstocks from Integrated Catalytic Processing of Pyrolysis Oils, *Science* (2010), 330, 1222-1227, DOI: 10.1126/science.1194218.
56. D. G. Vlachos, J. G. Chen, R. J. Gorte, G.W. Huber, M. Tsapatsis, Catalysis Center for Energy Innovation for Biomass Processing: Research Strategies and Goals, *Catalysis Letters* (2010), 140, 77-84, DOI: 10.1007/s10562-010-0455-4.
57. R. Xing; A.V. Subrahmanyam; H. Olcay; W. Qi; G. P. van Walsum; H. Pendse; and G.W. Huber; Production of Diesel and Jet Fuel Range Alkanes from Waste Hemicellulose derived Solutions (**cover story**), *Green Chemistry* (2010), 12, 1933-1946, DOI: 10.1039/c0gc00263a.
58. N. Li; G. A. Tompsett; and G. W. Huber; Renewable High Octane Gasoline by Aqueous Phase Hydrodeoxygenation of C₅ and C₆ Carbohydrates over Pt/Zirconium Phosphate Catalysts, *ChemSusChem* (2010), 3, 1154-1157, DOI: 10.1002/cssc.201000140.
59. A. V. Subrahmanyam; S. Thayumanavan; and G.W. Huber; C-C Bond Formation Reactions for Biomass Derived molecules, *ChemSusChem* (2010), 3, 1158-1161, DOI: 10.1002/cssc.201000136.
60. A. Javaid; T. Ryan; G. Berg; X. Pan; T. Vispute; S. Bhatia; G.W. Huber; and D. M. Ford; Removal of Char Particles from Bio-oils by Microfiltration, *Journal of Membrane Science* (2010), 363(1-2), 120-127, DOI: 10.1016/j.memsci.2010.07.021.
61. J. Cho; J. M. Davis; and G.W. Huber; The Intrinsic Kinetics and Heats of Reactions for Cellulose Pyrolysis and Char Formation, *ChemSusChem* (2010) 3 1162-1165, DOI: 10.1002/cssc.201000119.
62. H. Olcay; L. Xu; Y. Xu; and G. W. Huber; Aqueous-phase hydrogenation of acetic acid over transition metal catalysts (**cover story**), *ChemCatChem* (2010), 2, 1420-1424, DOI: 10.1002/cctc.201000134.

63. R. Weingarten; J. Cho; W.C. Conner, Jr. and G. W. Huber; Kinetics of Furfural Production by Dehydration of Xylose in a Biphasic Reactor with Microwave Heating; *Green Chemistry* (2010) 12, 1423-1429 DOI: 10.1039/c003459b.
64. Jae, J.; Tompsett, G.A.; Lin, Y.C.; Carlson, T.R.; Shen, J.; Zhang, T.; Yang, B.; Taiying Wyman, C. E.; Conner, W. C.; and Huber, G.W.; Depolymerization of Lignocellulosic Biomass into Fuel Precursors: Maximizing Carbon Efficiency by Combining Hydrolysis with Pyrolysis; *Energy and Environmental Science*, (2010), 3, 358-365, DOI: 10.1039/b924621p.
65. Kim, H.J.; Kim, Y.S.; Seo, M.H.; Choi, S.M.; Cho, J.; Huber, G.W.; and Kim, W.B.; Highly improved oxygen reduction performance over Pt/C-dispersed nanowire network systems; *Electrochemical Communications* (2010), 12, 32-35, DOI: 10.1016/j.elecom.2009.10.029.
66. T.R. Carlson; J. Jae; Y.C. Lin; G.A. Tompsett; and G.W. Huber; Catalytic Fast Pyrolysis of Glucose over ZSM-5: The combined homogeneous and heterogeneous reactions, *Journal of Catalysis* (2010), 270(1), 110-124, DOI: 10.1016/j.jcat.2009.12.013.
67. N. Li; and G.W. Huber; Aqueous-phase hydrodeoxygenation of sorbitol: Identification of the reaction pathway, *Journal of Catalysis* (2010), 270(1), 48-59, DOI: 10.1016/j.jcat.2009.12.006.
68. V. Agarwal; G.W. Huber; W.C. Conner; and S.M. Auerbach; Kinetic stability of nitrogen-substituted sites in HY and silicalite from first principles; *Journal of Catalysis* (2010), 270(2), 249-255, DOI: 10.1016/j.jcat.2010.01.001.
69. V. Agarwal; G.W. Huber; W.C. Conner; and S.M. Auerbach;; DFT Study of Nitrided Zeolites: Mechanism of Nitrogen Substitution in HY and Silicalite, *Journal of Catalysis* (2010), 269(1), 53-63, DOI: 10.1016/j.jcat.2009.10.015.
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71. Y.C. Lin; J. Cho; P.R. Westmoreland; and G.W. Huber; Kinetics and Mechanism of Cellulose Pyrolysis, *Journal of Physical Chemistry C* (2009), 113(46), 20097-20107, DOI: 10.1021/jp906702p.
72. T.P. Vispute; and G.W. Huber; Production of hydrogen, alkanes and polyols by aqueous phase processing of wood-derived pyrolysis oils. *Green Chemistry* (2009), 11(9), 1433-1445, DOI: 10.1039/b912522c.
73. T.R. Carlson; J. Jae; and G.W. Huber; Mechanistic Insights from Isotopic Studies of Glucose Conversion to Aromatics Over ZSM-5, *ChemCatChem*, 1, 107-110 (2009), DOI: 10.1002/cctc.200900130.
74. G.A. Tompsett; N. Li; and G.W. Huber; Catalytic Conversion of Sugars to Fuels, Book Chapter in *Thermochemical Processing of Biomass: Conversion into Fuels, Chemicals and Power*, edited by Robert Brown, publisher Wiley, 2011.
75. Y.C. Lin and G.W. Huber; The critical role of heterogeneous catalysis in lignocellulosic biomass conversion, *Energy and Environmental Science* 2, 68-80 (2009), DOI: 10.1039/b814955k.
76. T.R. Carlson; G.A. Tompsett; W.C. Conner; and G.W. Huber; Aromatic Production from Catalytic Fast Pyrolysis of Biomass-derived Feedstocks, *Topics in Catalysis* (2009) 52, 241-252, DOI: 10.1007/s11244-008-9160-6.
77. A. Corma; G.W. Huber; L. Sauvinaud; and P. O'Conner; Biomass to chemicals: Catalytic conversion of glycerol/water mixtures into acrolein, reaction network. *Journal of Catalysis* (2008), 257, 163-171, DOI: 10.1016/j.jcat.2008.04.016.
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80. T.P. Vispute and G.W. Huber; Breaking the Chemical and Engineering Barriers to Lignocellulosic Biofuels, *International Sugar Journal*, 110, 138, 140, 142, 146, 148-149 (2008).
81. G.W. Huber; P. O'Conner; and A. Corma; Processing of Biomass in Conventional Oil Refineries: Production of High Quality Diesel by Hydrotreating Vegetable Oils in Heavy Vacuum-Oil Mixtures: Impact of the Relative rates of decarboxylation, decarbonylation and dehydration/hydrogenation on product distribution, *Applied Catalysis A* (2007), 329, 120-129, DOI: 10.1016/j.apcata.2007.07.002.

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90. G.W. Huber; J.W. Shabaker; S.T. Evans; and J.A. Dumesic; Aqueous-phase reforming of ethylene glycol over supported Pt and Pd bimetallic catalysts, *Applied Catalysis B: Environmental* (2006), 62, 226-235, DOI: 10.1016/j.apcatb.2005.07.010.
91. G.W. Huber and J.A. Dumesic; An overview of aqueous-phase catalytic processes for production of hydrogen and alkanes in a biorefinery, *Catalysis Today* (2006), 111, 119-132, DOI: 10.1016/j.cattod.2005.10.010.
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94. R.R. Davda; J.W. Shabaker; G.W. Huber; and J.A. Dumesic; A Review of Catalytic Issues and Process Conditions for Renewable Hydrogen and Alkanes by Aqueous-Phase Reforming of Oxygenated Hydrocarbons over Supported Metal Catalysts, *Applied Catalysis B: Environmental* (special issue on H₂ Production), *Applied Catalysis B: Environmental* (2005), 56, 171-186, DOI: 10.1016/j.apcatb.2004.04.027.
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102. R.R. Davda; J.W. Shabaker; G.W. Huber; R.D. Cortright; and J.A. Dumesic; Aqueous-phase reforming of ethylene glycol on silica-supported metal catalysts, *Applied Catalysis B: Environmental* (2003), 43, 13-26, DOI: 10.1016/S0926-3373(02)00277-1.
103. G.W. Huber; S.J.M. Butala; M.L. Lee; and C.H. Bartholomew; Gd promotion of Co/SiO₂ Fischer-Tropsch synthesis catalysts, *Catalysis Letters* (2001), 74, 45-48, DOI: 10.1023/A:1016613627261.
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105. G.W. Huber and C.H. Bartholomew.; Pt promotion of Co/SiO₂ Fischer-Tropsch synthesis catalysts, *Studies in Surface Science and Catalysis* (2001), 136 (Natural Gas Conversion VI), 283.

Published Patents and Patent Applications

1. Huber, G.W.; Tompsett, G.A.; Green, S.K.; Kim, W.B.; and Kim, H.J.; Method of Producing Hydrocarbons using a fuel cell and, fuel storage system comprising the fuel cell, US Patent Application US 20140083237 A1 (2014).
2. Huber, G.W.; Cheng, Y-T; Wang, Z.; and Fan, W.; Method for converting a hydrocarbonaceous material to a fluid hydrocarbon product comprising p-xylene, WO 2013185149 A1; US 20130324772 A1 (2013) (Licensed to Anellotech)
3. Huber, G.W.; Zhang, H.; and Carlson, T.R; Method for Producing Fluid Hydrocarbons, US Patent Application 20130060070 (2009). (Licensed to Anellotech)
4. Huber, G.W.; Jae, J.; Cheng, Y-T.; and Gaffney, A.M.; Catalytic Pyrolysis of Solid, Systems and Processes for Catalytic Pyrolysis of Biomass and Hydrocarbonaceous Materials for Production of Aromatics with Optional Olefins Recycle and Catalysts Having Selected Particle Size for Catalytic Pyrolysis, EP 2,494,008 (2012). (Licensed to Anellotech)
5. Huber, G.W.; Cheng, Y-T.; Carlson, T.R.; Jae, J.; Vispute, T.P.; and Tompsett, G.A.; Catalytic Pyrolysis of Solid Biomass and related biofuels, aromatic and olefinic compounds, US Patent US8277643 B2 (2009). (Licensed to Anellotech)
6. Vispute, T.P.; Rao, K.; and Huber, G.W.; Production of Hydrogen, Liquid Fuels, and Chemicals from Catalytic Processing of Bio-Oils World Patent Application (2009); WO 2010033789 A2 20100325.
7. Huber, G. W.; Chheda, J.; Barrett, C. B.; and Dumesic, J. A.; Production of Liquid Alkanes by Aqueous-Phase Processing of Biomass-Derived Carbohydrates, WO 2007103858 A2 20070913 (2006).
8. O'Connor, Paul; Huber, G. W.; Corma, A.; and Sauvinaud, L.; Fluid Catalytic Cracking of Oxygenated Compounds, US 8,207,385 B2. (Licensed to KiOR)
9. O'Connor, Paul; Huber, G. W.; and Corma, A.; Processing of Biomass-derived Oxygenates with Particles Comprising a Coke Deposit, WO 2008006904 A1 20080117. (Licensed to KiOR)
10. O'Connor, Paul; Huber, G. W.; Corma, A.; and Sauvinaud, L.; Process for production of acrolein and other oxygenates from glycerol in a transported bed reactor, WO 2008052993 A2 20080508 (Licensed to KiOR).
11. O'Connor, Paul; Huber, G. W.; and Corma, A.; Production of Linear Alkanes by Hydrotreating Mixtures of Triglycerides with Vacuum Gasoil, WO 2008020048 A2 20080221. (Licensed to KiOR)

Selected Invited non-Conference Presentations

1. G.W. Huber, Design of Zeolites for Biomass Conversion: Renewable Aromatics from Biomass by Catalytic Fast Pyrolysis; J. Heyrovsky Institute of Physical Chemistry of ASCR, V.V.I, Prague, Czech Republic (June, 2014).
2. G.W. Huber, Catalyzing Renewable Fuels and Chemicals: The Chemical Engineering Challenges and Opportunities of the Emerging Clean Fuels and Chemicals Industry, University of Washington (May 12, 2014).
3. G.W. Huber, Catalyzing Renewable Fuels and Chemicals: The Chemical Engineering Challenges and Opportunities of the Emerging Clean Fuels and Chemicals Industry, North Carolina A&T (March 18, 2014).
4. G.W. Huber, Design of New Catalytic Processes for the Production of Renewable Fuels and Chemicals, RSC Roadshow, UNICAMP, Chemistry Institute, Campinas, Brazil and UFGRS, Porto Alegre, Brazil (October, 2013).
5. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, South Korea seminars given at two Korean National Research Institutes (Korea Institute of Science and Technology and Korean Research Institute of Chemical Technology), two Korean petrochemical companies (GS Caltex and Lotte Chemical), and Gwanju Institute of Science and Technology (August 2013).
6. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, Auburn (April, 2013).
7. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, University of Houston (December, 2012).
8. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, Georgia Tech, (November, 2012).
9. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, University of California-Berkeley, Energy Biosciences Institute (October 23, 2012).
10. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, University of Oklahoma, Chemical Engineering Department (September 20, 2012).
11. G.W. Huber, Routes to Make Liquid Transportation Fuels from Biomass, Exxon Corporate Research, New Jersey (April 3, 2012).
12. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, University of Pennsylvania, Chemical Engineering Department (December 7, 2011).
13. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, Princeton, Chemical Engineering Department (November 16, 2011).
14. G.W. Huber, Renewable Fuels and Chemicals from Pyrolysis Based Technologies, Ecole Normale Supérieure, Lyon, France (August 19, 2011).
15. G. W. Huber; Renewable Petrochemicals from Biomass by Catalytic Fast Pyrolysis, 20th Annual Bayer Material Science Symposium, Pittsburgh, PA (October 7, 2011).
16. G.W. Huber, Renewable Fuels and Chemicals from Pyrolysis Based Technologies, Total Catalysis Club, University of Uberlandia (August 19, 2011).
17. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, Zeolyst, PA (June 16, 2011).
18. G.W. Huber, Clean Catalytic Technologies for Production of Renewable Fuels and Chemical, University of Wisconsin Chemical Engineering Department, Madison, Wisconsin (April 5, 2011).
19. G.W. Huber, Renewable Fuels and Chemicals from Pyrolysis Based Technologies, University of Buffalo Chemical Engineering Department, Buffalo, New York (January 24, 2011).
20. G.W. Huber, Renewable Fuels and Chemicals from Pyrolysis Based Technologies, Total Catalysis Club, Brussels, Belgium (January 27, 2011)
21. G.W. Huber, Breaking the Chemical and Engineering Barriers to Lignocellulosic Biofuels, Dupont, Wilmington, Delaware (August 19, 2010).
22. G.W. Huber, Breaking the Chemical and Engineering Barriers to Lignocellulosic Biofuels, Pacific National Northwest Laboratories, Richland, Washington (July 13, 2010).
23. Huber, G.W.; The Potential of Cellulosic Biofuels, Congressional Briefing sponsored by Discover Magazine and NSF, Washington DC July 18, 2009.
24. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, University of Minnesota, Minneapolis, MN, April 2009.

25. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, Columbia University, New York, NY, October 2008.
26. Huber, G.W.; Green Gasoline from Woody Biomass: Catalytic Fast Pyrolysis, Congressional Briefing sponsored by NSF, Washington DC September 2008.
27. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, University of Rochester, Purdue, May 2008.
28. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, University of Rochester, Rochester, NY, February 2008.
29. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, 3M, Minnesota, January 2008.
30. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, BASF, Iselin, NJ, September 2007.
31. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, Michigan State, October 2007.
32. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, Mascoma, Boston MA, August 2007.
33. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, Princeton, May 2007.
34. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, National Science Foundation, February 2007.
35. Huber, G. W.; Production of Liquid Transportation Fuels: Chemistry, Catalysts, and Engineering, University of Massachusetts-Amherst, Polymer Science Department, February, 2007.
36. Huber, G. W.; Production of Fuels and Chemicals from Biomass, Conoco-Phillips, Bartlesville, OK October 2006.

Invited Plenary and Keynote Conference Presentations

1. G.W. Huber; Production of Renewable Aromatics from Biomass by Catalytic Fast Pyrolysis (invited keynote lecture); Annual Shareholders meeting Particle Solid Research Inc (PSRI); Chicago, IL (June 24, 2014).
2. G.W. Huber; Design of Catalysts for Hydrodeoxygenation of Biomass (invited plenary lecture); 2nd International Conference Tailor Made Fuels from Biomass (TMFB); Aachen, Germany (June 16, 2014).
3. G.W. Huber; Thermocatalytic Routes for Biomass Conversion into Fuels; Summer School Catalysis of Biomass (invited plenary lecture); Cascade Deoxygenation process using tailored nanocatalysts for the production of biofuels from lignocellulosic biomass; Liblice Castle, Czech Republic (June 10, 2014).
4. G.W. Huber; Pyrolysis Based Technologies for the Conversion of Lignocellulosic Biomass into Fuels and Chemicals (invited keynote lecture), Shell R&D Center, Amsterdam, Netherland, UK, Symposium to Celebrate 100 years of Catalysis Research at Shell(May 21, 2014).
5. G.W. Huber; Renewable Aromatics from Biomass by Catalytic Fast Pyrolysis (invited plenary lecture), Birmingham, UK, International Meeting Pyro 2014(May 19, 2014).
6. G.W. Huber; Renewable Plastics: Step One in Breaking our Oil Addiction (Bayer Lectureship in Sustainability), Center for Sustainable Chemistry Annual Meeting, Minneapolis, MN (April 22, 2014).
7. G.W. Huber; Production of Renewable Polymer Precursors from Biomass (Bayer Lectureship in Sustainability), Center for Sustainable Chemistry Annual Meeting, Minneapolis, MN (April 22, 2014).
8. G.W. Huber; Design of Catalysts for Hydrodeoxygenation of Biomass (invited plenary lecture), 2nd International Congress on Catalysis for Biorefineries, Dalian, China (September 2013).
9. G.W. Huber; Renewable Aromatics By Catalytic Fast Pyrolysis of Lignocellulosic Biomass (invited keynote speaker), 9th World Congress on Chemical Engineering, Seoul, South Korea (August, 2013)

10. G.W. Huber; Renewable Aromatics By Catalytic Fast Pyrolysis of Lignocellulosic Biomass (invited keynote speaker), 3rd North American Symposium on Chemical Reaction Engineering, Houston, Texas (March, 2013)
11. G.W. Huber; Aqueous Phase Hydrodeoxygenation of Carbohydrates (invited keynote speaker), CAT4Bio Conference, Thessaloniki, Greece (July 2012).
12. G.W. Huber; Renewable Petrochemicals from Biomass by Catalytic Fast Pyrolysis, 243rd American Chemical Society-National Meeting (invited keynote speaker); San Diego, CA (March 2012).
13. G.W. Huber, Renewable Petrochemicals from Catalytic Pyrolysis of Biomass, Catalysis and Alternative Feedstocks for the Biofuels Industry (invited speaker), Council for Chemical Research, Newark, DE (September 22, 2011).
14. G.W. Huber, Renewable Petrochemicals from Biomass by Catalytic Fast Pyrolysis, AIChE National Meeting, Salt Lake City, UT (November 2010) (Invited keynote lecture).
15. Huber, G.W., "The Potential of Cellulosic Biofuels" Congressional briefing: Biofuels-The next generation. June 18th, 2009, Washington DC. Sponsored by NSF, Discovery Channel.
16. Huber, G.W.; Breaking the Chemical and Engineering Barriers to Cellulosic Biofuels, The Business and Biology of Biofuels (invited speaker), University of San Diego, La Jolla, CA, January 2008.
17. Huber, G.W.; The Biology and Chemistry Interface for Cellulosic Biofuels (invited seminar), EPOBIO (workshop on biofuels sponsored by the European Commission); Athens, Greece, May 2006.
18. Huber, G.W.; Production of Liquid Transportation Fuels: Chemistry, Catalysts, and Engineering (invited seminar), American Oil Chemistry Association, Quebec, May 2006.

Other Selected Conference Presentations

1. G.W. Huber, Renewable Fuels and Chemicals from Pyrolysis Based Technologies, Pacific Chem, Honolulu Hawaii (December 16, 2011).
2. A. J. Foster, J. Jae, G. W. Huber, and R. F. Lobo; Optimization of Zeolites for pyrolytic conversion of glucose to aromatic hydrocarbons, ACS National Meeting, Division of Fuel Chemistry (2010), 55(2), 333.
3. G. W. Huber, J. Cho, T. Carlson, R. coolman, V. Agarwal, S. Almalkie, Y. Lin, S. Auerbach, S. deBruyn Kops, T.J. Mountziaris, Green aromatics by catalytic fast pyrolysis of lignocellulosic biomass, 240th ACS National Meeting, Boston, MA 2010 (Invited).
4. Karl D. Hammond, Murad Gharibeh, Geoffrey A. Tompsett, Fulya Dogan, Wenqin Shen, Huber, G.W., Clare P. Grey, Scott M. Auerbach, Wm. Curtis Conner Jr. "The Search for Microporous, Strongly Basic Catalysts: Experiment and Theory in the Synthesis and Characterization of Nitrogen-Doped Zeolite Y" AIChE November 2009, Nashville, TN.
5. Vishal Agarwal, Huber, G.W., William C. Conner, Scott M. Auerbach, "Modeling of Synthesis, Stability and Base Characteristics of Nitrogen-Substituted FAU and MFI" AIChE. November 2009, Nashville, TN.
6. Xiaoming Pan, Tushar Vispute, Huber, G.W., Surita R. Bhatia, "Rheology and Stability Considerations in Processing of Bio-Oils" AIChE November 2009, Nashville, TN
7. Geoffrey A. Tompsett, Jungho Jae, Torren Carlson, Karl D. Hammond, Scott Auerbach, Huber, G. W., W. Curtis Conner, "Size Selectivity in Catalytic Fast Pyrolysis" AIChE. November 2009, Nashville, TN.
8. Ning Li; Kamalakanta Routray and Huber, G.W., "Aqueous-Phase Dehydration/Hydrogenation of Sorbitol: Identification of Reaction Pathways", to AIChE 2009 annual Conference, Nashville, TN..
9. Jiacheng Shen, Bin Yang and Charles E. Wyman, "Kinetic Study on the Hydrochloride Acid-Catalyzed Hydrolysis of Cellulose to Levulinic Acid and Formic Acid" to AIChE 2009 annual Conference, Nashville, TN.
10. Vispute, Tushar P, Huber G. W., "Production of Hydrogen and alkanes by aqueous phase processing of aqueous fraction of bio-oil" 237th ACS National Meeting, Salt Lake City, UT, United States, March 22-26, 2009.
11. Ning Li and Huber, G.W., "Renewable alkanes, alcohols and polyols by aqueous-phase dehydration/hydrogenation of biomass-derived oxygenates"

- 238th American Chemical Society National Meeting & Exposition, Washington DC, August 2009.
12. Huber, G. W.; Katz, Alexander. "Advanced catalysis for conversion of biologically derived feedstocks" 235th ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008.
 13. Bartholomew, Calvin H.; Paul, Uchenna P.; Huber, G. W. "Fischer-Tropsch synthesis on cobalt: A combined macro-microkinetic study" 235th ACS National Meeting, New Orleans, LA, United States, April 6-10, 2008.
 14. Corma, A.; Huber, G. W.; Sauvinaud, L.; and O'Conner, P.; Processing of biomass-derived oxygenates in the oil refinery: catalytic cracking of biomass-derived oxygenates, 234 ACS National Meeting, Boston, MA August 2007.
 15. Huber, G. W.; Breaking the Chemical and Engineering Barriers to Lignocellulosic Biofuels, 234 ACS National Meeting, Boston, MA August 2007.
 16. Bartholomew, C. H. and Huber, G. W.; Kinetics of Fischer-Tropsch Synthesis on Cobalt, 234 ACS National Meeting, Boston, MA August 2007.
 17. Huber, G. W.: Catalysis for Bio-Based Fuels, New England Catalysis Club, Worcester, MA (2007).
 18. Huber, G. W.; Shabaker, J. W.; Evans, S.; and Dumesic, J. A.; Aqueous-Phase Reforming of Ethylene Glycol with Supported Pt and Pd Bimetallics Catalysts, American Institute of Chemical Engineers National Meeting, San Francisco, CA (2006).
 19. Huber, G. W.; Chheda, J.; Barrett, C. B.; and Dumesic, J. A.; Renewable Liquid Alkanes from Aqueous-Phase Processing of Biomass-derived Carbohydrates, American Chemical Society National Meeting, Atlanta, GA, Honorary Symposium for James A. Dumesic, Invited Speaker (2006).
 20. Chheda, J.; Barrett, C. B.; Huber, G. W.; and Dumesic, J. A.; Production of Large, Water-Soluble Intermediates from Carbohydrate-derived Compounds by Sequential Condensation/Hydrogenation, American Chemical Society National Meeting, Atlanta, GA, (2006).
 21. Huber, G. W.; Chheda, J.; Barrett, C. B.; and Dumesic, J. A.; Renewable Liquid Alkanes from Aqueous-Phase Biorefining of Oxygenated Hydrocarbons, American Chemical Society Colloid and Surface Science Symposium, Potsdam, NY, Honorary Symposium for Calvin H. Bartholomew, Invited Speaker (2005).
 22. Huber, G. W.; Chheda, J.; Barrett, C. B.; and Dumesic, J. A.; Renewable Liquid Alkanes from Aqueous-phase Biorefining of Oxygenated Hydrocarbons, North American Catalysis Meeting, Philadelphia, PA (2005).
 23. Huber, G. W.; Renewable Hydrogen and Liquid Alkanes from Catalytic Biorefining of Biomass-derived Carbohydrates (invited seminars at: Colorado School of Mines, Jan 2005; Massachusetts Institute of Technology, Feb 2005; University of Massachusetts-Amherst, Feb 2005; Washington State, Mar 2005; Brigham Young University, Mar 2005; Oklahoma State, Apr 2005.)
 24. Huber, G. W.; Chheda, J.; Barrett, C. B.; and Dumesic, J. A.; Production of Liquid Alkanes by Aqueous-Phase Processing of Biomass-Derived Carbohydrates, American Institute of Chemical Engineers National Meeting, Austin, TX (2004).
 25. Huber, G. W.; Davda, R. R.; Shabaker, J. W.; Cortright, R. D.; and Dumesic, J. A.; Catalytic Generation of H₂ by Aqueous-phase Reforming of Biomass-Derived Oxygenated Hydrocarbons, BioCycle Conference: Renewable Energy From Organics Recycling, Minneapolis, MN (2003).
 26. Shabaker, J. W.; Huber, G. W.; Davda, R. R.; Cortright, R. D.; and Dumesic, J. A.; Catalytic Generation of H₂ by Aqueous-phase Reforming of Biomass-Derived Oxygenated Hydrocarbons, American Institute of Chemical Engineers National Meeting, San Francisco, CA (2003).
 27. Davda, R. R.; Alcalá, R.; Shabaker, J. W.; Huber, G. W.; Cortright, R. D.; and Dumesic, J. A.; Hydrogen Generation by Catalytic Reforming of Oxygenated Hydrocarbons, American Institute of Chemical Engineers National Meeting, Indianapolis, IN (2002).
 28. Cortright, R. D.; Davda, R. R.; Shabaker, J. W.; Huber, G. W.; and Dumesic, J. A.; Generation of Hydrogen via Liquid-Phase Reforming of Carbohydrate-Derived Oxygenated Compounds, American Institute of Chemical Engineers National Meeting, Indianapolis, IN (2002).
 29. Davda, R. R.; Alcalá, R.; Shabaker, J. W.; Huber, G. W.; Cortright, R. D.; Mavrikakis, M.; and Dumesic, J. A.; DFT and experimental studies of C-C and C-O bond cleavage in ethanol and ethylene glycol on Pt catalysts, Fourth Tokyo Conference on Advanced Catalytic Science and Technology, Tokyo, Japan (2002).

30. Cortright, R. D.; Huber, G. W.; Mavrikakis, M.; and Dumesic, J. A.; Vapor-Phase Reductions of Oxygenated Compounds over Silica-Supported Ru and Ru/Sn, American Institute of Chemical Engineers National Meeting, Reno, NV (2001).
31. Huber, G. W.; and Bartholomew, C. H.; Pt promotion of Co/SiO₂ Fischer-Tropsch synthesis catalysts, Natural Gas Conversion Symposium VI, AL (2001).
32. Huber, G. W.; Guymon, C.G.; Conrad, T.L.; Stephenson, B.C.; and Bartholomew, C. H.; Hydrothermal stability of Co/SiO₂ Fischer-Tropsch synthesis catalysts, International Catalyst Deactivation Symposium, (2001).
33. Huber, G.W.; Bartholomew, C.H.; Conrad, T.L.; Woolley, K.W.; and Guymon, C.G.; Pt promotion of Co/SiO₂ Fischer-Tropsch synthesis catalysts, American Chemical Society National Meeting, Petroleum Division, San Francisco, CA (2000).
34. Bartholomew, C.H.; Zennaro, R.; and Huber, G. W.; Kinetics of Fischer-Tropsch synthesis on titania- and silica-supported cobalt, American Chemical Society National Meeting, Petroleum Division, Anaheim, CA (1999).

Funded Projects

1. Workshop on Breaking the Chemical and Engineering Barriers to Lignocellulosic Biofuels, Sponsors: National Science Foundation and Department of Energy, \$56,500.
2. MRI: Instrumentation for a Biofuels Lab, George Huber (PI), Co-PI's: Mike Henson, Susan Leschine, Curt Conner, and Om Parkash, Sponsor: National Science Foundation-Major Research Instrumentation, \$513,600, 2007.
3. Nanostructured Molecular Sieve Basic Catalysts: Opportunities for Renewable Fuels, with Curt Conner (PI) and Scott Auerbach, Sponsor: Department of Energy-Basic Energy Sciences, \$475,000, 2007-2010.
4. Production of Home Heating Oils and Upgraded Bio-oils by Aqueous-Phase Catalytic Processing of Bio-oils Produced from Fast Pyrolysis of Woody Biomass, with Renewable Oil International, Sponsor: DOE STTR Phase 1, \$100,000, 2007-2008.
5. CAREER: Selective Thermal Processing of Biomass-derived Oxygenates by Catalytic Fast Pyrolysis, Sponsor: National Science Foundation, \$400,000, 2008-2012.
6. Biofuels Production by Aqueous-Phase Hydrogenation Reactions: A Combined Experimental and Theoretical Approach, Sponsor: Petroleum Research Fund, \$50,000, 2007-2009.
7. Microwave Enhanced Catalytic Production of Biofuels, with Curt Conner (PI) and K. Sigfrid Yngvesson, Sponsor: National Science Foundation, \$550,000, 2008-2011.
8. Green Gasoline from Catalytic Fast Pyrolysis of Lignocellulosic Biomass, Sponsor: CVIP Technology Development Fund, \$30,000, 2008.
9. Development of a Transportable Fast Pyrolysis System to Convert Municipal Solid Waste and Other Forms of Biomass into Liquid Fuels, with Renewable Oil International, Sponsor: Air Force SBIR Phase 1, \$100,000, 2008-2009.
10. Production of JP-8 Range Molecules from Lignocellulosic Biomass; with Curt Conner and George Huber (PI); DARPA (subcontract to Logos Technologies); \$1,700,000; 12/2008-10/2010.
11. Catalysts for Production of JP-8 Range Molecules from Lignocellulosic Biomass; George Huber (PI) with University of Wisconsin, University of Delaware, University of California-Riverside; DARPA-SurfCat; \$3,360,900 12/2008-12/2011. (1 summer month/yr)
12. Fast Pyrolysis Oil Stabilization: An Integrated Catalytic and Membrane Approach for Improved Bio-oils; George Huber (PI); with David Ford, Surita Bhatia and Renewable Oil International; DOE-EERE Office of Biomass; \$986,000; 12/2008-12/2010.
13. Rational Design of Innovative Catalytic Technologies for Biomass Derivative Utilization; (PI: D. Vlachos, U. Delaware; ~20 co-PIs) Sponsor Department of Energy EFRC; my share \$500,000; 9/1/09 – 8/31/14.
14. Green Aromatics by Catalytic Fast Pyrolysis of Lignocellulosic Biomass; PI George Huber (4 other Co-PIs all UMass); Sponsor NSF-EFRI-HyBi, \$2,000,000; 9/1/09-9/1/14.
15. Design of Bi-functional and Bimetallic Atomic Layer Deposition Catalysts for Hydrodeoxygenation of Biomass derived Oxygenates; (PI: C. Marshall, U. Delaware; ~20 co-PIs) Sponsor Department of Energy EFRC; Huber's budget \$240,000; 9/1/12 – 8/31/14. (0.5 summer month/yr; 0 academic year support)

16. Dreyfus-Teacher Scholar Awards; \$75,000, 2012-2015. (0 summer month/yr; 0 academic year support)
17. CO₂ and H₂O Solar Conversion with Plasmonic PhotoCatalysts; ARPA-E; \$2,375,000 (Wisconsin portion of budget); 2/2013-2/2016. (1 summer month/yr; 0 academic year support).
18. Selective Conversion of Butene or Propylene to Longer Chain Olefin (LCO) Mixtures (C₆-C₁₆) with High L/B Ratio, \$1,200,000, 1/2013-1/2017, (1 summer month/yr) DOW Chemical.
19. Processes for Production of alpha,omega-diols from Lignocellulosic Biomass, Huber PI (with Dumesic, Hermans, Maravelias, Banholzer, Minnesota and Argonne National Lab), Sponsor DOE-EERE BETO program, \$3,300,000, 2/2015-2/2017 (1 summer month/yr)
20. Catalytic Processes for Biomass Conversion into Distillate Range Molecules, Huber PI (with Dumesic), Sponsor Exxon Mobil Corporate Research, \$1,300,000, 1/2015-12/16 (1 summer month/year)
21. MRSEC SEED Proposal: Synthesis and Characterization of Supported Monometallic and Bimetallic Nanoparticles by Atomic Layer Deposition and Controlled Surface Reactions, PI George Huber with M. Mavrikakis, I. Hermans and JA Dumesic, Sponsor: NSF MRSEC, \$187,000, 1/15-12/16.
22. First-principles Guided Design and Synthesis of Nanostructured Catalysts for Effective Utilization of Low-Carbon Resources, PI George Huber and M. Mavrikakis (with W Banholzer, JA Dumesic, CT Maravelias, I Hermans and others), Sponsor Research Innovation Committee College of Engineering and Wisconsin Energy Institute, \$200,000, 1/15-12/16.

Students, Post-Docs and Visiting Scientists from Huber Research Group

Graduated PhD Students

1. Dr. Torren Carlson, 2006- 2010, Current Position: DuPont.
2. Dr. Tushar Vispute, 2005-2010, Current Position: Praxair.
3. Dr. Hakan Olcay, 2005-2011, Current Position: MIT.
4. Dr. Jungho Jae, 2007-2012, Current Position: Korean Institute of Science and Technology (KIST)
5. Dr. Yu-Ting Cheng, 2007-2012, Current Position: Anellotech
6. Dr. Vishal Agarawal, 2006-2012, Current Position: U.C. Santa Barbara
7. Dr. Sara Green, 2009-2014, Current Position: Exxon Mobil
8. Dr. Ronen Weingarten, 2008-2014, Current Position: Dow Corning
9. Dr. Chris Gilbert, 2009-2014, Current Position:
10. Dr. Aniruddha Upadhye, 2009-2014, Current Position 3M

Previous Post-Doctoral Researchers

1. Dr. Yu-Chuan Lin, Post-doc 2007-2009, Current Position: Associate Professor Chemical Engineering, Yuan-Ze University.
2. Dr. Ning Li, Post-doctoral researcher 2008-2010, Current Position: Associate Professor Dalian Institute of Chemical Physics.
3. Dr. Kamalakanta Routray, Post- doctoral researcher, 2009-2010, Current Position: Evonik.
4. Dr. A.V. Subrahmanyam, Post- doctoral researcher, 2009-2010, Current Position: University of Massachusetts-Chemistry Department.
5. Dr. Wenqin Shen, Post-doctoral researcher, 2009-2010, Current Position: SudChemie.
6. Dr. Rong Xing, Post-doctoral researcher, 2009-2011, Current Position: PNNL
7. Dr. Jungmo Cho, Post-doctoral researcher, 2009-2011, Current Position: Korean Research Institute of Chemical Technology (KRICT)
8. Dr. Yong Tae Kim, 2012- 2014, Current Position: Korean Research Institute of Chemical Technology (KRICT)
9. Dr. Hyung Ju Kim, 2012-2014, Current Position: Korean Research Institute of Chemical Technology (KRICT)

Previous Visiting Scholars

1. Sanna Aimaro (PhD candidate), Visiting Scholar 2009, Current Position: PhD Candidate, Nottingham Fuel and Energy Centre, School of Chemical and Environmental Engineering, University of Nottingham, University Park, Nottingham, NG7 2RD
2. Professor Won Bae Kim, Visting Scientist 2009-2010, Current Position: Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju 500-712, Republic of Korea.
3. Professor A. Pandurangan, Visiting Scientist 2009-2010, Current Position: Director Institute of Catalysis and Petroleum Technology Anna University, Chennai, India.
4. Hyuian Zhang (PhD Candidate), Visiting Scholar 2009-2010, Current Position: PhD Candidate School of Energy and Environment, Southeast University, Nanjing 210096, China.
5. Dr. Junzhao Run, 2012-2013, PhD Candidate, China
6. Dr. Run Xu, 2012-2013, Sinopec, China
7. Dr. Jungmeng Cai, 2012-2013, Current Position: Associate Professor Shanghai Jiao Tong University, China.
8. Dr. Liquin Ji, 2012-2013, Current Position: Associate Professor Shanghai Jiao Tong University, China.
9. Dr. Juliana da Silveira Espindola, 2012-2014, Brazil
10. Dr. Hakon Bergem, 2013-2014, SINTEF
11. Prof Ying Zhang, 2013, Professor, University of Science and Technology, Hefei, Anhui, China
12. Wen Chen, 2013, Graduate Student, State Key Laboratory of Clean Energy Utilization, Zhejiang University, Hangzhou, 310027, PR China

13. Professor. Fei Cao, 2013, College of Biotechnology and Pharmaceutical Engineering, Nanjing Tech University, 30 South Puzhu Road, Nanjing, Jiangsu 211816 (China)
14. Dr. Xu Zeng, 2013, current address unknown

Current Post-Doctoral Researchers, Visiting Scientists and Visiting Scholars

1. Prof Haiping Wang, 2013-present
2. Dr. Zehui Zhang, 2013-present
3. Jun Hu, 2014-present
4. Xiaoli Chen, 2014-present

Current PhD Students

1. Jechan Lee, PhD Candidate, 2010-present.
2. Pranav Uday Karajkar, PhD Candidate, 2010-present.
3. Robert Coolman, PhD Candidate (co-advised with Lakis Mountzarias), 2009-present.
4. Insoo Ro, PhD Candidate (co-advised with James A. Dumesic), 2012-present
5. Zhuoran Xu, PhD Candidate, 2012-present.
6. Kevin Barnett, PhD Candidate, 2013-present
7. Daniel McClelland, PhD Candidate, 2013-present
8. Joseph Chada, PhD Candidate, 2013-present
9. Nathaniel Eagan, PhD Candidate, 2014-present
10. Siddarth Krishna (co-advised with James A. Dumesic), PhD Candidate, 2014-present
11. Dongting Zhao (co-advised with Ive Hermans), PhD Candidate, 2014-present