DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES

Feng Wang

Dalian Institute of Chemical Physics, Chinese Academy of Sciences

457 Zhongshan Road, Dalian, China (116023)

Tel.: (+86) 411-39787215, Fax: (+86) 411-39787215

E-mail: wangfeng@dicp.ac.cn

Web: http://fwang.dicp.ac.cn/index.htm

Education:

Sep 1995 – Jul 1999	Zhengzhou University, China, Department of Chemistry, B.S.
Sep 1999 – Jan 2005	Dalian Institute of Chemical Physics, Chinese Academy of sciences, Ph.D. Physical Chemistry

Academic and Working Experience:

May 2022 – present	**Associate Editor, *ACS Catalysis***
May 2021 – present	**Vice Director, Dalian Institute of Chemical Physics, CAS**
Oct 2018 – Mar 2024	Director, Division of Biomass Conversion & Bio-energy, Dalian Institute of Chemical Physics, CAS
Jan 2014 – Oct 2018	Vice Director, Division of Biomass Conversion & Bio-energy, Dalian Institute of Chemical Physics, CAS
Jun 2011 – present	Professor, Dalian Institute of Chemical Physics, CAS
Dec 2009 – Jun 2011	Associate Professor, Team leader of Bioenergy Chemical Group, Dalian Institute of Chemical Physics, CAS
Sep 2006 – Dec 2009	Postdoc, Catalysis Research Center, Hokkaido University, Japan
Aug 2005 – Sep 2006	Postdoc, Department of Chemical Engineering, University of California-Berkeley, USA
Mar 2005 – Jul 2005	Assistant Professor, Organic Catalysis Group, Dalian Institute of Chemical Physics, CAS

Research Interests:

- Synthesis and characterization of structurally well-defined nanomaterials, such as metal oxides, zeolites, and metal nanoparticles
- Development of green and environmentally benign processes for the production of oxygenates from olefins, alcohols and carbon oxides
- Catalytic upgrading of biomass (lignocellulose and derivatives) into phenolic compounds, alcohols and polymer building blocks
- Photocatalysis for solar fuel production, CO_2 valorization, and biomass conversion
- Theoretical calculations and machine learning in catalytic materials and chemistry

Awards

- 2023 First-class Dalian Natural Science Award
- 2022 Rare Earth Science and Technology Award - First Prize of Fundamental Research
- Min Enze Energy and Chemical Industry Award - Outstanding Contribution Award, 2021
- ACS Sustainable Chemistry & Engineering Lectureship Awards, ACS, 2020

- National Science Fund for Outstanding Young Scholars, NSFC, 2020
- NSFC-RS Newton Advanced Fellowship, 2019 (Collaborator: Stuart Taylor, Cardiff University, UK)
- Jiaxi Lu Excellent Mentor Award, 2020
- Mentor Award of Chinese Academy of Science, 2019
- Cheung Kong Youth Scholar Program, Ministry of Education of P.R. China, 2016
- National Science Fund for Excellent Young Scholars, NSFC, 2014
- Lin Liwu Excellent Youth Award, 2012
- Chinese Catalytic Xinxiu Award, Chinese Chemistry Society, 2012
- Young Scientist Award, 15th International Congress on Catalysis, Munich, 2012
- Chinese Academy of Sciences (CAS) Presidential Scholarship, 2005

Memberships:

American Chemical Society (ACS)
Chinese Chemical Society (CCS)

Conference Talk:

1. Catalytic Depolymerization of Lignocellulose, 16th Eurasia Conference on Chemical Sciences 2023, Bangkok, Thailand, Dec. 13-15, 2023
2. Catalytic Fractionation of Lignocellulose towards Holistic Valorization, 9th Asia-Pacific Congress on Catalysis (APCAT-9), Hangzhou, China, Oct. 30-Nov. 2, 2023
3. Photocatalytic biorefineries for H_2 production, 2023 International Conference on Photochemistry and Industry, Wuhan, Oct. 10-13, 2023
4. Photocatalytic Cleavage of Lignin C−C or C−O bond, Nature Sustainability Workshop Series, Shenzhen, May 13, 2021
5. Catalytic conversion of lignin into aromatic chemicals, 2020 2nd International Youth Conference on Lignin- and Collagen-based Materials (2nd IYCLCM-2020), Dalian, Nov. 07, 2020
6. Light-driven Catalytic Biomass Conversion, Syngenta International Online Conference, Oct. 22, 2020
7. Light-Driven Catalytic Biomass Conversion to Liquid Fuels and Chemicals, The China-UK Catalysis Symposium, Dalian, Oct. 21, 2020
8. Light-driven Catalytic Biomass Conversion to Liquid Fuels and Chemicals, The 1st CAS-NST Joint Symposium - Focusing on Energy-Related Catalysis, Sept. 1-3, 2020
9. 2020 Catalysis Gordon Research Conference, June 28, 2020
10. Photocatalytic conversion of biomass and its derivatives, the 24th Annual Green Chemistry & Engineering Conference, Washington, USA, June 15-20, 2020
11. Catalytic scissoring of lignin C−C and C−O bonds, the 6th UK Catalysis Conference (UKCC), Loughborough, UK, Jan. 1-7, 2020
12. Ru/Ceria catalyzes the C−C/C−N bond formation reactions and Selective production of phase-separable product from a mixture of biomass-derived aqueous oxygenates, and Visible-light-driven coproduction of diesel precursors and hydrogen from lignocellulose-derived methylfurans, The 258th ACS National Meeting, Aug. 24-31, 2019
13. Photocatalytic Conversion of Biomass to Fuels and Chemicals, The 10th National Conference

on Environmental Chemistry (10th NCEC), Beijing, August 15-19, 2019

14. Catalytic Cleavage of Lignin and its Derivatives into Aromatic Compound, The Spring Meeting of Korea Institute of chemical Engineers (KIChE), Jeju, Republic of Korea, April 23-27, 2019
15. Oxidative cleavage of carbon-carbon bonds of lignin to aromatic and Ceria catalysts for stitching small molecules via multiple bond formation, The 257th ACS National Meeting, Orlando, USA, March 31- April 4, 2019
16. Homogeneous Catalytic Oxidation of Lignin to Cleave C−O and C−C Bonds, Lignin Gordon Research Conference, Easton, USA, Aug. 5-10, 2018
17. Heterogeneous catalysis for lignin conversion, ACS Publications Forum in the 31st CCS, Hangzhou, China, May 5-8, 2018
18. Catalytically oxidative cleavage of lignin C−C bond, The 255th ACS National Meeting, New Orleans, USA, March 18-22, 2018.
19. Catalytic Oxidative Cleavage of C−C Bond Converts Lignin Models and Extracts to Aromatic chemicals, CatBior 2017, Lyon, France, Dec. 11-15, 2017.
20. Acid-base Catalysis of Ceria and Doped Ceria in Organic Transformation, OKCAT2017, Osaka, Japan, Oct. 27-28, 2017.
21. Photocatalytic Cleavage of Lignin into Aromatics, The 254th ACS National Meeting, Washington DC, USA, Aug. 20-24, 2017.
22. Catalytic Conversion of Lignin Models and Extracts into Oxygenates, The 253th ACS National Meeting, San Francisco, USA, April 2-6, 2017.
23. Catalytic cleavage of lignin C−C and/or C−O bonds to oxygenates, International Symposium on Catalytic Activation and Selective Conversion of Energy-Related-Molecules, Xiamen, China, July 10-12, 2016
24. Defect Site Control of Ceria and the Efficient Catalysis in Organic Reactions, The Pacifichem2015, Hawaii, USA, Dec. 14-20, 2015
25. *Session organizer.* Hydrogenolysis of lignin and lignosulfonate over nickel-based catalysts, The Pacifichem2015, Hawaii, USA, Dec. 14-20, 2015
26. Ceria-catalyzed organic reactions, The 17th International Symposium on Relations between homogeneous and heterogeneous catalysis, Utrecht, the Netherlands, July 12-15, 2015
27. Defected oxide-supported gold nanoparticles: charge transfer and crystalline effect in catalysis, The Gold2015 Conference, Cardiff, UK, July 28-30, 2015
28. Catalytic Organic Transformation Reactions over Nanostructured Oxides, PIRE-ECCI Annual Meeting, Santa Barbara, USA, Dec. 16-17, 2013
29. Catalytic Nature of Oxides as Water-Tolerant Lewis Acidic Catalysts in Hydrolysis Reaction, 23rd North American Catalysis Society Meeting, Louisville, USA, Oct. 16, 2013
30. Fundamental studies on lignin depolymerization reaction in alcohol over nickel-based catalysts, 2nd International Symposium on Green Chemistry Renewable carbon and Eco-Efficient Processes, La Rochelle, France, May 21-24, 2013
31. Catalytic Nature of Oxides as Water-Tolerant Lewis Acidic Catalysts in Hydrolysis Reaction, The 6th Asia-Pacific Congress on Catalysis, Taipei, Taiwan, Oct. 13, 2013
32. Electron Transfer at the Interface of Gold Nanoparticles and Partially Reduced MoO_x and Catalytic Applications, The 6th International conference GOLD 2012, Tokyo, Japan, Sep. 7, 2012

33. Catalytic utilization of glycerol as a sustainable feedstock for chemicals and materials, The 15th International Congress on Catalysis, Munich, Germany, July 1-6, 2012
34. Catalytic C–C Cross Coupling Reactions at Benzylic Position over Molybdenum Oxide, The Sixth Tokyo Conference on Advanced Catalytic Science and Technology & The Fifth Asia Pacific Congress on Catalysis, Sapporo, Japan, July 18-23, 2010

Major Grants and Funds:

1. National Key R&D Program, "Directional catalytic conversion of biomass to prepare high value-added oxygenated chemicals", 2022/12-2027/11.
2. Major Program of National Natural Science Foundation of China, "The conversion of methanol coupling with oxygenates", 2020/01-2024/12.
3. National Science Fund for Outstanding Young Scholars, "Heterogenous Catalysis", 2021/01-2025/12.
4. National Key R&D Program (International Science and Technology Innovation Cooperation Key Special Project), "Photocatalyzed selective transformation of lignocellulose with hydrogen production", 2020/01-2022/12. (*Collaborator*: Paolo Fornasiero, the University of Trieste, Italy)
5. NSFC-RS Newton Advanced Fellowship, "Catalytic transformation of light alkanes to olefins or oxygenates", 2019/03-2022/02. (*Collaborator*: Stuart Taylor, Cardiff University, United Kingdom)
6. Dalian Science and Technology Innovation Fund, "Catalytic technology for high-value utilization of low-carbon olefins", 2019/01-2021/12.
7. Strategic Priority Research Program of the Chinese Academy of Sciences (B), "Research on New Catalytic Reaction for Efficient Use of Resources", 2016/06-2021/05.
8. National Science Fund for Excellent Young Scholars, "Heterogenous Catalysis", 2015/01-2017/12.

Book, Review & Perspectives:

1. Chaofeng Zhang, Feng Wang. Lignin Conversion Catalysis: Transformation to Aromatic Chemicals[M]. Weinheim, Germany: WILEY-VCH GmbH, 2022. Print ISBN 978-3-527-34973-9.
2. Jianyu Han; Junju Mu; Feng Wang, Single-Metal Alloys. In *Supported Metal Single Atom Catalysis*[B], 2022; pp 145-168. (chapter)
3. Chaofeng Zhang, Feng Wang, Catalytic cleavage of lignin C–O and C–C bonds. *Advances in Inorganic Chemistry*, 2021, 77: 175-218. (Editor: Ford, Peter C.; van Eldik, Rudi) (chapter)
4. Chaofeng Zhang,* Xiaojun Shen, Yongcan Jin,* Jinlan Cheng, Cheng Cai, Feng Wang*, Catalytic Strategies and Mechanism Analysis Orbiting the Center of Critical Intermediates in Lignin Depolymerization. *Chemical Rev*iews 2023, 123, 8, 4510-4601.
5. Zhipeng Huang; Nengchao Luo; Chaofeng Zhang; Feng Wang, Radical generation and fate control for photocatalytic biomass conversion. *Nature Reviews Chemistry* 2022, 6, 197-214.
6. Zhuyan Gao#, Puning Ren#, Lulu Sun, Nengchao Luo*, Feng Wang*. Photocatalysts for steering charge transfer and radical reactions in biorefineries, *Nature Synthesis*, 2024, 3, 438-451.
7. Xiaojun Shen; Chaofeng Zhang; Buxing Han; Feng Wang, Catalytic self-transfer hydrogenolysis of lignin with endogenous hydrogen: road to the carbon-neutral future. *Chemical Society Reviews* 2022, 51, 1608-1628.
8. Xuejiao Wu; Nengchao Luo; Shunji Xie*; Haikun Zhang; Qinghong Zhang; Feng Wang*; Ye Wang*, Photocatalytic transformations of lignocellulosic biomass into chemicals. *Chemical Society Reviews* 2020, 49(17), 6198-6223.
9. Hongji Li; Anon Bunrit; Ning Li; Feng Wang*, Heteroatom-participated lignin cleavage to functionalized aromatics. *Chemical Society Reviews* 2020, 49(12), 3748-3763.

10. Min Wang*, Hongru Zhou, Feng Wang*. Photocatalytic biomass conversion for hydrogen and renewable carbon-based chemicals, *Joule*, 2024, 8(3), 604-621.
11. Min Wang*, Hongru Zhou, and Feng Wang*. Photocatalytic Production of Syngas from Biomass. *Accounts of Chemical Research* 2023, 56, 9, 1057-1069.
12. Chaofeng Zhang; Feng Wang, Catalytic Lignin Depolymerization to Aromatic Chemicals. *Accounts of Chemical Research* 2020, 53(2), 470-484.
13. Mahdi M. Abu-Omar; Katalin Barta; Gregg T. Beckham; Jeremy S. Luterbacher; John Ralph; Roberto Rinaldi; Yuriy Román-Leshkov; Joseph S. M. Samec; Bert F. Sels; Feng Wang, Guidelines for performing lignin-first biorefining. *Energy & Environmental Science*, 2021, 14 (1), 262-292.
14. Min Wang; Feng Wang*, Catalytic Scissoring of Lignin into Aryl Monomers. *Advanced Materials* 2019, 31(50), 1901866.
15. Feng Wang* and Haohong Duan*. Opportunities and future directions for photocatalytic biomass conversion to value-added chemicals, *Chem Catal.*, 2022, 2, 4, 644-646.
16. Haohong Duan* and Feng Wang*. Opportunities for electrocatalytic biomass valorization, *Chem Catal*., 2022, 2, 4, 641-643.
17. Lijun Lei; Yehong Wang; Zhixin Zhang; Jinghua An; Feng Wang*, Transformations of Biomass, Its Derivatives, and Downstream Chemicals over Ceria Catalysts. *ACS Catalysis* 2020, 10(15), 8788-8814.
18. Chaofeng Zhang; Feng Wang*, Sell a dummy: Adjacent functional group modification strategy for the catalytic cleavage of lignin beta-O-4 linkage. *Chinese Journal of Catalysis* 2017, 38(7), 1102-1107.
19. Z. Y. Gao; N. C. Luo; Z. P. Huang; S. H. Taylor; F. Wang, Controlling Radical Intermediates in Photocatalytic Conversion of Low-Carbon-Number Alcohols. *ACS Sustainable Chemistry & Engineering* 2021, 9, 6188-6202.
20. Xueyuan Wang, Nengchao Luo, Feng Wang*. Advances and challenges of photocatalytic methane C-C coupling. *Chin. J. Chem*., 2022, 12, 1492-1505.

Research articles:

1. Ning Li, Kexin Yan, Thanya Rukkijakan, Jiefeng Liang, Yuting Liu, Zhipeng Wang, Heran Nie, Suthawan Muangmeesri, Gonzalo Castiella-Ona, Xuejun Pan, Qunfang Zhou, Guibin Jiang, Guangyuan Zhou, John Ralph, Joseph S.M. Samec*, Feng Wang*. Selective lignin arylation for biomass fractionation and benign bisphenols. *Nature*, 2024, doi: 10.1038/s41586-024-07446-5.
2. Nengchao Luo; Tiziano Montini; Jian Zhang; Paolo Fornasiero; Emiliano Fonda; Tingting Hou; Wei Nie; Jianmin Lu; Junxue Liu; Marc Heggen; Long Lin; Changtong Ma; Min Wang; Fengtao Fan; Shengye Jin; Feng Wang*, Visible-light-driven coproduction of diesel precursors and hydrogen from lignocellulose-derived methylfurans. *Nature Energy*, 2019, 4(7), 575-584.
3. Zhipeng Huang[‡]; Zhitong Zhao[‡]; Chao Feng Zhang; Jianmin Lu; Huifang Liu; Nengchao Luo; Jian Zhang; Feng Wang*, Enhanced photocatalytic alkane production from fatty acid decarboxylation via inhibition of radical oligomerization. *Nature Catalysis*, 2020, 3(2), 170-178.
4. Xuke Chen, Yu Xia, Yingfeng Wu, Yunpeng Xu, Xiuquan Jia*, Richard N. Zare*, Feng Wang*. Sprayed Oil–Water Microdroplets as a Hydrogen Source. *J. Am. Chem. Soc*., 2024, 146, 15, 10868-10874.
5. Ruolan Zhang[#], Zhenyuan Zhang[#], Xuke Chen[#], Jichun Jiang, Lei Hua, Xiuquan Jia,* Rui Bao,* Feng Wang*. Pyrogenic Carbon Degradation by Galvanic Coupling with Sprayed Seawater Microdroplets, *J. Am. Chem. Soc*., 2024, 146, 8528-8535.
6. Jianyu Han[#], Jingyi Yang[#], Zhixin Zhang[#], Xunzhu Jiang, Wei Liu*, Botao Qiao*, Junju Mu*, Feng Wang. Strong Metal–Support Interaction Facilitated Multicomponent Alloy Formation on Metal Oxide Support. *J. Am. Chem. Soc*., 2023, 145, 41, 22671–22684.
7. Xuke Chen, Yu Xia, Zhenyuan Zhang, Lei Hua, Xiuquan Jia*, Feng Wang, Richard N. Zare*. Hydrocarbon Degradation by Contact with Anoxic Water Microdroplets. *J. Am. Chem. Soc.*, 2023, 145, 39, 21538–21545.
8. Hongru Zhou, Min Wang*, Fanhao Kong, Zhiwei Chen, Zhaolin Dou, Feng Wang*. Facet-Dependent Electron Transfer Regulates Photocatalytic Valorization of Biopolyols, *J. Am. Chem. Soc.*, 2022, 144, 46, 21224–21231.
9. Zhuyan Gao, Junju Mu, Jian Zhang, Zhipeng Huang, Xiangsong Lin, Nengchao Luo*, Feng Wang*. Hydrogen bonding promotes alcohol C–C coupling, *J. Am. Chem. Soc.*, 2022, 144, 41, 18986-18994.

10. Zhe Zhang; Min Wang*; Hongru Zhou; Feng Wang*, Surface Sulfate Ion on CdS Catalyst Enhances Syngas Generation from Biopolyols. *J. Am. Chem. Soc.*, 2021, 143, 6533-6541.
11. Chaofeng Zhang; Zhipeng Huang; Jianmin Lu; Nengchao Luo; Feng Wang*, Generation and Confinement of Long-Lived N-Oxyl Radical and Its Photocatalysis. *J. Am. Chem. Soc.*, 2018, 140(6), 2032-2035.
12. Jinghua An‡; Yehong Wang‡; Jianmin Lu; Jian Zhang; Zhixin Zhang; Shutao Xu; Xiaoyan Liu; Tao Zhang; Martin Gocyla; Marc Heggen; Rafal E. Dunin-Borkowsk; Paolo Fornasiero; Feng Wang*, Acid-Promoter-Free Ethylene Methoxycarbonylation over Ru-Clusters/Ceria: The Catalysis of Interfacial Lewis Acid-Base Pair. *J. Am. Chem. Soc.*, 2018, 140(11), 4172-4181.
13. Yehong Wang; Feng Wang*; Qi Song; Qin Xin; Shutao Xu; Jie Xu*, Heterogeneous Ceria Catalyst with Water-Tolerant Lewis Acidic Sites for One-Pot Synthesis of 1,3-Diols via Prins Condensation and Hydrolysis Reactions. *J. Am. Chem. Soc.* 2013, 135(4), 1506-1515.
14. Hongru Zhou; Min Wang; Feng Wang, Oxygen-controlled photo-reforming of biopolyols to CO over Z-scheme CdS@g-C_3N_4. *Chem*, 2022, 8, 465-479.
15. Puning Ren, Zhuyan Gao, Tiziano Montini, Zhitong Zhao, Na Ta, Yike Huang, Nengchao Luo*, Emiliano Fonda, Paolo Fornasiero*, Feng Wang*, Stepwise photoassisted decomposition of carbohydrates to H_2, *Joule*, 2023, 7(2), 333-349.
16. Hongru Zhou; Min Wang; Feng Wang, Oxygen-vacancy-mediated catalytic methanation of lignocellulose at temperatures below 200°C. *Joule*, 2021, 5, 3031-3044.
17. Xiaoqin Si; Rui Lu; Zhitong Zhao; X. Yang; Feng Wang; Huifang Jiang; Xiaolin Luo; Aiqin Wang; Zhaochi Feng; Jie Xu; Fang Lu*, Catalytic production of low-carbon footprint sustainable natural gas. *Nature Communications*, 2022, 13, 258.
18. Min Wang; Meijiang Liu; Jianmin Lu; Feng Wang*, Photo splitting of bio-polyols and sugars to methanol and syngas. *Nature Communications*, 2020, 11(1), 1083.
19. Yehong Wang; Mi Peng; Jian Zhang; Zhixin Zhang; Jinghua An; Shuyan Du; Hongyu An; Fengtao Fan; Xi Liu; Peng Zhai; Ding Ma*; Feng Wang*, Selective production of phase-separable product from a mixture of biomass-derived aqueous oxygenates. *Nature Communnications*, 2018, 9(1), 5183.
20. Meijiang Liu, Hongji Li, Jian Zhang, Huifang Liu*, Feng Wang. Photocatalytic Production of Ethanolamines and Ethylenediamines from Bio-Polyols over a Cu/TiO_2 Catalyst. *Angew. Chem. Int. Ed.*, 2023, e202315795.
21. Qingchun Xu#, Puning Ren#, Yang Peng, Nengchao Luo*, Zhuyan Gao, Caixia Meng, Jian Zhang, Feng Wang*. Photocatalytic 2-iodoethanol coupling to produce 1,4-butanediol mediated by TiO_2 and a catalytic nickel complex. *Angew. Chem. Int. Ed.*, 2023, e202301668.
22. Lin Yuan; Yancheng Hu; Zhitong Zhao; Guangyi Li; Aiqin Wang; Yu Cong; Feng Wang; Tao Zhang; Ning Li, Production of Copolyester Monomers from Plant-Based Acrylate and Acetaldehyde. *Angew. Chem. Int. Ed.*, 2022, 61, e202113471:1-5.
23. Hu Yancheng‡; Zhao Zhitong‡; Liu Yanting; Li Guangyi; Wang Aiqin; Cong Yu; Zhang Tao; Wang Feng*; Li Ning*, Synthesis of 1,4-Cyclohexanedimethanol, 1,4-Cyclohexanedicarboxylic Acid and 1,2-Cyclohexanedicarboxylates from Formaldehyde, Crotonaldehyde and Acrylate/Fumarate. *Angew. Chem. Int. Ed.*, 2018, 57(23), 6901-6905.
24. Jinghua An; Yehong Wang; Zhixin Zhang; Zhitong Zhao; Jian Zhang; Feng Wang*, The Synthesis of Quinazolinones from Olefins, CO, and Amines over a Heterogeneous Ru-clusters/Ceria Catalyst. *Angew. Chem. Int. Ed.*, 2018, 57(38), 12308-12312.
25. Min Wang; Jianmin Lu; Jiping Ma; Zhe Zhang; Feng Wang*, Cuprous Oxide Catalyzed Oxidative C-C Bond Cleavage for C-N Bond Formation: Synthesis of Cyclic Imides from Ketones and Amines. *Angew. Chem. Int. Ed.*, 2015, 54(47), 14061-14065.
26. Feng Wang*; Wataru Ueda*; Jie Xu*, Detection and Measurement of Surface Electron Transfer on Reduced Molybdenum Oxides (MoO_x) and Catalytic Activities of Au/MoO_x. *Angew. Chem. Int. Ed.*, 2012, 51(16), 3883-3887.
27. Huakai Li, Zhiquan Yu*, Zhixin Zhang, Shushuang Li, Zhen Shi, Changjun Ni, Lei Cao, Hong Du, Qun-Xing Luo*, Feng Wang. In-Depth Understanding of Highly Active Silicotungstic Acid Catalysts for Ethanol Dehydration to Ethylene under Industrially Favorable Conditions. *Industrial & Engineering Chemistry Research*, 2024, 63, 17, 7624 − 7635.
28. Shiyang Liu, Yike Huang, Nengchao Luo*, Jian Zhang, Botao Qiao, Feng Wang*. Water-mediated photocatalytic

coproduction of diesel fuel additives and hydrogen from dimethyl ether. *ACS Catalysis*, 2024, 14, 6807-6815.

29. Yinpan Zhang, Qiang Guo*, Feng Wang*. Concepts of ethylene carbonylation with hydrogen gas and in situ generated hydrogen. *ChemCatChem*, 2024, e202301568.
30. Yuting Liu, Beili Nie, Ning Li, Huifang Liu*, Feng Wang,* Chlorine radical-mediated photocatalytic C(sp^3)−H bond oxidation of aryl ethers to ester. *Chinese Journal of Catalysis*, 2024, 58, 123-128.
31. Kun Zhang, Qiang Guo*, Yehong Wang, Pengfei Cao, Jian Zhang, Marc Heggen, Joachim Mayer, Rafal E. Dunin-Borkowski, Feng Wang*. Ethylene carbonylation to 3-Pentanone with in-situ hydrogen via water-gas-shift reaction on Rh/CeO_2. *ACS Catalysis*, 2023, 13, 3164−3169.
32. Jiaoyue Wang, Jingying, Zhitong Zhao, Longfei Bing, Fengming Xi*, Feng Wang*, Jiang Dong, Shiyun Wang, Gang Lin, Yan Yin, Qinqin Hu. Benefit analysis of multi-approach biomass energy utilization toward carbon neutrality, *The Innovation*, 2023, 4(3), 100423.
33. Yuting Liu, Huifang Liu*, Ning Li, Feng Wang*. Photoinduced organocatalytic lignin C–C bond cleavage in mixed binary solvents, *Applied Catalysis B: Environmental*, 2023, 339, 123137.
34. Huixiang Li, Yehong Wang∗, Chaofeng Zhang, Zhipeng Huang, Jianyu Han, Xuezhong Nie, Feng Wang*. Insight into the Strong Brönsted Acid Sites on Isolated WO_x-Modified Pt/Zirconium Phosphate for Glycerol Efficient Hydrodeoxygenation, *Applied Catalysis B: Environmental*, 2023, 325, 122342.
35. Cheng Cai, Chaofeng Zhang, Ning Li, Huifang Liu, Jun Xie*, Hongming Lou*, Xuejun Pan*, J. Y. Zhu*, Feng Wang*. Changing the role of lignin in enzymatic hydrolysis for a sustainable and efficient sugar platform, *Renewable and Sustainable Energy Reviews*, 2023, 183, 113445.
36. Yuda Zhang, Yehong Wang*, Xian Guan, Huixiang Li, Xuezhong Nie, Yafei Liang, Xiaolei Bao, Xiaoqiang Li*, Feng Wang*. Ce doping promote the selective conversion of ethanol to ethyl acetate via the dehydrogenation-condensation over CuCeZr catalyst. *Journal of Catalysis*, 2023, 426, 86-95.
37. Xuezhong Nie, Yehong Wang,* Junju Mu, Jianyu Han, Huixiang Li, Nengchao Luo, Zhipeng Huang, Qiang Guo, Ning Li, Jian Zhang, Ning Li, Feng Wang*. Tuning Redistribution of CuO_x Nanoparticles on TiO_2 Support. *ACS Appl. Mater. Interfaces*, 2023, 15, 48168−48178.
38. Puning Ren, Yue Zhou, Kaiyi Su, Lulu Sun, Nengchao Luo*, Feng Wang. Visible-Light-Driven Furfural Oxidation over CuOx/Nb_2O_5. *Chem Asian J.*, 2023, 18, e202300732,
39. Dongxia Jiao, Jinghua An, Huixiang Li, Zhipeng Huang, Yehong Wang*, Feng Wang*. Relay catalysis for conversion of secondary amine to formamide. *Chin. J. Catal*., 2023, 53, 161-170.
40. Jianyu Han, Zhixin Zhang, Zhuoran Xu, Lunhua He, Feiran Shen, Yehong Wang, Xuebin Liu, Meiling Guo, Zaihong Guan, Feng Wang*. Bottom-up synthesis of a pyramid-type (Pt/4nmCeO_2)/SiO_2 catalyst via a surface reduction strategy. *J. Mater. Chem. A*, 2023, 11, 10927.
41. Yafei Liang, Yehong Wang*, Zhixin Zhang, Jianyu Han, Jian Zhang, Yuda Zhang, Feng Wang*. Facile synthesis of defective porous Sn-modified CeO_2 catalyst via ball milling-pyrolysis method for efficient conversion of biomass-derived oxygenates. *ACS Sustainable Chem. Eng*., 2023, 11, 5858-5866.
42. Lulu Sun, Yike Huang, Shiyang Liu, Xiumei Liu, Nengchao Luo*, Feng Wang*. Photocatalytic reductive C−O bond scission promoted by low-work-function Cd single atoms and clusters, *Chem. Commun.*, 2023, 59, 2102-2105.
43. Zhipeng Huang, Yang Yang, Junju Mu, Genheng Li, Jianyu Han, Puning Ren, Jian Zhang, Nengchao Luo, Ke-Li Han, Feng Wang*. Controlling the reactions of free radicals with metal-radical interaction, *Chinese Journal of Catalysis*, 2023, 45, 120-131.
44. Cheng Cai, Ning Li, Huifang Liu, Jian Zhang, J.Y. Zhu*, Feng Wang*, Extracting high β-O-4 content lignin and by-producing substrate susceptible to enzymatic hydrolysis by a green flow through process. *Chem. Eng. J.*, 2023, 453, 139730:1-8.
45. Ying Ji, Huifang Liu, Feng Wang*, Xinwen Guo*, Conversion of biomass to γ-valerolactone by efficient transfer hydrogenation of ethyl levulinate over Al-SPAN nanosheets, *Catal. Today*, 2023, 408, 73-80.
46. Lin Yuan, Yancheng Hu, Xin Guo, Guangyi Li, Aiqin Wang, Yu Cong, Feng Wang*, Tao Zhang*, and Ning Li*. Biomass-based production of food preservatives, *Chem Catal.*, 2022, 2, 9, 2302-2311.
47. Zhe Zhang, Min Wang*, and Feng Wang*. Plasma-assisted construction of CdO quantum dots/CdS semi-coherent interface for the photocatalytic bio-CO evolution. *Chem Catal.*, 2022, 2(6), 1394-1406.
48. Nengchao Luo, Wei Nie, Junju Mu, Shiyang Liu, Mingrun Li, Jian Zhang, Zhuyan Gao, Fengtao Fan, Feng Wang*. Low-work function metals boost selective and fast scission of methanol C–H bonds. *ACS Catalysis*, 2022, 12, 11, 6375-6384.

49. Z. L. Wu; Q. H. Yang; Y. Liu; B. Y. Zhang; R. G. Li; W. Y. Wang; J. J. Wang; K. Domen; F. Wang; F. T. Fan, Can Li: A Career in Catalysis. *ACS Catalysis* 2022, 12, 3063-3082.
50. Qiang Guo; Yehong Wang; Jianyu Han; Jian Zhang; Feng Wang, Interfacial Tandem Catalysis for Ethylene Carbonylation and C–C Coupling to 3-Pentanone on Rh/Ceria. *ACS Catalysis* 2022, 12, 3286-3290.
51. Anon Bunrit; Teera Butburee; Meijiang Liu; Zhipeng Huang; Keerati Meeporn; Chaiyasit Phawa; Jian Zhang; Sanchai Kuboon; Huifang Liu; Kajornsak Faungnawakij; Feng Wang, Photo–Thermo-Dual Catalysis of Levulinic Acid and Levulinate Ester to γ-Valerolactone. *ACS Catalysis* 2022, 12, 1677-1685.
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