



## **Feng Wang**

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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

### **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, Catalysis Research Center, Hokkaido University, Japan

2005 – 2006 Postdoc, Department of Chemical Engineering, 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
- Catalytic upgrading of biomass (lignocellulose and derivatives) into phenolic compounds and polymer building blocks
- Photocatalysis for solar fuel production, CO<sub>2</sub> 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)
- ◆ Jiayi 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. Catalytic conversion of lignin into aromatic chemicals, 2020 2nd International Youth Conference on Lignin- and Collagen-based Materials (2nd IYCLCM-2020), Dalian, November 07, 2020
3. Light-driven Catalytic Biomass Conversion, Syngenta International Online Conference, October 22, 2020
4. Light-Driven Catalytic Biomass Conversion to Liquid Fuels and Chemicals, The China-UK Catalysis Symposium, China, October 21, 2020
5. 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
6. 2020 Catalysis Gordon Research Conference, 28 June, 2020
7. Photocatalytic conversion of biomass and its derivatives, the 24th Annual Green Chemistry & Engineering Conference, Washington, USA, June 15-20, 2020
8. Catalytic scissoring of lignin C–C and C–O bonds, the 6th UK Catalysis Conference (UKCC), Loughborough, England, January 1-7, 2020
9. 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
10. Photocatalytic Conversion of Biomass to Fuels and Chemicals, The 10th National Conference on Environmental Chemistry (10th NCEC), Beijing, August 15-19, 2019
11. 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
12. 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

13. Homogeneous Catalytic Oxidation of Lignin to Cleave C–O and C–C Bonds, Lignin Gordon Research Conference, Easton, USA, August 5-10, 2018
14. Heterogeneous catalysis for lignin conversion, ACS Publications Forum in the 31<sup>st</sup> CCS, Hangzhou, China, May 5-8, 2018
15. Catalytically oxidative cleavage of lignin C–C bond, The 255th ACS, New Orleans, USA, March 18-22, 2018.
16. Catalytic Oxidative Cleavage of C–C Bond Converts Lignin Models and Extracts to Aromatic chemicals, CatBior 2017, Lyon, France, December 11-15, 2017.
17. Acid-base Catalysis of Ceria and Doped Ceria in Organic Transformation, OKCAT2017, Osaka, Japan, October 27-28, 2017.
18. Photocatalytic Cleavage of Lignin into Aromatics, The 254th ACS National Meeting, Washington DC, USA, August 20-24, 2017.
19. Catalytic Conversion of Lignin Models and Extracts into Oxygenates, The 253th ACS National Meeting, San Francisco, USA, April 2-6, 2017.
20. 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
21. Defect Site Control of Ceria and the Efficient Catalysis in Organic Reactions, The Pacificchem2015, Hawaii, USA, December 14-20, 2015
22. Session organizer. Hydrogenolysis of lignin and liginosulfonate over nickel-based catalysts, The Pacificchem2015, Hawaii, USA, December 14-20, 2015
23. Ceria-catalyzed organic reactions, The 17<sup>th</sup> International Symposium on Relations between homogeneous and heterogeneous catalysis, Utrecht, the Netherlands, July 12-15, 2015
24. Defected oxide-supported gold nanoparticles: charge transfer and crystalline effect in catalysis, The Gold2015 Conference, Cardiff, UK, July 28-30, 2015
25. Catalytic Organic Transformation Reactions over Nanostructured Oxides, PIRE-ECCI Annual Meeting, Santa Barbara, USA, December 16-17, 2013
26. Catalytic Nature of Oxides as Water-Tolerant Lewis Acidic Catalysts in Hydrolysis Reaction, 23rd North American Catalysis Society Meeting, Louisville, USA, Oct 16, 2013
27. 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
28. Catalytic Nature of Oxides as Water-Tolerant Lewis Acidic Catalysts in Hydrolysis Reaction, The 6<sup>th</sup> Asia-Pacific Congress on Catalysis, Taipei, Taiwan, October 13, 2013
29. Electron Transfer at the Interface of Gold Nanoparticles and Partially Reduced MoO<sub>x</sub> and Catalytic Applications, The 6th International conference GOLD 2012, Tokyo, Japan, Sep. 7, 2012
30. Catalytic utilization of glycerol as a sustainable feedstock for chemicals and materials, The 15<sup>th</sup> International Congress on Catalysis, Munich, Germany, July 1-6, 2012
31. 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.

### **Publications:**

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, accepted in principle.
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<sup>‡</sup>; Zhitong Zhao<sup>‡</sup>; 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. 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<sub>2</sub>. *Joule*, 2023, 7(2), 333-349.
5. Hongru Zhou; Min Wang; Feng Wang, Oxygen-vacancy-mediated catalytic methanation of lignocellulose at temperatures below 200°C. *Joule*, 2021, 5, 3031-3044.
6. 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.
7. Qi Song; Feng Wang\*; Jiaying Cai; Yehong Wang; Junjie Zhang; Weiqiang Yu; Jie Xu\*, Lignin depolymerization (LDP) in alcohol over nickel-based catalysts via a fragmentation-hydrogenolysis process. *Energy & Environmental Science*, 2013, 6(3), 994-1007.
8. Hongru Zhou; Min Wang; Feng Wang, Oxygen-controlled photo-reforming of biopolyols to CO over Z-scheme CdS@g-C<sub>3</sub>N<sub>4</sub>. *Chem* 2022, 8, 465-479.
9. Jianyu Han<sup>#</sup>, Jingyi Yang<sup>#</sup>, Zhixin Zhang<sup>#</sup>, 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.
- 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.
  - Hongru Zhou, Min Wang\*, Fanhao Kong, Zhiwei Chen, Zhaolin Dou, and Feng Wang\*. Facet-Dependent Electron Transfer Regulates Photocatalytic Valorization of Biopolyols. *J. Am. Chem. Soc.*, 2022, 144, 46, 21224–21231.
  - 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.
  - Z. Zhang; M. Wang; H. Zhou; F. Wang, Surface Sulfate Ion on CdS Catalyst Enhances Syngas Generation from Biopolyols. *J. Am. Chem. Soc.*, 2021, 143, 6533–6541.
  - 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.
  - Jinghua An<sup>‡</sup>; Yehong Wang<sup>‡</sup>; Jianmin Lu; Jian Zhang; Zhixin Zhang; Shutao Xu; Xiaoyan Liu; Tao Zhang; Martin Gocyla; Marc Heggen; Rafal E. Dunin-Borkowski; 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.
  - 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.
  - Meijiang Liu, Hongji Li, Jian Zhang, Huifang Liu\*, Feng Wang. Photocatalytic Production of Ethanolamines and Ethylenediamines from Bio-Polyols over a Cu/TiO<sub>2</sub> Catalyst. *Angewandte Chemie International Edition*, 2023, e202315795.
  - Qingchun Xu<sup>#</sup>, Puning Ren<sup>#</sup>, Yang Peng, Nengchao Luo\*, Zhuyan Gao, Caixia Meng, Jian Zhang, Feng Wang\*. Photocatalytic 2-iodoethanol coupling to produce 1,4-butanediol mediated by TiO<sub>2</sub> and a catalytic nickel complex. *Angew. Chem. Int. Ed.*, 2023, e202301668.
  - 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.
  - Hu Yancheng<sup>‡</sup>; Zhao Zhitong<sup>‡</sup>; 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.
  - 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.
  - 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.
  - Feng Wang\*; Wataru Ueda\*; Jie Xu\*, Detection and Measurement of Surface Electron Transfer on Reduced Molybdenum Oxides (MoO<sub>x</sub>) and Catalytic Activities of Au/MoO<sub>x</sub>. *Angew. Chem. Int. Ed.*, 2012, 51(16), 3883–3887.
  - 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.
  - 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.
  - 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.
  - 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 Communications* 2018, 9(1), 5183.
  - 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.
  - 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.
30. Feng Wang\* and Haodong Duan\*. Opportunities and future directions for photocatalytic biomass conversion to value-added chemicals, *Chem Catal.*, 2022, 2, 4, 644-646.
  31. Haohong Duan\* and Feng Wang\*. Opportunities for electrocatalytic biomass valorization, *Chem Catal.*, 2022, 2, 4, 641-643.
  32. 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. *Chem. Rev.* 2023, 123, 8, 4510-4601.
  33. 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.
  34. 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.
  35. 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.
  36. Hongji Li; Anon Bunrit; Ning Li; Feng Wang\*. Heteroatom-participated lignin cleavage to functionalized aromatics. *Chemical Society Reviews* 2020, 49(12), 3748-3763.
  37. Min Wang\*, Hongru Zhou, and Feng Wang\*. Photocatalytic Production of Syngas from Biomass. *Accounts of Chemical Research* 2023, 56, 9, 1057-1069.
  38. Chaofeng Zhang; Feng Wang, Catalytic Lignin Depolymerization to Aromatic Chemicals. *Accounts of Chemical Research* 2020, 53(2), 470-484.
  39. Min Wang; Feng Wang\*, Catalytic Scissoring of Lignin into Aryl Monomers. *Advanced Materials* 2019, 31(50), 1901866.
  40. 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<sub>2</sub>. *ACS Catal.* 2023, 13, 3164-3169.
  41. 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 Catal.*, 2022, 12, 11, 6375-6384.
  42. 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.
  43. 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.
  44. 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  $\gamma$ -Valerolactone. *ACS Catalysis* 2022, 12, 1677-1685.
  45. X. B. Huang; K. Y. Zhang; B. X. Peng; G. Wang; M. Muhler; F. Wang, Ceria-Based Materials for Thermocatalytic and Photocatalytic Organic Synthesis. *ACS Catalysis* 2021, 11, 9618-9678.
  46. Kaiyi Su; Huifang Liu; Bin Zeng; Zhixin Zhang; Nengchao Luo; Zhipeng Huang; Zhuyan Gao; Feng Wang\*, Visible-Light-Driven Selective Oxidation of Toluene into Benzaldehyde over Nitrogen-Modified Nb<sub>2</sub>O<sub>5</sub> Nanomeshes. *ACS Catalysis* 2020, 10(2), 1324-1333.
  47. Nengchao Luo; Tingting Hou; Shiyang Liu; Bin Zeng; Jianmin Lu; Jian Zhang; Hongji Li; Feng Wang\*, Photocatalytic Coproduction of Deoxybenzoin and H<sub>2</sub> through Tandem Redox Reactions. *ACS Catalysis* 2020, 10(1), 762-769.
  48. Huifang Liu; Hongji Li; Nengchao Luo; Feng Wang\*, Visible-Light-Induced Oxidative Lignin C-C Bond Cleavage to Aldehydes Using Vanadium Catalysts. *ACS Catalysis* 2020, 10(1), 632-643.
  49. 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.
  50. Hongji Li; Anon Bunrit; Jianmin Lu; Zhuyan Gao; Nengchao Luo; Huifang Liu; Feng Wang\*, Photocatalytic Cleavage of Aryl Ether in Modified Lignin to Non-phenolic Aromatics. *ACS Catalysis* 2019, 9(9), 8843-8851.
  51. Min Wang; Xiaochen Zhang; Hongji Li; Jianmin Lu; Meijiang Liu; Feng Wang\*, Carbon Modification of Nickel Catalyst for Depolymerization of Oxidized Lignin to Aromatics. *ACS Catalysis* 2018, 8(2), 1614-1620.



52. Min Wang; Jiping Ma; Huifang Liu; Nengchao Luo; Zhitong Zhao; Feng Wang\*, Sustainable Productions of Organic Acids and Their Derivatives from Biomass via Selective Oxidative Cleavage of C-C Bond. *ACS Catalysis* 2018, 8(3), 2129-2165.
53. Min Wang; Meijiang Liu; Hongji Li; Zhitong Zhao; Xiaochen Zhang; Feng Wang\*, Dealkylation of Lignin to Phenol via Oxidation-Hydrogenation Strategy. *ACS Catalysis* 2018, 8(8), 6837-6843.
54. Huifang Liu; Hongji Li; Jianmin Lu; Shu Zeng; Min Wang; Nengchao Luo; Shutao Xu; Feng Wang\*, Photocatalytic Cleavage of C-C Bond in Lignin Models under Visible Light on Mesoporous Graphitic Carbon Nitride through pi-pi Stacking Interaction. *ACS Catalysis* 2018, 8(6), 4761-4771.
55. Zhixin Zhang; Yehong Wang; Jianmin Lu; Jian Zhang; Mingrun Li; Xuebin Liu; Feng Wang\*, Pr-Doped CeO<sub>2</sub> Catalyst in the Prins Condensation-Hydrolysis Reaction: Are All of the Defect Sites Catalytically Active? *ACS Catalysis* 2018, 8(4), 2635-2644.
56. Chaofeng Zhang; Hongji Li; Jianmin Lu; Xiaochen Zhang; Katherine E. MacArthur; Marc Heggen; Feng Wang\*, Promoting Lignin Depolymerization and Restraining the Condensation via an Oxidation-Hydrogenation Strategy. *ACS Catalysis* 2017, 7(5), 3419-3429.
57. Nengchao Luo; Min Wang; Hongji Li; Jian Zhang; Tingting Hou; Haijun Chen; Xiaochen Zhang; Jianmin Lu; Feng Wang\*, Visible-Light-Driven Self-Hydrogen Transfer Hydrogenolysis of Lignin Models and Extracts into Phenolic Products. *ACS Catalysis* 2017, 7(7), 4571-4580.
58. Tingting Hou; Nengchao Luo; Hongji Li; Marc Heggen; Jianmin Lu; Yehong Wang; Feng Wang\*, Yin and Yang Dual Characters of CuO<sub>x</sub> Clusters for C-C Bond Oxidation Driven by Visible Light. *ACS Catalysis* 2017, 7(6), 3850-3859.
59. Haijun Chen; Chao Liu; Min Wang; Chaofeng Zhang; Nengchao Luo; Yehong Wang; Hadi Abroshan; Gao Li; Feng Wang\*, Visible Light Gold Nanocluster Photocatalyst: Selective Aerobic Oxidation of Amines to Imines. *ACS Catalysis* 2017, 7(5), 3632-3638.
60. Zhixin Zhang; Yehong Wang; Jianmin Lu; Chaofeng Zhang; Min Wang; Mingrun Li; Xuebin Liu; Feng Wang\*, Conversion of Isobutene and Formaldehyde to Diol using Praseodymium-Doped CeO<sub>2</sub> Catalyst. *ACS Catalysis* 2016, 6(12), 8248-8254.
61. Min Wang; Jianmin Lu; Xiaochen Zhang; Lihua Li; Hongji Li; Nengchao Luo; Feng Wang\*, Two-Step, Catalytic C-C Bond Oxidative Cleavage Process Converts Lignin Models and Extracts to Aromatic Acids. *ACS Catalysis* 2016, 6(9), 6086-6090.
62. Nengchao Luo; Min Wang; Hongji Li; Jian Zhang; Huifang Liu; Feng Wang\*, Photocatalytic Oxidation-Hydrogenolysis of Lignin beta-O-4 Models via a Dual Light Wavelength Switching Strategy. *ACS Catalysis* 2016, 6(11), 7716-7721.
63. Jianmin Lu; Min Wang; Xiaochen Zhang; Andreas Heyden; Feng Wang\*, beta-O-4 Bond Cleavage Mechanism for Lignin Model Compounds over Pd Catalysts Identified by Combination of First-Principles Calculations and Experiments. *ACS Catalysis* 2016, 6(8), 5589-5598.
64. 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.
65. Huixiang Li, Yehong Wang\*, Chaofeng Zhang, Zhipeng Huang, Jianyu Han, Xuezhong Nie, Feng Wang\*. Insight into the Strong Brønsted Acid Sites on Isolated WO<sub>x</sub>-Modified Pt/Zirconium Phosphate for Glycerol Efficient Hydrodeoxygenation, *Applied Catalysis B: Environmental*, 2023, 325, 122342.
66. 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.
67. Kaiyi Su; Yehong Wang; Chaofeng Zhang; Zhuyan Gao; Jianyu Han; Feng Wang, Tuning the Pt species on Nb<sub>2</sub>O<sub>5</sub> by support-induced modification in the photocatalytic transfer hydrogenation of phenylacetylene. *Applied Catalysis B: Environmental* 2021, 298, 120554.
68. 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.
69. Yuda Zhang, Yehong Wang\*, Xian Guan, Huixiang Li, Xuezhong Nie, Yafei Liang, Xiaolei Bao, Xiaoqiang Li\*,



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