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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, Adviser: Prof. Jie Xu

Academic and Working Experience:

2022 – present Associate Editor, *ACS Catalysis*
2021 – present Vice Director, Dalian Institute of Chemical Physics, CAS
2018 – present Director, Division of Biomass Conversion & Bio-energy, Dalian Institute of Chemical Physics, CAS
2014 – 2018 Vice Director, Division of Biomass Conversion & Bio-energy, Dalian Institute of Chemical Physics, CAS
2011 – present Professor, Dalian Institute of Chemical Physics, CAS
2009 – Jun 2011 Associate Professor, Team leader of Bioenergy Chemical Group, Dalian Institute of Chemical Physics, CAS
2006 – 2009 Postdoc, Hokkaido University-Catalysis Research Center, Japan
2005 – 2006 Postdoc, University of California-Berkeley, USA
Mar – 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 oxides, zeolites, and metal nanoparticles
- Development of green and environmentally benign processes for the production of oxygenates from olefins, alcohols and carbon oxides
- Upgrading of biomass (lignin, cellulose, glycerol, and other molecules) into BTX, phenolic compounds, and polymer building blocks
- Photocatalysis for solar fuel production, CO₂ valorization, and biomass conversion
- Theoretical calculations and life cycle assessment

Awards:

- National Science Fund for Outstanding Young Scholars, NSFC, 2020
- ACS Sustainable Chemistry & Engineering Leadership Awards, ACS, 2020
- NSFC-RS Newton Advanced Fellowship, 2020
- 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. Photocatalytic Cleavage of Lignin C–C or C–O bond, Nature Sustainability Workshop Series, Shenzhen, May 13, 2021
2. Light-driven Catalytic Biomass Conversion, Syngenta International Online Conference, October 22, 2020
3. Light-Driven Catalytic Biomass Conversion to Liquid Fuels and Chemicals, The China-UK Catalysis Symposium, China, October 21, 2020
4. Light-driven Catalytic Biomass Conversion to Liquid Fuels and Chemicals, The 1st CAS-NST Joint Symposium - Focusing on Energy-Related Catalysis, September 1-3, 2020
5. Photocatalytic conversion of biomass and its derivatives, the 24th Annual Green Chemistry & Engineering Conference, Washington, USA, June 15-20, 2020
6. Catalytic scissoring of lignin C–C and C–O bonds, the 6th UK Catalysis Conference (UKCC), Loughborough, England, January 1-7, 2020
7. 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, August 24-31, 2019
8. 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
9. 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
10. Homogeneous Catalytic Oxidation of Lignin to Cleave C–O and C–C Bonds, Lignin Gordon Research Conference, Easton, USA, August 5-10, 2018
11. Heterogeneous catalysis for lignin conversion, ACS Publications Forum in the 31st CCS, Hangzhou, China, May 5-8, 2018
12. Catalytically oxidative cleavage of lignin C–C bond, The 255th ACS, New Orleans, USA, March 18-22, 2018.
13. Catalytic Oxidative Cleavage of C–C Bond Converts Lignin Models and Extracts to Aromatic chemicals, CatBior 2017, Lyon, France, December 11-15, 2017.
14. Acid-base Catalysis of Ceria and Doped Ceria in Organic Transformation, OKCAT2017, Osaka, Japan, October 27-28, 2017.



15. Photocatalytic Cleavage of Lignin into Aromatics, The 254th ACS National Meeting, Washington DC, USA, August 20-24, 2017.
16. Catalytic Conversion of Lignin Models and Extracts into Oxygenates, The 253th ACS National Meeting, San Francisco, USA, April 2-6, 2017.
17. 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
18. Defect Site Control of Ceria and the Efficient Catalysis in Organic Reactions, The Pacificchem2015, Hawaii, USA, December 14-20, 2015
19. Session organizer. Hydrogenolysis of lignin and lignosulfonate over nickel-based catalysts, The Pacificchem2015, Hawaii, USA, December 14-20, 2015
20. Ceria-catalyzed organic reactions, The 17th International Symposium on Relations between homogeneous and heterogeneous catalysis, Utrecht, the Netherlands, July 12-15, 2015
21. Defected oxide-supported gold nanoparticles: charge transfer and crystalline effect in catalysis, The Gold2015 Conference, Cardiff, UK, July 28-30, 2015
22. Catalytic Organic Transformation Reactions over Nanostructured Oxides, PIRE-ECCI Annual Meeting, Santa Barbara, USA, December 16-17, 2013
23. Catalytic Nature of Oxides as Water-Tolerant Lewis Acidic Catalysts in Hydrolysis Reaction, 23rd North American Catalysis Society Meeting, Louisville, USA, Oct 16, 2013
24. 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
25. Catalytic Nature of Oxides as Water-Tolerant Lewis Acidic Catalysts in Hydrolysis Reaction, The 6th Asia-Pacific Congress on Catalysis, Taipei, Taiwan, October 13, 2013
26. 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
27. Catalytic utilization of glycerol as a sustainable feedstock for chemicals and materials, The 15th International Congress on Catalysis, Munich, Germany, July 1-6, 2012
28. 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

Publications:

- [142] Hongru Zhou; Min Wang; Feng Wang, Oxygen-controlled photo-reforming of biopolyols to CO over Z-scheme CdS@g-C₃N₄. *Chem* **2022**, 8, 465-479.
- [141] Shichao Zhang; Wenbin Chen; Junju Mu; Jianyu Han; Chaofeng Zhang; Zhuyan Gao; Jian Zhang; Yehong Wang; Feng Wang, Single site Ni(II) anchored tetraethylene pentamine for enhancing CO₂ kinetic adsorption rate and long-term cyclic stability. *Chemical Engineering Journal* **2022**, 436, 135211.
- [140] C. F. Zhang; Z. Y. Gao; P. N. Ren; J. M. Lu; Z. P. Huang; K. Y. Su; S. C. Zhang; J. J. Mu; F. Wang, Oxygen-implanted MoS₂ nanosheets promoting quinoline synthesis from nitroarenes and aliphatic alcohols via an integrated oxidation transfer hydrogenation-cyclization mechanism. *Green Chemistry* **2022**, 24, 1704-1713.
- [139] 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. *Angewandte Chemie-International Edition* **2022**, 61, e202113471:1-5.
- [138] 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.
- [137] Yehong Wang; Jiaxu Liu; Zhitong Zhao; Qiang Guo; Qike Jiang; Ning He; Feng Wang, A carbon-negative route for sustainable production of aromatics from biomass-derived aqueous oxygenates. *Applied Catalysis B: Environmental* **2022**, 307, 121139.
- [136] Hongman Sun; Yu Zhang; Chunfen Wang; Mark A Isaacs; Ahmed I Osman; Yehong Wang; David Rooney; Youhe Wang; Zifeng Yan; Christopher MA Parlett, Integrated carbon capture and utilization: Synergistic catalysis between highly dispersed Ni clusters and ceria oxygen vacancies. *Chemical Engineering Journal* **2022**, 437, 135394.
- [135] Kaiyi Su; Huifang Liu; Chaofeng Zhang; Feng Wang, Photocatalytic conversion of waste plastics to low carbon number organic products. *Chinese Journal of Catalysis* **2022**, 43, 589-594.
- [134] X. Si; R. Lu; Z. Zhao; X. Yang; F. Wang; H. Jiang; X. Luo; A. Wang; Z. Feng; J. Xu; F. Lu, Catalytic production of low-carbon footprint sustainable natural gas. *Nature Communications* **2022**, 13, 258.
- [133] X. Shen; C. Zhang; B. Han; F. Wang, Catalytic self-transfer hydrogenolysis of lignin with endogenous hydrogen: road to the carbon-neutral future. *Chemical Society Reviews* **2022**, 51, 1608-1628.
- [132] S. Li; Z. Huang; H. Liu; M. Liu; C. Zhang; F. Wang, Polar hydrogen species mediated nitroarenes selective reduction to anilines over an [FeMo]_{Sx} catalyst. *Dalton Trans* **2022**, 51, 1553-1560.
- [131] Z. P. Huang; N. C. Luo; C. F. Zhang; F. Wang, Radical generation and fate control for photocatalytic biomass conversion. *Nature Reviews Chemistry* **2022**, 6, 197-214.
- [130] Q. Huang; J. J. Mu; Z. Zhan; F. Wang; S. B. Jin; B. E. Tan; C. F. Wu, A steric hindrance alleviation strategy to enhance the photo-switching efficiency of azobenzene functionalized metal-organic frameworks toward tailorable carbon dioxide capture. *Journal of Materials Chemistry A* **2022**, 10, 8303-8308.
- [129] Jianyu Han; Junju Mu; Feng Wang, Single-Metal Alloys. In *Supported Metal Single Atom Catalysis*, 2022; pp 145-168.
- [128] 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.
- [127] 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.
- [126] Hongru Zhou; Min Wang; Feng Wang, Oxygen-vacancy-mediated catalytic methanation of lignocellulose at temperatures below 200°C. *Joule* **2021**, 5, 3031-3044.
- [125] Z. Zhang; M. Wang; H. Zhou; F. Wang, Surface Sulfate Ion on CdS Catalyst Enhances Syngas Generation from Biopolyols. *Journal of the American Chemical Society* **2021**, 143, 6533-6541.
- [124] Y. H. Wang; Z. X. Zhang; L. J. Lei; W. Liu; S. Y. Du; X. X. Zhu; X. J. Li; F. Wang, Defect-Dependent Selective C-H/C-C Bond Cleavage of Propane in the Presence of CO₂ over FeNi/Ceria Catalysts. *Acs Sustainable Chemistry & Engineering* **2021**, 9, 17301-17309.
- [123] Kaiyi Su; Yehong Wang; Chaofeng Zhang; Zhuyan Gao; Jianyu Han; Feng Wang, Tuning the Pt species on Nb₂O₅ by support-induced modification in the photocatalytic transfer hydrogenation of phenylacetylene. *Applied Catalysis B: Environmental* **2021**, 298, 120554.
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- [121] Dongxia Jiao; Yehong Wang; Zhixin Zhang; Jian Zhang; Lijun Lei; Feng Wang, Catalysis of Positively Charged Ru Species Stabilized by Hydroxyapatite in Amine Formylation. *ChemCatChem* **2021**, 13, 4159-4163.
- [120] Ying Ji; Yi Zuo; Min Liu; Feng Wang; Chunshan Song; Xinwen Guo, From nano aggregates to nano plates: The roles of gelatin in the crystallization of titanium silicate-1. *Microporous and Mesoporous Materials* **2021**, 321, 111100.



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- [118] Tingting Hou; Zhuyan Gao; Jian Zhang; Nengchao Luo; Feng Wang, Simultaneously Enhanced Activity and Selectivity for C(sp³)-H Bond Oxidation Under Visible Light by Nitrogen Doping. *Transactions of Tianjin University* **2021**, 27, 331-337.
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- [107] Huifang Liu; Jianyu Han; Qitian Huang; Hongwei Shen; Lijun Lei; Zhipeng Huang; Zhixin Zhang; Zongbao K. Zhao; Feng Wang*, Catalytic Hydrodeoxygenation of Methyl Stearate and Microbial Lipids to Diesel-Range Alkanes over Pd/HPA-SiO₂ Catalysts. *Industrial & Engineering Chemistry Research* **2020**, 59(39), 17440-17450.
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- [102] 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.
- [101] Jinghua An; Yehong Wang; Zhixin Zhang; Jian Zhang; Martin Gocyla; Rafal E. Dunin-Borkowski; Feng Wang*, Linear-regioselective hydromethoxycarbonylation of styrene using Ru-clusters/CeO₂ catalyst. *Chinese Journal of Catalysis* **2020**, 41(6), 963-969.
- [100] Jian Zhang; Yehong Wang; Feng Wang*, Microreactor-assisted synthesis of a nickel-based infinite coordination polymer and its application in the selective adsorption of alcohols.



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