Curriculum Vitae: Yong Wang

Acting Director, Institute for Integrated Catalysis
Pacific Northwest National Laboratory
Regents Professor
Voiland School of Chemical Engineering and Bioengineering
Washington State University

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Education

1992-1993	Ph.D. in Chemical Engineering, Washington State University
1990-1992	M.S. in Chemical Engineering, Washington State University
1980-1984	B.S. in Chemical Engineering, Chengdu University of Science and Technology (now Sichuan University)

Professional Appointments

2025-present	Aciting Director of Institute for Integrated Catalysis (IIC), Laboratory Fellow, Pacific Northwest National Laboratory
2022–present	Regents Professor, Voiland School of Chemical Engineering and Bioengineering, Washington State University
2009–present	Voiland Distinguished Professor, Voiland School of Chemical Engineering and Bioengineering, Washington State University
2008–2024	Laboratory Fellow, Associated Director of Institute for Integrated Catalysis (IIC), Pacific Northwest National Laboratory
2005-2007	Laboratory Fellow, Technical Team Leader of Catalysis and Reaction Engineering, Pacific Northwest National Laboratory
2000-2004	Chief Scientist, Technical Team Leader of Catalysis and Reaction Engineering, Pacific Northwest National Laboratory
1997-1999	Senior Research Engineer, Pacific Northwest National Laboratory
1996-1997	Research Engineer, Pacific Northwest National Laboratory
1994–1995	Postdoctoral Fellow, Pacific Northwest National Laboratory

Selected Honors and Awards

external

- Member, **National Academy of Engineering** (NAE) (2025)
- The Robert Burwell Lectureship in Catalysis Award by **North American Catalysis Society** (NACS) (2025)
- Highly Cited Researchers 2023, 2024 (Clarivate Analytics) (https://news.wsu.edu/news/2023/11/15/seven-wsu-faculty-recognized-as-highly-cited-researchers/)

- 2021 **American Chemical Society** (ACS) E.V. Murphree Award in Industrial and Engineering Chemistry (2020)
- 2019 **American Institute of Chemical Engineers** (AIChE) Catalysis and Reaction Engineering Practice Award (2019)
- 2018 American Chemical Society (ACS) I&EC Division Fellow Award (2017)
- Fellow, **National Academy of Inventors** (NAI) (2015)
- Fellow, American Institute of Chemical Engineers (AIChE) (2013)
- Fellow, Royal Society of Chemistry (RSC) (2013)
- Fellow, American Chemical Society (ACS) (2010)
- Fellow, American Association for the Advancement of Science (AAAS) (2008)
- Member, Washington State Academy of Sciences (WSAS) (2015)
- College of Engineering Distinguished Lecturer, Nanyang Technological University, 2024.
- Distinguished Lecturer, Department of Chemical and Biological Engineering, National University of Singapore, 2024.
- UOP-Honeywell Invitational Lecturer, 2023.
- Recognition of Innovation on the commercial ADM "Propylene Glycol from Renewable Sources" process presented by DOE EERE Assistant Secretary David Danielson (2015)
- R&D 100 Award, Fischer-Tropsch fuels using Velocys microchannel technology (2008)
- R&D 100 Award, full-scale vaporizer for automotive fuel cell fuel processor (1999)
- R&D 100 Award, production of chemicals from biologically derived succinic acid (1997)
- Presidential Green Chemistry Award, use of biomass to produce useful chemicals (1999)
- Distinguished Alumni Achievement Award, Dept of Chem.Eng., Washington State University (2008)
- 2006 Asian American Engineer of the Year Award, Seattle, WA, Feb. 24-25, 2006.

internal

- 2025 Washington State University Distinguished Faculty Address Award (Each year, a faculty member whose excellence in research, scholarship, and teaching places them at the forefront of their discipline, is invited to deliver a Distinguished Faculty Address) (2025)
- Regents Professor, Washington State University (can be held by a maximum of 30 faculty members at any given time at the entire university) (2022)
- 2020 Safety Award, Voiland College of Engineering and Architecture, Washington State University (2020)
- 2006 PNNL Inventor of the Year Award, Pacific Northwest National Laboratory (2006)
- 2004 PNNL Inventor of the Year Award, Pacific Northwest National Laboratory (2004)
- 2004 Distinguished Battelle Inventor Award, April 2004
- First recipient of PNNL Laboratory Director's Award for Exceptional Scientific Achievement,

Oct 2005

Selected Society Participation

2023-present	Co-Editor-in-Chief, *Applied Catalysis B: Environment and Energy*
2022-present	Founding Executive Editor of the Catalysis Section, *Chemical Engineering Journal*
2022	Editor, *Applied Catalysis B: Environment and Energy*
2010-2021	Editorial board (founding member), *ACS Catalysis*
2020-present	Editorial board (founding member), *JACS Au*
2006-present	Editorial board, *Catalysis Today*
2012-present	Editorial board, *Journal of Energy Chemistry*
2014-present	Editorial board, *Chinese Journal of Catalysis*
2021	Fundraising committee, NAM27 – The 27th North American Catalysis Society Meeting
2020	Fundraising committee, 17th International Congress in Catalysis (2020)
2015-2018	Director to the Catalysis and Reaction Engineering Division of AIChE (American Institute of Chemical Engineers)
2012	Chair, Energy & Fuel Division of the American Chemical Society
2011	Chair elect, Petroleum Division of the American Chemical Society
2008	Chair, Program Committee of the American Chemical Society Petroleum division
2017-2019	ACS National Award Committee (member from 2017-2018, chair of an undisclosed ACS award in 2019)
2006-2014	Secretary of Pacific Coast Catalysis Society
2012-2018	Scientific Advisory Board, Center for Environmentally Beneficial Catalysis, University of Kansas
2013-2015	Scientific Advisory Board, Center for Atomic Level Catalyst Design, LSU EFRC (Energy Frontier Research Center)
2009 June	Secretary of the organization committee of the 21st North American Catalysis Society Meeting, San Francisco, CA
2006-present	Scientific Committee of International Workshop on Process Intensification (IWPI)

Recent Media

1. https://news.wsu.edu/news/2025/02/13/wang-elected-to-national-academy-of-engineering/
2. https://news.wsu.edu/news/2025/03/20/wang-selected-for-burwell-lectureship-in-catalysis/
3. https://news.wsu.edu/announcements/showcase-distinguished-faculty-address-dr-yong-wang/

4. KGMI radio interview on biofuels, Aug. 21, 2020 (https://soundcloud.com/790-kgmi/8-21-2020-internet-biofuels-post-office)
2. Interview by Scientific American on catalytic converter theft (https://www.scientificamerican.com/video/did-your-catalytic-converter-get-stolen-the-pandemic-and-rhodium-could-share-some-blame/)
3. (129.8 million readers) Catalyst can control methane emissions in natural gas engines (2023, https://news.wsu.edu/press-release/2023/07/20/catalyst-can-control-methane-emissions-in-natural-gas-engines)
4. (44.2 million readers) Discovery made about Fischer Tropsch process could help improve fuel production (2023, https://news.wsu.edu/press-release/2023/10/05/discovery-made-about-fischer-tropsch-process-could-help-improve-fuel-production/)
5. (34.4 million readers) Nano-sized islands open possibilities for application of single-atom catalysts (2022, https://news.wsu.edu/press-release/2022/10/26/nano-sized-islands-open-possibilities-for-application-of-single-atom-catalysts/, 70 media outlets including Chemical & Engineering News - October 28, 2022)
6. (25.5 million readers) Catalyst advance improves natural gas cleaning technology (2021, https://news.wsu.edu/press-release/2021/10/18/catalyst-advance-improves-natural-gas-cleaning-technology/)
7. (14 million readers) A key to cheaper renewable fuels: keeping iron from rusting (2020, https://news.wsu.edu/press-release/2020/08/19/key-cheaper-renewable-fuels-keeping-iron-rusting/)

Institutional Responsibilities/Services

- 2024, search committee of PNNL Associate Director (Physical and Computational Sciences Directorate)
- 2023-present, Regents Professor Nomination Review Committee, WSU
- 2023-present, Presidential Faculty Award Committee, WSU
- 2023-present, Washington State Academy of Sciences Membership committee
- 2023, Research Committee of Voiland School, WSU
- 2023, Voiland College of Engineering Anjan Bose Award Committee, WSU
- 2022, Voiland College of Engineering Safety Award Committee, WSU
- 2017, Voiland College of Engineering faculty promotion committee, WSU
- 2017 – 2019: advisory board of PNNL Catalysis Transformation Initiative
- 2008 – present: associate director, Institute for Integrated Catalysis of PNNL
- 2009 – 2018: PNNL Scientific and Engineering Award Committee
- 2014 – 2018: thrust lead, PNNL Materials Synthesis and Simulation Across Scales Initiative
- 2010 – 2013: advisory board of PNNL Transforming Materials Initiative
- 2012 – 2014: chair, faculty search committee (WSU)

- 2015 – 2017: faculty promotion committee of engineering college (WSU)
- 2005 – 2007: team lead of catalysis and reaction engineering of PNNL

Funding, consulting, and collaboration

Government support - U.S. Department of Energy (Basic Energy Sciences (SC-BES), Energy Efficiency and Renewable Energy (EERE) and Fossil Energy and Carbon Management (FECM)), U.S. Department of Transportation, U.S. Department of Defense, NSF.

Industrial support - Chevron, ConocoPhillips, BP, Archer-Daniels-Midland (ADM), GEVO, Ascend Performance Materials, BASF, Chambroad

Consulting -Nexceris, Asemblon, Ammbonia, Nike, Al Gore, and Velocys

Collaboration – UOP, Dow Chemical, ADM, BASF, Cummins, Stellantis, John Deere, GM, Johnson Matthey, BMW.

Significant Technical Accomplishments – Publications/Patents; Invited Presentations; Books

Dr. Wang's research focuses on the development of fundamental principles required for the design of advanced catalytic materials and, at the same time, combining these new materials with novel reactor concepts leading to sustainable technologies for solving current and future energy, resource, and environmental challenges. The importance of his research to industry is evident in his central contributions to the creation of Velocys (traded in London Stock Exchange (VLS)), a leading company on the commercialization of microreactor technology, and his invention for the commercial Archer Daniels Midland (ADM) process that converts renewable, plant-based glycerol into propylene glycol at 100,000 metric tons per year, reinventing the current industrial processes by using renewable biomass instead of fossil feedstocks. He has 444 peer-reviewed publications including *Science* (3), *Nature* (2), Nature Group journals, *Science Advances*, *JACS*, *Angewandte* with 47,854 citations and H-index=103 as of March 31, 2025, holds 111 issued US patents (>90% of his issued patents are licensed to industries), has given >220 invited lectures since 2001, and co-edited 6 special journal issues and 2 books in the novel reaction engineering and catalysis for energy related research. His publications and patents focus on improving energy and atom efficiency in the catalytic conversion of biomass, fossil feedstocks, CO_2, and waste plastics. Key contributions include: 1) the discoveries of "microchannel technologies", integrating catalysis science and reaction engineering for process intensification; 2) advancing the understanding of acid/base and redox properties of transition metal oxides for oxygen elimination and C-C bond formation in biomass conversion to fuels and chemicals; 3) elucidating active sites and reaction pathways on bimetallic catalysts and earth abundant element-based catalysts for efficient biomass conversion and hydrogen production; 4) developing principles for synthesizing and activating highly stable single-atom catalysts for energy conversion and emission reduction.

Peer-Reviewed Publications (citations: 47,854, H-index= 103 as of March 31, 2025)

444. K.Khivantsev, H.Pham, M.H.Engelhard, H.A.Aleksandrov, L.Kovarik, M.Bowden, S.Li, J.Tian, I.Z.Koleva, I.Song, W.Hu, X.Wei, Y.Sun, P.Tran, T.R.Graham, D.Jiang, D.P.Dean, D.J.Breckner, J.T.Miller, G.N.Vayssilov, J.Szanyi, A.Datye, Y.Wang, "Transforming ceria into 2D clusters enhances catalytic activity", ***Nature***, 2025, DOI:10.1038/s41586-025-08684-x.

443. S.V. Lambeets, N.Cardwell, I.Onyango, M.G. Wirth, E.Vo, Y.Wang, P.Gaspard, C.F. Ivory, D.E. Perea, T.Visart de Bocarmé, J.McEwen, "Elucidating the Role of Electric Fields in Fe

Oxidation via an Environmental Atom Probe", ***Angewandte Chemie.Int.Ed***, 2025, doi.org/10.1002/anie.202423434.

442. Y.Bai, Y.Zhang, J.Hu, J.Li, S.Wan, J.Lin, Y.Wang, S.Wang, "Hydrogen-Assisted Dissociation of N2: Prevalence and Consequences for Ammonia Synthesis on Supported Ru Catalysts", ***ACS Catal***., 2025, 15, 1455-1466.

441. Y.Lu, F.Lin, Z. Zhang, C.Thompson, Y.Zhu, N.Doudin, L.Kovarik, C.García-Vargas, D.Jiang, J.Fulton, Y. Wu, F.Gao, Z.Dohnalek, A. Karim, H.Wang, Y.Wang, "Enhancing activity and stability of Pd-on-TiO2 single-atom catalyst for low-temperature CO oxidation through in situ local environment tailoring", ***J.Am.Chem.Soc***., 2024, DOI: 10.1021/jacs.4c07861.

440. I.Song, L.Kovarik, M.H. Engelhard, J.Szanyi, Y.Wang*, K. Khivantsev*, "Developing Robust Ceria-Supported Catalysts for Catalytic NO Reduction and CO/Hydrocarbon Oxidation", ***ACS Catal.***, 2024, 14, 24, 18247–18255.

439. A.J.R.Hensley, N.Chaudhary, N.Cardwell, I.Onyango, Y.Wang, D.Wu, J.S.McEwen, "Capturing surface coverage effects in heterogeneous catalysis", ***J.Phy.Chem.C,*** 2024, DOI: 10.1021/acs.jpcc.4c05086

438. Y.Yang, P.Han, Y.Zhang, J.Lin, S.Wan, Y.Wang, H.Liu, S.Wang, "Site requirements of supported W2C nanocatalysts for efficient hydrodeoxygenation of m-cresol to aromatics", ***Chinese Journal of Catalysis***, 2024, 67, 91-101.

437. F.Lin, M.Li, S.Purdy, J.Zhang, Y.Wang, S.Kim, M.Engelhard, Z.Li, A.Sutton, Y.Wang, J.Hu, H.Wang, "Restructuring of the Lewis Acid Sites in Y-Modified Dealuminated Beta-Zeolite by Hydrothermal Treatment", ***ACS Catal***., 2024, DOI: 10.1021/acscatal.4c04135.

436. S.Xie, C.Wang, W.Hu, J.Hu, Y.Wang, Z.Dong, N.N.Instan, J.Pfaendtner, H.Lin, "Chemical recycling of post consumer polyester wastes using a tertiary amine organocatalyst", ***Cell Reports Physical Science***, 2024, doi: 10.1016/j.xcrp.2024.102145.

435. J.Tian, R.Kong, B.Deng, Y.Cheng, K.Hu, Z.Zhong, T.Sun, M.Tan, L.Chen, J.Zhao, Y.Wang, X.Li, Y.Zhu "Non-classical Deactivation Mechanism in a Supported Intermetallic Catalyst for Propane Dehydrogenation", ***Angewandte Chemie.Int.Ed***, 2024, DOI: 10.1002/anie.202409556.

434. D.Yun, N.R.Jaegers, J.Hu, J.E.Herrera, Y.Wang "Surface anchoring requirements for vanadia clusters on titanium oxide surfaces and their impact on activity for oxidative dehydrogenation of ethanol", ***J.Catal***., 2024, 437, 115642.

433. S.Qian, P.Zhang, X.Xiao, S.Wan, Z.Zhang, S.Wang, Y.Wang, J.Lin, "Boosting gas-phase radical reactions for efficient oxidative dehydrogenation of propane over boron-based macropore catalyst", ***Chemical Engineering Journal***, 2024, 495, 153625.

432. S.Liu, D. Wu, Y.Zhao, Y. Liang, L. Zhang, J. Sun, J. Lin, S. Wang, Y.Yao, S. Wan, N.Coville, Y.Wang, H. Xiong, "Recent Advances and Perspectives in Catalyst Design for Converting Syngas to Higher Alcohols", ***Energy & Fuels***, 2024, 38, 14769-14796.

431. H.Li, J.Pang, W.Hu, V.Caballero, J.Sun, M.Tan, J.Z.Hu, Y.Ni, Y.Wang, "Confined Dual Lewis Acid Centers for Selective Cascade C-C Coupling and Deoxygenation", ***Chemical Science***, 2024,15, 8031-8037.

430. I.Onyango, G.Collinge, Y.Wang, J.S.Mcewen, "DistributionTendencies of Noble Metals on Fe(100) Using Lattice Gas Cluster Expansions", ***J.Phy.Chem.C***, 2024, https://doi.org/10.1021/acs.jpcc.4c01402

429. B.Qian, X.Yan, S.Yang, J.Zhang, C.Liu, Z. Liu, Z. Fei, B. Dai, J.Liu, Y. Wang, L. Zhang, "Volcano-Shape Correlation Dictated Superior Activity for Ultralow-Al Doped Iron Oxide Towards High-Temperature Water-Gas Shift Reaction", ***ACS Catal.***, 2024, 14, 10, 7402–7415.

428. L.Zhang, S.Wan, C.Du, Q.Wan, H.Pham, J.Zhao, X.Ding, D.Wei, W.Zhao, J.Li, Y.Zheng, H.Xie, H.Zhang, M.Chen, K.H. L. Zhang, S.Wang, J.Lin, J.Huang, S.Lin, Y.Wang, A.K. Datye, Y.Wang, H.Xiong, "Generating active metal/oxide reverse interfaces through coordinated migration of single atoms", ***Nature Comm.***, 2024, 15, 1234.

427. Y. Wang, R. Zhao, K. G. Rappé, Y. Wang, F. Che, F. Gao, "Mechanisms and site requirements for NO and NH3 oxidation on Cu/SSZ-13", ***Applied Catalysis B,*** 346 (2024) 123726.

426. T.Andana, K.G. Rappe, F.Gao and Y.Wang, "Mitigated ammonium nitrate inhibition in SCR over Cu-SSZ-13 + Ce/Mn-oxide composite catalysts: insights from temperature-programmed desorption analysis", ***Catal. Sci.Tech.***, 2024, DOI: 10.1039/D4CY00062E.

425. Z.Duan, R.Lv, Z.Huang, J.Li, X.Xiao, Z.Zhang, S.Wan, S.Wang, H.Xiong, X.Yi, Y.Wang, J.Lin, "Enhancing Efficiency and High-Value Chemicals Generation through Coupling Photocatalytic CO2 Reduction with Propane Oxidation", ***ChemSusChem***, 2024, DOI: 10.1002/cssc.202301881.

424. J.Tian, K. Khivantsev, Y.Lu, S.Xue, Z.Zhang, J.Szanyi, Y.Wang, "NO Reduction with CO on Low-loaded Platinum-group Metals (Rh, Ru, Pd, Pt, and Ir) Atomically Dispersed on Ceria", ***ChemCatChem***, 2024, https://doi.org/10.1002/cctc.202301227.

423. R.Zhang, Y.Wang*, P.Gaspard, N.Kruse*, ''The oscillating Fischer-Tropsch reaction", ***Science***, 2023, 382, 99-103.

422. I.Song, I.Z. Koleva, H.A. Aleksandrov, L.Chen, J.Heoc, D.Li, Y.Wang, J. Szanyi, K.Khivantsev, "Ultra small Pd clusters in FER zeolite alleviate CO poisoning for effective low temperature carbon monoxide oxidation", ***J.Am.Chem.Soc***, 2023, 145, 50, 27493–27499.

421. H.Zhang, J.Li, D.Wang, Y.Wang*, H.Xiong*, "A review on the active sites for direct oxidation of methane to methanol by copper-zeolites: coordination structure, formation, and activity", ***Coordination Chemistry Reviews***, 2023, DOI: 10.1016/j.ccr.2023.215637.

420. K.Khivantsev, M.A. Derewinski , L.Kovarik, M.Bowden, X.S.Li, N.R. Jaegers, D.Boglaienko, X.Hernandez, C.Pearce, Y.Wang, J.Szanyi, "Increasing Al-pair abundance in SSZ-13 zeolite via zeolite synthesis in the presence of alkaline earth metal hydroxide produces hydrothermally stable Co-, Cu- and Pd-SSZ-13 materials", ***Catalysts***, 2024, DOI: 10.3390/catal14010056.

419. I.Song, Y.Wang, J.Szanyi, K.Khivantsev, "Co-existence of atomically dispersed Ru and Ce3+ sites is responsible for excellent low temperature N2O reduction activity of Ru/CeO2", ***Appled Catalysis B***, 2023, DOI: 10.1016/j.apcatb.2023.123487.

418. Y.Qiu, D.Ray, L.Yan, X.Li, M.Song, M.Engelhard, J.Sun, M.Lee, X.Zhang, M.Nguyen, V.Glezakou, Y.Wang, R.Rousseau, Y.Shao, "A proton relay for the rate enhancement of electrochemical hydrogen reactions at heterogeneous interfaces", ***J.Am.Chem.Soc.***, 2023, DOI: 10.1021/jacs.3c06398.

417. J.Zhang, W.Hu, Y.Li, A.Savoy, J.Sun, T.Chi, Y.Wang*, "Advances in the catalytic production of acrylonitrileChem Catalysis", ***Chem.Catalysis***, 2023, 10.1016/j.checat.2023.100825.

416. G.Zhang, Y.Li, Y.Chen, X.Hao, X.Zhang*, S.Wang, J.Lin, Y.Wang*, S.Wan*, "High-Stability ZnAl2O4 Spinel-Supported Nickel Catalyst for High-Temperature Syngas Methanation", ***Ind.Eng.Chem.Res***., 2023, 62, 41, 16668-16675.

415. J.Tian, R.Kong, Z.Wang, L. Fang, T. He, D.Jiang, H.Peng, T. Sun, Y.Zhu, Y. Wang, "Enhancing Methane Combustion Activity by Modulating the Local Environment of Pd Single-Atoms in Pd1/CeO2 Catalysts", ***ACS Catal***., 2023, DOI: 10.1021/acscatal.3c02167.

414. N. Cardwell, A. Hensley, Y. Wang, J.McEwen, "Capturing the Coverage Dependence of Aromatics' Adsorption Through Mean-Field Models", ***J.Phy.Chem.A***, 2023, https://doi.org/10.1021/acs.jpca.3c05456.

413. H.Zhang, P.Han, D.Wu, D.Du, J.Zhao, H.L. Zhang, J.Lin, S.Wan, J.Huan, S.Wang, H.Xiong, Y.Wang, "Confined Cu-OH Single Sites in SSZ-13 for the Direct Oxidation of Methane to Methanol", ***Nature Comm.***, 2023, DOI : 10.1038/s41467-023-43508-4.

412. L.Zhang, J.Wang, B.Zhang, Z.Lin, L.Liu, X.Zhang, S.Wang, J.Lin, H.Xiong, C.Wu, Y.Wang, S.Wan, "ZnFexAl2-xO4 spinel supported PdZnβ bifunctional catalyst for methanol steam reforming", ***Chemical Engineering Journal***, 2023, 475, 146334.

411. R.Zhang, J.Li, A.L.Tonkovich, C.Lockhart, X.Wang, W.Hu H.Karroum, M.Seabaugh, N.Kruse, Y.Wang, "Highly productive and robust core@shell HeatPath SiC-Al2O3@Co/Re/Al2O3 catalyst for Fischer–Tropsch synthesis", ***Applied Catalysis A: General***, 2023, DOI: 10.1016/j.apcata.2023.119419.

410. J.Tian, J.Guan, M.Xu, S.Qian, K.Ma, S.Wan. Z.Zhang, H.Xiong, S.Wang, Y.Wang, J.Lin, "Repairing Vacancy Defects for Stabilization of High Surface Area Hexagonal Boron Nitride under Harsh Conditions", ***Chemical Engineering Journal***, 2023, DOI:10.1016/j.cej.2023.146015.

409. J.Zhang, W.Hu, B.Qian, H. Li, B.Sudduth, M.Engelhard, L.Zhang, J.Hu, J.Sun, C.Zhang, H.He, Y.Wang, "Tuning Hydrogenation Chemistry of Pd-based Heterogeneous Catalysts by Introducing Homogeneous-like Ligands", ***Nature Comm.***, 2023, doi: 10.1038/s41467-023-39478-2.

408. D.Jiang, G.Wan, J.H.Stenlid, C.E. García-Vargas, J.Zhang, C.Sun, J.Li, F. Abild-Pedersen*, C.J. Tassone*, Yong Wang*, "Dynamic and reversible transformations of sub-nanometer-sized palladium on ceria for efficient methane removal", ***Nature Catalysis***, 2023, DOI: 10.1038/s41467-023-39478-2.

407. N.Chaudhary, I.Onyango, Y.Wang, J.S.McEwen, "Determining Catalytically Relevant Surfaces through Coverage-2 Dependent Lattice Gas Models: Carbon Adsorption on Fe(100)", ***J.Phy.Chem.C***, 2023, DOI: 10.1021/acs.jpcc.3c01761 (cover).

406. J.Tian, G.Collinge, S.Yuk, J. Lin, V.Glezakou, M.Lee*, Y.Wang*, R.Rousseau*, "Dynamically Formed Active Sites on Liquid Boron Oxide for Selective Oxidative Dehydrogenation of Propane", ***ACS Catal.***, 2023, DOI: 10.1021/acscatal.3c01759 (cover).

405. P.Han, R.Yan, Ran, Y. Wei, L.Li, J.Luo, Y. Pan, B. Wang, J. Lin, S. Wan, H.Xiong, Y. Wang*, S. Wang*, "Mechanistic Insights into Radical-Induced Selective Oxidation of Methane over Nonmetallic Boron Nitride Catalysts", ***J.Am.Chem.Soc***., 2023, DOI: 10.1021/jacs.2c13648.

404. Z.Zhang, J.Tian, Y.Lu, S.Yang, D.Jiang, W.Huang, Y.Li, J.Hong, A.Hoffman, S.Bare, M.Engelhard, A.Datye, Y.Wang, "Memory-dictated Dynamics of Single-atom Pt on CeO2 for CO Oxidation", ***Nature Comm.*** , 2023, DOI: 10.1038/s41467-023-37776-3.

403. Y.Wu, W.Zhao, S.H.Ahn, Y.Wang, E.D. Walter, Y.Chen, M.A. Derewinski, N.M. Washton, K.G. Rappé, Y.Wang, D.Mei, S.B.Hong, F.Gao, "Interplay between copper redox and transfer and support acidity and topology in low temperature NH3-SCR", ***Nature Comm.*** , 2023, https://doi.org/10.1038/s41467-023-38309-8.

402. V.L.Dagle, G.Collingea, M.Rahmana, A.Winkelmana, W.Hu, J.Hu, L.Kovarik, M.Engelhard, J.Jocz, Y.Wang, M.Lee, R.Rousseau, R.Dagle, "Single-step conversion of ethanol into n-butene-rich olefins over metal catalysts supported on ZrO2-SiO2 mixed oxides", ***Appl.Catal.B: Environmental***, 2023, 331, 122707. https://doi.org/10.1016/j.apcatb.2023.122707.

401. Y.Wu, Y.Wang, E.D. Walter, K.G. Rappé, Y.Wang, F.Gao, "Insights into palladium poisoning of Cu/SSZ-13 selective catalytic reduction catalysts", ***Appl.Catal.B: Environmental***, 2023, 331, 122673, DOI: 10.1016/j.apcatb.2023.122673.

400. D.Yao, Y.Wang, Y.Li, A.Li, Z.Zhen, J.Lv, F.Sun, R.Yang, J.Luo, Z.Jiang, Y. Wang*, X.Ma*, "Scalable synthesis of Cu clusters for remarkable selectivity control of intermediates in consecutive hydrogenation", ***Nature Comm.*** , 2023, DOI: 10.1038/s41467-023-36640-8.

399. K.Khivantsev, N.R. Jaegers, H.A. Aleksandrov, I.Song, X.I.Pereira-Hernandez, M.H.Engelhard, J.Tian, L.Chen, D.Meira, L.Kovarik, G.N. Vayssilov, Y.Wang*, J.Szanyi*, "Single Ru(II) ions on ceria as a highly active catalyst for abatement of NO", ***J.Am.Chem.Soc***., 2023, DOI: doi.org/10.1021/jacs.2c09873.

398. F.Lin, C.E. García-Vargas, Y.Wang, "A bifunctional Pt/CeO2-Cu1/CeO2 catalyst system for isooctane oxidation under fully simulated engine exhaust condition: eliminating the inhibition by CO", ***Catalysts***, 2023, 13(3), 508.

397. A.D.Winkelman, V. Dagle, T.L. Lemmon, L. Kovarik, Y. Wang, and R.A. Dagle "Effect of Alkali Metal Addition on Catalytic Performance of Ag/ZrO2/SBA-16 Catalyst for Single-Step Conversion of Ethanol to Butadiene." ***Catalysis Science & Technology***, 2023, DOI:10.1039/d2cy01722a.

396. N.C.Nelson, T. Andana, K.G. Rappé, and Y. Wang. "Mechanistic insight into low temperature SCR by ceria–manganese mixed oxides incorporated into zeolites." ***Catalysis Science & Technology***, 2023, DOI:10.1039/D2CY01921C.

395. F.Lin, W.Hu, N.R.Jaegers, F.Gao, J.Hu, H.Wang, Y.Wang, "Elucidation of the roles of water on the reactivity of surface intermediates in carboxylic acid ketonization on TiO_2", ***J.Am.Chem.Soc***., 2022, DOI: 10.1021/jacs.2c08511.

394. X. Li, X. I. P. Hernandez, Y. Chen, J. Xu, J. Zhao, C. Pao, C.-Y. Fang, J. Zeng*, Y. Wang*, B. C. Gates*, J. Liu*, "Functional CeOx Nanoglues for Robust Atomically Dispersed Catalysts", ***Nature***, 2022, doi: 10.1038/s41586-022-05251-6.

393. C.E. García-Vargas, X.I.Pereira-Hernández, D.Jiang, R.Alcala, A.T. DeLaRiva, A.Datye, Y.Wang, "Highly active and stable single atom Rh1/CeO2 catalyst for CO Oxidation during redox cycling", ***ChemCatChem***, 2022, DOI:10.1002/cctc.202201210.

392. C.García-Vargas, G.Collinge, D.Yun, M. Lee, V.Muravev, Y.Su, X.I.Pereira Hernandez, D.Jiang, V.Glezakou, E.Hensen, R.Rousseau, A.Datye, Y.Wang, "Activation of Lattice and Adatom Oxygen by Highly Stable Ceria-supported Cu Single Atoms", ***ACS Catal.***, 2022, https://doi.org/10.1021/acscatal.2c04001 (cover).

391. J.Liu, Z.Huang, M.Fan, J.Yang, J.Xiao, Y.Wang, "Future Energy Infrastructure and Energy Platform", ***Nano Energy***, 2022, doi: 10.1016/j.nanoen.2022.107915.

390. K.Khivantsev, J.Kwak, N.R. Jaegers, I.Z. Koleva, G.N. Vayssilov, M.A. Derewinski, Y.Wang, H. A. Aleksandrov, J.Szanyi, "Identification of the mechanism of NO reduction with ammonia (SCR) on zeolite catalysts", ***Chemical Science***, 2022, DOI: 10.1039/D2SC00350C.

389. I.Song, K.Khivantsev, Y.Wu, M.Bowden, Y.Wang, J.Szanyi, "Unusual water-assisted NO adsorption over Pd/FER calcined at high temperatures: The effect of cation migration", ***Appl.Catal.B: Environmental***, 2022, 318, 121810.

388. R.Liang, J.Li, Y.Wang, Z.Zhang, B.Luan, J.Liu, S.Qian, S.Wan, D.Zhao, H.Xiong, S.Wang, J.Lin, Y.Wang, "Hexagonal boron nitride for selective oxidative dehydrogenation of n-hexane to olefins", ***Appl.Catal.A: General***, 2022, 643, 118763. DOI:10.1016/j.apcata.2022.118763.

387. Y.Wu, T.Andana, Y.Wang, Y.Chen, E.D.Walter, M.H.Engelhard, K.G. Rapp´e, Y.Wang, F.Gao, U. Menon, R.Daya, D.Trandal, H.An, Y.Zha, K.Kamasamudram, "A comparative study between real-world and laboratory accelerated aging of Cu/SSZ-13 SCR catalysts", ***Appl.Catal.B: Environmental***, 2022, 318, 121807.

386. W.Hu, N.Jaegers, A.D.Winkelman, S.S.Murali, K.T.Mueller, Y.Wang, J.Hu, "Modelling Complex Molecular interactions in Catalytic Materials for Energy Storage and Conversion in Nuclear Magnetic Resonance", ***Frontiers in Catalysis***, 2022, doi: 10.3389/fctls.2022.935174.

385. L.Zhang, Q.Bao, B. Zhang, Y.Zhang, S. Wan, S. Wang, J.Lin, H.Xiong, D. Mei, Y. Wang, "Distinct role of surface hydroxyls in single-atom Pt1/CeO2 catalyst for room-temperature formaldehyde oxidation: acid-base vs redox", ***JACS Au***, 2022, DOI: 10.1021/jacsau.2c00215.

384. J.Zhang, J.Li, B.Sudduth, J.Sun, C.Zhang, H.He, Y.Wang, "Enhanced Selective Hydrogenolysis of Phenolic C-O Bond over Graphene-covered Fe-Co Alloy Catalysts", ***ACS Sus.Chem.Eng***., 2022, 10.1021/acssuschemeng.2c02075.

383. Y.Wu, Y.Ma, Y.Wang, K.Rappe, N.Washton, Y.Wang, E.Walter, F.Gao, Feng, "Rate Controlling in Low-temperature Standard NH3-SCR: Implications from Operando EPR Spectroscopy and Reaction Kinetics", ***J.Am.Chem.Soc***., 2022, 144, 22, 9734–9746

382. T.Andana, K.G.Rappé, N.C. Nelson, F.Gao, Y.Wang, "Selective catalytic reduction of NOx with NH3 over Ce-Mn oxide and Cu-SSZ-13 composite catalysts – Low temperature enhancement", ***Appl.Catal.B: Environmetal***, 2022, DOI: 10.1016/j.apcatb.2022.121522.

381. H.Pham, A.DeLaRiva, E. Peterson, R.Alcala, K. Khivantsev, J. Szanyi, X.Li, D.Jiang, W.Huang, Y.Sun, P.Tran, Q. Do, C. DiMaggio, Y. Wang, A.Datye, ""Designing Ceria/Alumina for Efficient Trapping of Platinum Single Atoms", ***ACS Sus.Chem.Eng.***, 2022, doi:10.1021/acssuschemeng.2c01380.

380. Z.Zhang, P.Han, L.Li, X.Zhang, X.Cheng, J.Lin, S.Wan, H.Xiong, Y.Wang, S.Wang, "Confinement-enhanced selective oxidation of lignin derivatives to formic acid over Fe-Cu/ZSM-5 catalysts under mild conditions", ***ChemSusChem***, 2022, doi: 10.1002/cssc.202200218.

379. B.Qian, S.Yang, J.Zhangc, S.Zhou, B.Etschmann, C.Liu, B.Dai, J.Cashion, Y.Wang, H.Wang, L.Zhang, "Waste to worth: a high-temperature water-gas shift magnetite catalyst with encapsulated core-shell structure from coal fly ash", ***Fuel Processing Technology***, 2022, 232, 107265.

378. Y.Zheng, Z.Duan, R.Liang, R.Lv, C.Wang, Z.Zhang, S.Wan, S.Wang, H.Xiong, S.K.Ngaw, J.Lin, Y.Wang, "Shape-dependent performance of Cu/Su2O for photocatlytic reduction of CO2", ***ChemSusChem***, 2022, doi:10.1002/cssc.202200216.

377. H.Li, M.J. Hurlock, B.Sudduth, J. Li; J.Sun, Q.Zhang, Y.Wang, "Acetone to Isobutene Conversion on ZnxTiyOz: Effects of TiO2 Facet", ***J.Catal***., 2022, doi:10.1016/j.jcat.2022.03.031.

376. M.Tan, Y.Yang, Y.Yang, J.Chen, Y.Yang, Z.Zhang, J.Lin, S.Wan, S.Wang, Y.Wang, "Hydrogen spillover assisted by oxygenate molecules over nonreducible oxides", ***Nature Comm***., (2022)13:1457,doi.org/10.1038/s41467-022-29045.

375. H.Zhang, J.Lv, Z.Zhang, C.Du, S.Wang, J.Lin, S.Wan, Y.Wang,* H. Xiong*, "Oxidation of methane to Methanol by Water Over Cu/SSZ-13: Impact of Cu Loading and Formation of Active Sites", ***ChemCatChem***, 2022, doi.org/10.1002/cctc.202101609.

374. L.Liu, Y.Lin, Y.Hu, Z.Lin, S.Lin, M.Du, L.Zhang, X.Zhang, J.Lin, Z.Zhang, H.Xiong, S.Wang, B.Ge, S.Wan, Y.Wang "ZnAl2O4 spinel supported PdZn catalyst with ppm Pd for methanol steam reforming", ***ACS Catal.,*** 2022, doi: 10.1021/acscatal.1c04922.

373. L.Zhang, L.Xue, B.Lin, Q.Zhao, S.Wan, Y.Wang, H.Jia, H.Xiong, "Noble Metal Single-Atom Catalysts for the Catalytic Oxidation of Volatile Organic Compounds", ***ChemSusChem***, 2022, doi: 10.1002/cssc.202102494R2 (front cover).

372. I.Song, K.Khiantsev, Y.Wang, J.Szanyi, "Elucidating the role of CO in NO storage mechanism on Pd/SSZ-13 with in situ DRIFTS", ***J.Phy.Chem.C***, 2022, doi: 10.1021/acs.jpcc.1c1063.

371. H.Peng, T.Dong, S.Yang, H. Chen, Z.Yang, W.Liu, C.He, P.Wu, J.Tian, Y.Peng, X.Chu, D.Wu, T.An, Y.Wang, S.Dai, "Intra-crystalline mesoporous zeolite encapsulation-derived thermally robust metal nanocatalyst in deep oxidation of light alkanes", ***Nature Comm.***, 2022, 13, 295. DOI: 10.1038/s41467-021-27828-x.

370. F.Lin, Y. Lu, K. Unocic, S. Habas, M. Griffin, J. Schaidle, H.Meyer III, Y. Wang, H.Wang, "Deactivation by Potassium Accumulation on a Pt/TiO2 Bifunctional Catalyst for Biomass Catalytic Fast Pyrolysis", ***ACS Catal***., 2021, https://doi.org/10.1021/acscatal.1c02368.s001.

369. B.Sudduth, J.Sun, Y.Wang, "Chemical grafting of highly dispersed VOx/CeO2 for increased catalytic activity in methanol oxidative dehydrogenation", ***Catal.Lett.***, 2021, DOI: 10.1007/s10562-021-03862-8.

368. K.Khivantsev, N.R.Jaegers, H.A.Aleksandrov, L.Kovarik, M.A.Derewinski, Y.Wang, G.N. Vayssilov, J.Szanyi, "Biomimetic CO oxidation below -100 ºC by a nitrate-containing metal-free microporous system", ***Nature Comm.***, 2021, 12, 6033 (2021). https://doi.org/10.1038/s41467-021-26157-3.

367. D.Jiang, Y. Yao, T. Li, G.Wan, X.Pereira-Hernández, Y.Lu, J.Tian, K.Khivantsev, M.H. Engelhard, C.Sun, C.E. García-Vargas, A,S. Hoffman, S. R. Bare, A.K. Datye, L.Hu, Y.Wang, "Tailoring the Local Environment of Pt in Single-Atom Pt1/CeO2 Catalysts for Robust Low-Temperature CO Oxidation", ***Angewandte Chemie.Int.Ed***, 2021, 60, 26054-26062, DOI: 10.1002/anie.202108585.

366. H.Xiong, D.Kunwar, D.Jiang, C.E. García-Vargas, H.Li, C.Du, G.Canning, X.I.Pereira-Hernandez, Q.Wan, S.Lin, S.C.Purdy, J.T.Miller, K.Leung, S.S.Chou, H.H.Brongersma, Rik ter Veen, J.Huang, H.Guo*, Y.Wang*, A.K.Datye*, "Engineering catalyst supports to stabilize PdOx two-dimensional rafts for water-tolerant methane oxidation"*,* ***Nature Catalysis***, 2021, doi: 10.1038/s41929-021-00680-4.

365. K.Khivantsev, X.Wei, L. Kovarik, N.R.Jaegers, E.D.Walter, P.Tran, Y.Wang, J.Szanyi, "Pd/FER vs Pd/SSZ-13 Passive NOx Adsorbers: Adsorbate-controlled Location of Atomically Dispersed Pd(II) in FER Determines High Activity and Stability", ***Angewandte Chemie.Int.Ed***, 2021, DOI: 10.1002/anie.202107554.

364. H.Li, Q.Wan, C. Du, Q. Liu, J. Qi, X. Ding, S. Wang, S.Wan, J. Lin, C.Tian, L. Li, T.Peng, W.Zhao, H. Zhang, J. Huang, H. Guo, S.Lin, A.K.Datye, H.Xiong, Y. Wang, "Vapor-Phase Self-Assembly to Generate Single Atom Catalysts with Weak Metal-Support Interaction", ***Chem***, 2021, DOI: 10.2139/ssrn.3835429.

363. Y.Sun, G.Han, L.Du, C.Du, X.Zhou, Q.Sun, Y.Gao, G.Yin, Y.Li, and Y.Wang, "Photoelectrochemistry-Driven Selective Hydroxyl Oxidation of Polyols: Synergy between Au Nanoparticles and C3N4 Nanosheets", ***Chem.Catalysis***, 2021, doi: 10.1016/j.chemcat.2021.09.001.

362. B.J.Sudduth, D.Yun, J.Sun, Y.Wang, "Facet-Dependent Selectivity of CeO2 nanoparticles in 2-Propanol Conversion", ***Journal of Catalysis***, 2021, doi:10.1016/j.jcat.2021.09.009.

361. J.Lai, N.Jaegers, B.Mosevitzky Lis, M.Guo, M.Ford, E.Walter, Y.Wang, J.Hu, I.Wachs, "Structure-Activity Relationships of Hydrothermally Aged Titania-Supported Vanadium-Tungsten Oxide Catalysts for SCR of NOx Emissions with NH_3", ***ACS Catal***, 2021, doi: 10.1021/acscatal.1c02130.

360. H.Li, D.Guo, N.Ulumuddin, M.R.Jaegers, J.Sun, B.Peng, J.S.McEwen, J.Hu, Y.Wang, "Elucidating the Cooperative Roles of Water and Lewis Acid−Base Pairs in Cascade C−C Coupling and Self-Deoxygenation Reactions", ***JACS Au***, 2021, https://doi.org/10.1021/jacsau.1c00218. (cover)

359. C.B.Cockreham, X.Zhang, J.A.Eakin, M.Dewa, H.Li, N.Li, J.Sun, S.Ha, C.F.Ivory, Y.Wang, H.Xu, D.Wu, "Unveiling the Interfacial and Structural Heterogeneity of Ti3C2Tx MXene Etched with CoF2/HCl by Integrated in Situ Thermal Analysis", ***ACS Appl. Mater. Interfaces***, 2021, doi: 10.1021/acsami.1c10021.

358. X.Zhang, M.E.Reece, C.B.Cockreham, H.Sun, B.Wang, H.Xu, J.Sun, X.Guo, H.Su, Y.Wang, D.Wu "Formation Energetics and Guest – Host Interactions of Molybdenum Carbide Confined in Zeolite Y", ***Ind.Eng.Chem.Res***, 2021, doi: 10.1021/acs.iecer.1c02822.

357. X.Zhang, A.C.Strzelecki, C.B.Cockreham, V.G.Goncharov, H.Li, J.Sun, H.Sun, X.Guo, H.Xu, S.Ha, B.Wang, Y.Wang, D.Wu, "Thermodynamics of Molybdenum Trioxide (MoO3) Encapsulated in Zeolite Y", ***AIChE J***., 2021, doi:10.22541/au.162206667.74058496/v1.

356. J.Zhang, B.Sudduth, J.Sun, L.Kovarik, M.H.Engelhard, Y.Wang, "Elucidating the Active Site and the Role of Alkali Metals in Selective Hydrodeoxygenation of Phenols over Iron-carbide-based Catalyst", ***ChemSusChem***, 2021, doi: 10.1002/cssc.202101382.

355. L.Zhang, B.Zhang, P.Xue, J.Li, Z.Zhang, Y.Yang, S.Wang, J.Lin, H.Liao, Y.Wang, Y.Yao, S.Wan, H.Xiong, "The Effect of Pretreatment on the Reactivity of Pd/Al2O3 in Room Temperature Formaldehyde Oxidation", ***ChemCatChem***, 2021, https://doi.org/10.1002/cctc.202101091.

354. P.Han, Z.Zhang, Z.Chen, J.Lin, S.Wan, Y.Wang, S.Wang, "Critical Role of Al Pair Sites in Methane Oxidation to Methanol on Cu-Exchanged Mordenite Zeolites", ***Catalysts***, 2021, 11(6), 751; https://doi.org/10.3390/catal11060751.

353. N.R.Jaegers, Y.Wang, J.Hu, I.E.Wachs, "Impact of Hydration on Supported V2O5/TiO2 Catalysts as Explored by Magnetic Resonance Spectroscopy", ***J.Phy.Chem.C***, 2021 125 (30), 16766-16775, DOI: 10.1021/acs.jpcc.1c04150.

352. J.Tian, J.Li, S.Qian, Z.Zhang, S.Wan, S.Wang, J.Lin, Y.Wang," Understanding the origin of selective oxidative dehydrogenation of propane on boron-based catalysts", ***Appl.Catal.A: General***, 2021, https://doi.org/10.1016/j.apcata.2021.118271

351. F.Lin, T.Andana, Y.Wu, J.Szanyi, Y.Wang, F.Gao, "Catalytic Site Requirements for N2O Decomposition on Cu-, Co-, and Fe-SSZ-13 Zeolites", ***J.Catal***, 2021, https://doi.org/10.1016/j.jcat.2021.07.012.

350. Y.Lu, Z.Zhang, H.Wang, Y.Wang, "Toward efficient single-atom catalysts for renewable fuels and chemicals production from biomass and CO2", ***Appl.Catal.B: Environmental***, 2021, doi.org/10.1016/j.apcatb.2021.120162.

349. B.Qian, J.Zhang, S.Zhou, J.Lu, Y.Liu, B.Dai, C.Liu, Y.Wang, H.Wang, L.Zhang, "Synthesis of (111) facet-engineered MgO nanosheet from coal fly ash and its superior catalytic performance for high-temperature water gas shift reaction", ***Appl.Catal.A, General***, 2021, doi: 10.1016/j.apcata.2021.118132.

348. A.J.R.Hensley, G.Collinge, Y.Wang, J.S.McEwen, "Guiding the design of oxidation-resistant Fe-based single atom alloy catalysts with insights from configurational space", ***J.Chem.Phy.C***, 2021, doi:10.1063/5.00048698.

347. Y.Chu, U.Sayal, X.S.Li, Y.Qiu, M.Song, M.H.Engelhard, S.D.Davidson, K.Koh, L.C.Meyer, J.Zheng, X.Xie, D.Li, J.Liu, O.Y.Gutierrez, Y.Wang, Y.Shao, "Tuning proton transfer and catalytic properties in triple junction nanostructured catalyst", ***Nano Energy***, 2021, doi: 10.1016/j.nanoen.2021.106046.

346. N.G.Petrik, Y.Wang, B.Wen, Y,Wu, R.Ma, A.Dahal, F.Gao. R.Rousseau, Y.Wang, G.A.Kimmel, A.Selloni, Z.Dohnalek, "Conversion of formic acid on single- and nano-crystalline anatase TiO2(101)", ***J.Phy.Chem.C***, 2021, doi:10.1021/acs.jpcc.1c00571.

345. T.Andana, K.G.Rappé, F.Gao, J.Szanyi, X.P.Hernand, Y.Wang, "Recent advances in hybrid metal oxide–zeolite catalysts for low-temperature selective catalytic reduction of NOx by ammonia", ***Appl.Catal.B: Environmental***, 2021, doi.org/10.1016/j.apcatb.2021.120054.

344. Y.Cui, Z.Chen, B.Peng, L.Kovarik, A.Devaraj, Z.Li, T.Ma, Y.Wang, J.Szanyi, J. Miller, Y.Wang, F.Gao, "Onset of high methane combustion rates over supported palladium catalysts: from isolated Pd cations to PdO nanoparticles", ***JACS Au***, 2021, 10.1021/jacsau.0c00109. (cover)

343. Y.Wu, F.Gao, H.Wang, L.Kovarik, B.Sudduth, Y.Wang, "Probing Acid-base Properties of Anatase TiO2 Nanoparticles with Dominant {001} and {101} Facets using Methanol Chemisorption and Surface Reactions", ***J.Phy.Chem.C***, 2021, doi:10.1021/acs.jpcc.0c11107.

342. A.Wang, Y.Chen, E.D.Walter, N.M.Washton, T.Varga, Y.Wang, F.Gao, "Remarkable self-degradation of Cu/SAPO-34 selective catalytic reduction catalysts during sorage at ambient conditions", ***Catal.Today***, 2021, 360, 367-374, doi: 10.106/j.cattod.2020.01.034.

341. Y.Zheng, L.Zhang, J.Guan, S.Qian, Z.Zhang, C.Ngaw, S.Wan, S.Wang, J.Lin, Y.Wang, "Controlled Synthesis of Cu^0/Cu_2O for Efficient Photothermal Catalytic Conversion of CO_2 and H_2O", ***ACS Sus.Chem.Eng.***, 2021, 10.1021/acssuschemeng.0c07702.

340. S.Xu, N.R. Jaegers, W.Hu, J.H.Kwak, X.Bao, J.Sun, Y.Wang, J.Hu, "High Field 1D and 2D ^{27}Al MAS NMR Study of θ-, δ-, and γ-Al_2O_3 Dominated Aluminum Oxides: Toward Understanding the Al Sites in γ-Al_2O_3", ***ACS Omega***, 2021, 10.1021/acsomega.0c06163.

339. H.Xiong, A.Datye, Y.Wang, "Thermally-stable single atom heterogeneous catalysts", ***Advanced Materials***, 2020, DOI: 10.1002/adma.202004319.

338. J.Dong, K.Konstantin, Y.Wang, "Complete low-temperature methane oxidation to enable efficient emission control in natural gas vehicles", ***ACS Catal.***, 2020, doi:10.1021/acscatal.0c03338. (cover)

337. F.Lin, H.Wang, Y. Zhao, J.Fu, D.Mei, N.Jaegers, F.Gao, Y. Wang, "Elucidation of Active Sites in Aldol Condensation of Acetone over Single-Facet Dominant Anatase TiO2 (101) and (001) Catalysts", ***JACS Au***, 2020, DOI: 10.1021/jacsau.0c00028. (cover)

336. J.Tian, J.Tan, Z.Zhang, P.Han, M.Yin, S. Wan, J.Lin, S.Wang, Y. Wang, "Direct Conversion of Methane to Formaldehyde and CO on B2O3 Catalysts", ***Nature Comm***., 2020, doi: 10.1038/s41467-020-19517-y.

335. K.Khivantsev, C.Vargas, J.Tian, L.Kovarik, N.R. Jaegers, J.Szanyi, Y.Wang, "Economizing on Precious Metals in Three-Way Catalysts: Thermally Stable and Highly Active Single-Atom Rhodium on Ceria for NO Abatement under Dry and Industrially Relevant Conditions", ***Angew.Chem.Int.Ed***., 2020, DOI: 10.1002/anie.202010815.

334. R.Alcala, A.DeLaRiva, E.J.Peterson, A.Benavidez, C.E.Garcia-Vargas, D.Jiang, X.Pereira-Hernández, H.H.Brongersma, R.ter Veen, J.Staněk, J.T.Miller, Y.Wang, A.Datye, "Atomically Dispersed Dopants for Stabilizing Ceria Surface Area", ***Appl.Catal.B: Environmental***, 2020, https://doi.org/10.1016/j.apcatb.2020.119722.

333. F.Lin, V. Dagle, A.D. Winkelman, M.H. Engelhard, L. Kovarik, Y. Wang, R. Dagle and H. Wang "Understanding the Deactivation of Ag-ZrO2/SiO2 Catalysts for the Single-Step Conversion of Ethanol to Butenes." ***ChemCatChem***, 2020, DOI:10.1002/cctc.202001488.

332. X.Isidro Pereira-Hernández, A.DeLaRiva, V.Muravev, D.Kunwar, H.Xiong, B.Sudduth, M.Engelhard, L.Kovarik, E.J.M. Hensen, Y.Wang, A.K.Datye, Reply to "Pitfalls in identifying active catalyst species", ***Nature Comm***., 2020, 10.1038/s41467-020-18193-2.

331. J.Pang, M.Zheng, C.Wang, X.Yang, H.Liu, X.Liu, J.Sun, Y.Wang, T.Zhang, "Hierarchical Echinus-like Cu-MFI Catalysts for Ethanol Dehydrogenation", ***ACS Catal.***, 2020, 10, 22, 13624–13629.

330. Y.Zhang, Y.Wu, Y.Peng, J.Li, E.D.Walter, Y.Chen, N.M.Washton, J.Szanyi, Y.Wang, F.Gao, "Quantitative Cu counting methodologies for Cu/SSZ-13 selective catalytic reduction catalysts by EPR spectroscopy", ***J.Phys.Chem. C***, 2020, doi:10.1021/acs.jpcc.0c07971. (cover)

329. N.R. Jaegers, W.Hu, Y.Wang, J.Hu, "High-Temperature and High-Pressure In situ Magic Angle Spinning Nuclear Magnetic Resonance Spectroscopy", ***JoVE Journal***, 2020, doi: 10.3791/61794.

328. Y.Lu, Z.Zhang, F. Lin, H. Wang, Y. Wang, "Single-atom automobile exhaust catalysts", ***ChemNanoMat***, 2020, 6(12) 1659-1682, DOI: 10.1002/cnma.202000407R1.

327. L.Liu, Z.Lin, Y.Chen, S.Chen, X.Zhang, J.Lin, S.Wan, Y.Wang, "Conversion of syngas to methanol and DME on highly selective Pd/ZnAl2O4 catalyst", ***J.Energy Chem.***, 2020, doi: 10.1016/j.jechem.2020.10.003.

326. A.J.R. Hensley, I.deJoode, Y.Wang, J.S.McEwen, "Identifying Trends in the Field Ionization of Diatomic Molecules over Adsorbate Covered Pd(331) Surfaces", ***Topics in Catalysis***, 2020, doi: 10.1007/s11244-020-01392-y.

325. K.Khivantsev, N.R.Jaegers, L.Bovarik, M.Wang, J.Hu, M.A.Derewinski, Y.Wang, J.Szanyi, "The Superior Hydrothermal Stability of Pd/SSZ-39 in Low Temperature Passive NOx Adsorption (PNA) and Methane Combustion", ***Appl.Catal.B: Environmental***, 2020, https://doi.org/10.1016/j.apcatb.2020.119449.

324. D.Jiang, G. Wan, C. GARCIA, L. Li, X.I.P.Hernandez, C. Wang, Y.Wang, "Elucidation of the Active Sites in Single-Atom Pd1/CeO2 Catalysts for Low-Temperature CO Oxidation", ***ACS Catalysis***, 2020, DOI: 10.1021/acscatal.0c02480. (cover)

323. J.Zhang, J.Sun, Y.Wang, "Hydrodeoxygenation of lignin-derived aromatic oxygenates over Pd-Fe bimetallic catalyst: A mechanistic study of direct C-O bond cleavage and direct ring hydrogenation", ***Catalysis Letters***, 2020, DOI: 10.1007/s10562-020-03352-3.

322. V.Dagle, A.Winkelman, N. Jaegers, J. Saavedra-Lopez, J. Hu, M. Engelhard, S. Habas, S.Akhade, L. Kovarik, V. Glezakou, R. Rousseau, Y. Wang, R.A. Dagle, "Single-step conversion of ethanol to n-butenes over Ag-ZrO2/SiO2 catalysts", ***ACS Catal.***, 2020, DOI: 10.1021/acscatal.0c02235. (cover)

321. Y.Zhang, Y.Peng, J. Li, K. Groden, J. McEwen, E.Walter, Y.Chen, Y. Wang, F.Gao, "Probing Active-Site Relocation in Cu/SSZ-13 SCR Catalysts during Hydrothermal Aging by in situ EPR Spectroscopy, Kinetic Studies, and DFT Calculations", ***ACS Catal.***, 2020, DOI: 10.1021/acscatal.0c01590. (cover)

320. H.Li, J.Peng, N.R.Jaegers, L.Kovarik, M.Engelhard, A.W.Savoy, J.Hu, J.Sun, Y.Wang, "Conversion of ethanol to 1,3–butadiene over Ag–ZrO2/SiO2 catalysts: The role of surface interfaces", ***J.Energy.Chem***., 2020, 54, 7-15. https://doi.org/10.1016/j.jechem.2020.05.038.

319. Y.Yang, M. Tan, A. Garcia, Z. Zhang, J.Lin, S. Wan, J.S. McEwen, S. Wang, Y. Wang, "Controlling the Oxidation State of Fe-based Catalysts Through Nitrogen Doping Toward the Hydrodeoxygenation of m-Cresol", ***ACS Catal***., 2020, doi.org/10.1021/acscatal.0c00626. (cover)

318. J.Zhang, J.Sun, L.Kovarik, M.H.Engelhard, L.Du, B.Dudduth, H.Li, Y.Wang, "Surface Engineering of Earth-abundant Fe Catalysts for Selective Hydrodeoxygenation of Phenolics in Liquid Phase", ***Chemical Science***, 2020, DOI: 10.1039/D0SC00983K. (front cover)

317. Hu, J., Jaegers, N., Washton, N., Wang, Y, 2021, "High-field NMR Spectroscopy" in *Handbook of Advanced Catalyst Characterization*, page 20-25, Springer.

316. Zhang, J., J. Sun, and Y. Wang. 2021. "An overview of catalytic bio-oil upgrading. Part I: Processing aqueous-phase compounds." In *Handbook of Biodiesel and Petrodiesel Fuels: Science, Technology, Health, and Environment.* Volume 1. Biodiesel Fuels: Science, Technology, Health, and Environment, ed. O. Konur. Boca Raton, FL: CRC Press.

315. Zhang, J., J. Sun, and Y. Wang. 2021. "An overview of catalytic bio-oil upgrading. Part II: Processing oil-phase compounds and real bio-oil." In *Handbook of Biodiesel and Petrodiesel Fuels: Science, Technology, Health, and Environment*. Volume 1. Biodiesel Fuels: Science, Technology, Health, and Environment, ed. O. Konur. Boca Raton, FL: CRC Press.

314. L.Zhang, Y.Wang, Y.Yang, B.Zhang, S.Wang, J.Lin, S.Wan, Y.Wang, "Selective Hydrogenolysis of Aryl Ether Bond over Ru-Fe Bimetallic Catalyst", ***Catal.Today***, 2020, https://doi.org/10.1016/j.cattod.2020.04.030.

313. S.A. Akhade, A.Winkelman, V.L.Dagle, L.Kovarik, S.F. Yuk, Mal.Lee, J.Zhang, A.B. Padmaperuma, Robert.A. Dagle, V.Glezakou, Y.Wang, R.Rousseau "Influence of Ag metal dispersion on the thermal conversion of ethanol to butadiene over Ag-ZrO2/SiO2 catalysts", ***J.Catal.***, 2020, DOI: 10.1016/j.jcat.2020.03.030.

312. W.Hu, Z.Chi, Y.Wan, S.Wang, J.Lin, S.Wan, Y.Wang, "Synergetic effect of Lewis acid and base in modified Sn-β on direct conversion of levoglucosan to lactic acid", ***Catal.Sci.Tech.***, 2020, 10, 2986-2993.

311. L.Zhang, L.Zhang, Y.Chen, Y.Zheng, J.Guo. S.Wan, S.Wang, C.Ngaw, J.Lin, Y.Wang, "CdS/ZnO: A Multi-pronged Approach for Efficient Reduction of Carbon Dioxide under Visible Light Irradiation", ***ACS Sus.Chem.Eng.***,2020, 8, 13, 5270–5277.

310. N.R.Jaegers, Y.Wang, J.Hu, "Thermal perturbation of NMR properties in small polar and non-polar molecules", ***Scientific Reports***, 2020, April 20. doi:10.1038/s41598-020-63174-6.

309. A.Hensley, G.Collinge, Y.Wang, J.S.McEwen, "Coverage Dependent Adsorption of Hydrogen on Fe(100): Determining Catalytically Relevant Surface Structures via Lattice Gas Models", ***J.Phys.Chem.C***, 2020, doi:10.1021/acs.jpcc9b11945. (cover)

308. F.Lin, Y.Chen, L.Zhang, D.Mei, L.Kovarik, B.Sudduth, H.Wang, F.Gao, Y.Wang, "Single-Facet Dominant Anatase TiO_2 (101) and (001) Model Catalysts to Elucidate the Active Sites for Alkanol Dehydration", ***ACS Catalysis***, 2020, doi: 10.1021/acscatal.9b04654. (cover)

307. L.Du, V.Prabhakaran, X.Xie, S.Park, Y.Wang, Y.Shao, "Low-PGM and PGM-Free Catalysts for Proton Exchange Membrane Fuel Cells: Stability Challenges and Material Solutions", ***Advanced Materials***, 2020, doi:10.1002/adma.201908232.

306. H.Li, J.Sun, G.Li, D.Wu, Y.Wang, "Real-time monitoring of surface acetone enolization and aldolization", ***Catal.Sci.Tech***., 2020, DOI: 10.1039/c9cy02339a. (back cover)

305. N.R.Jaegers, K.T.Mueller, Y.Wang, J.Hu, "Variable Temperature and Pressure Operando MAS NMR for Catalysis Science and Related Materials", ***Accounts of Chemical Research***, 2020, https://dx.doi.org/10.1021/acs.accounts.9b00557.

304. J.Zhang, J.Sun, Y.Wang, "Recent advances in the selective catalytic hydrodeoxygenation of lignin-derived oxygenates to arenes", ***Green Chemistry***, 2020, doi:10.1039/c9gc02762a.

303. K.Khivantsev, M.R.Jaegers, L.Kovarik, J.Hu, F.Gao, Y.Wang, J.Szanyi, "Palladium/zeolite low temperature passive NOx adsorbers (PNA); structure-adsorption property relationships for hydrothermally aged PNA materials", ***Emiss.Control Sci.Technol.***, 2020, 6 (138), 126–138, https://doi.org/10.1007/s40825-019-00139-w.

302. C.B. Cockreham, X. Zhang, H.Li, E.Hammond-Pereira, J.Sun, S.R. Saunders, Y.Wang, H.Xu, D. Wu, "Inhibition of AlF3·3H2O Impurity Formation in Ti3C2Tx MXene Synthesis under a Unique CoFx/HCl Etching Environment", ***ACS Appl. Energy Mater***. 2019, 2, 11, 8145–8152.

301. Y.Wan, L.Zhang, J.Lin, W.Hu, J.Lin, S.Wan, Y.Wang, "One-pot synthesis of gluconic acid from biomass-derived levoglucosan using a Au/$Cs_{2.5}H_{0.5}PW_{12}O_{40}$ catalyst", ***Green Chemistry***, 2019, 21, 6318-6325.

300. X.Zhang, C.Liu, C.Ke, L.Liu, X.Hao, Y.Wu, S.Wan, S.Wang, Y.Wang, "Hydrothermally stable ZnAl2O4 nanocrystals with controlled surface structures for design of longevity and highly active/selective PdZn Catalyst", ***Green Chemsitry***, 2019, 21(24) 6574-6578, doi:10.1039/C9GC02483B.

299. K.Khivantsev, N.R.Jaegers, I.Koleva, H.Aleksandrov, L.Kovarik, M.Engelhard, F.Gao, Y.Wang, G.Vayssilov, J.Szanyi, "Stabilization of Super Electrophilic Pd+2 Cations in Small-Pore SSZ-13 Zeolite", ***J.Phys.Chem.C***, 2019, doi:10.102/acs.jpcc.9b06760.

298. B.Peng, K.G.Rappe, Y.Cui, F.Gao, J.Szanyi, M.J.Olszta, E.D.Walter, Y.Wang, J.Holladay, R.A.Goffe, "Enhancement of high-temperature selectivity on Cu-SSZ-13 towards NH3-SCR reaction from highly dispersed ZrO2", ***Applied Catalysis B: Environmental***, 2019, DOI: 10.1016/j.apcatb.2019.118359.

297. N.Chaudhary, A.Hensley, G.Colllinge, Y.Wang, J.S.McEwen, "Coverage-Dependent Adsorption of Phenol on Pt (111) from First Principles", ***J.Phys.Chem.C***, 2019, doi:10.1021/acs.jpcc.9b07517.

296. N.R.Jaegers, K.Khivantsev, L.Kovarik, D.Klas, J.Hu, J.Szanyi, "Catalytic activation of ethylene C-H bonds on uniform d8 Ir(I) and Ni(II) cations in zeolites: toward molecular level understanding of ethylene polymerization on heterogeneous catalysts", ***Catal.Sci.Tech***., 2019, 9(23) 6570-6576, doi: 10.1039/c9cy01442j.

295. Y.Cui, Y.Wang, D.Mei, E.D.Walter, N.M.Washton, J.D.Holladay, Y.Wang, J.Szanyi, C.H.F.Peden, F.Gao, "Revisiting effects of alkali metal and alkaline earth co-cation additives to Cu/SSZ-13 selective catalytic reduction catalysts", ***J.Catal.***, 2019, 378, 363-375.

294. G.Li, X.Zhang, D.Qiu, Z.Liu, C.Yang, D.B.Cockreham, B.Wang, L.Fu, J.Zhang, B.Sudduth, X.Guo, H.Sun, Z.Huang, J.Qi, J.Sun, S.Ha, Y.Wang, D.Wu, "Tuning Ni/Al Ratio to Enhance Pseudocapacitive Charge Storage Properties of Nickel–Aluminum Layered Double Hydroxide", ***Adv.Electron.Mater.***, 2019, 5, 1900215, doi: 101.1002/aelm.201900215.

293. A.Dahal, N.G.Petrick, Y.Wu, G.A.Kimmel, F.Gao, Y.Wang, Z.Dohnalek, "Adsorption and reaction of methanol on anatase TiO2(101) single crystals and faceted nanoparticles", ***J.Phys.Chem.:C***, 2019, 123(39) 24133-24145, doi: 10.1021/acs.jpcc.9b07080.

292. N.R. Jaegers, J.Lai, Y.He, E.Walter, D.A. Dixon, M.Vasiliu, Y.Chen, C.Wang, M.Y.Hu, K.T.Mueller, I.E. Wachs, Y.Wang, J.Hu, "Tungsten oxide-promotion mechanism for supported V_2O_5/TiO_2 catalysts during NOx abatement: structural effects revealed by ^{51}V MAS NMR", ***Angew.Chem.Int.Ed***., 2019, 58(36) 12609-12616, doi:10.1002/anie.201904503.

291. Y.Wan, C.Zheng, X.Lei, M.Zhuang, J.Lin, W.Hu, J.Lin, S.Wan, Y.Wang, "Oxidative esterification of acetol with methanol to methyl pyruvate over hydroxyapatite supported gold catalyst: essential roles of acid-base properties", ***Chinese Journal of Catalysis***, 2019, 40(11) 1810-1819, doi:S1872-2067(19)63368-1.

290. F.Wang, J.C.Zhang, Z.Q.Chen, J.D.Lin, W.Z.Li, Y.Wang, B.H.Chen, "Water-saving dry methanation for direct conversion of syngas to synthetic natural gas over robust Ni0.1Mg0.9Al2O4 catalyst", ***J.Catal***, 2019, 375, 466-477, doi: 10.1016/j.jcat.2019.06.021.

289. J.Pang, J.Sun, M.Zheng, H.Li, Y.Wang, T.Zhang, "Transition metal carbide catalysts for biomass conversion: a review", ***Appl.Catal.B: Environmental***, 2019, 254, 510-522, doi: 10.1016/j.apcatb.2019.05.034.

288. J.Zhou, C.Zhang, T.Niu, R.Huang, S.Li, J.Sun, Y.Wang, "Facile synthesis of reusable magnetic Fe/Fe3C/C composites from renewable resources for super-fast removal of organic dyes: characterization, mechanism and kinetics", ***Powder Technology***, 2019, DOI: 10.1016/j.powtec.2019.04.016.

287. B.M.Wong, G.Collinge, A.J.R.Hensley, Y.Wang, J.S.McEwen, "Benchmarking the accuracy of coverage-dependent models: adsorption and desorption of benzene on Pt (111) and Pt_3Sn (111)

from first principles", ***Progress in Surface Science***, 2019, DOI: 10.1016/j.progsurf.2019.04.001.

286. B.An, Y.Meng, Z. Li, Y.Hong, T.Wang, S.Wang, J.Lin, C.Wang, S.Wan, Y.Wang, W.Lin, "A pyrocarbonate intermediate for CO2 activation and selective conversion in bifunctional metal-organic frameworks", ***J.Catal.***, 2019, 373, 37-47, doi:10.1016/j.jcat.2019.03.008.

285. M.Wang, N.Jaegers, M.S.Lee, C.Wan, J.Hu, H.Shi, D.Mei, S.Burton, D.Camaioni, O.Gutierrez, V.Glexakou, R.Rousseau, Y.Wang, J.Lercher, "Genesis and stability of hydronium ions in zeolite channels", ***J.Am.Chem.Soc***., 2019, doi:10.1021/jacs.8b07969.

284. X.Isidro Pereira-Hernández, A.DeLaRiva, V.Muravev, D.Kunwar, H.Xiong, B.Sudduth, M.Engelhard, L.Kovarik, E.J.M. Hensen, Y.Wang, A.K.Datye, "Tailoring the activity of Pt/CeO2 catalysts via high-temperature vapor-phase synthesis", ***Nature Comm.***, 2019, doi:10.1038/s41467-019-09308-5.

283. A.Wang, Y.Chen, E.D.Walter, N.M.Washton, D.Mei, T.Varga, Y.L.Wang, J.Szanyi, Y.Wang, C.H.F.Peden, F.Gao, "Unraveling the mysterious failure of Cu/SAPO-34 selective catalytic reduction (SCR) catalysts", ***Nature Comm***., 2019, doi:10.1038/s41467-019-09021-3.

282. J.Tian, J.Tan, M.Xu, Z.Zhang, S.Wan, S.Wang, J.Lin, Y.Wang, "Propane oxidative dehydrogenation over highly selective hexagonal boron nitride catalysts: the role of oxidative coupling of methyl", ***Science Advances***, 2019, doi: 10.1126/sciadv.aav8063.

281. D.Kunwar,S.Zhou, A.DeLaRiva, E.J. Peterson, H.Xiong, X.I.P.Hernández, S.C.Purdy, R.ter Veen, H.H.Brongersma, J.T.Miller, H.Hashiguchi, L.Kovarik, S.Lin, H.Guo, Y.Wang, A.K. Datye, "Stabilizing High Metal Loadings of Thermally Stable Platinum Single Atoms on an Industrial Catalyst Support", ***ACS Catal***, 2019, doi: 10.1021/acscatal.8b04885.

280. Y.Cui, Y.L.Wang, E.D.Walter, J.Szanyi. Y.Wang, F.Gao, "Influences of Na^+ co-cation on the structure and performance of Cu/SSZ-13 selective catalytic reduction catalysts", ***Catal.Today***, 2019, https://doi.org/10.1016/j.cattod.2019.02.037.

279. A.J.R.Hensley, Y.Wang, J.S.McEwen, "The Partial Reduction of Clean and Doped α-Fe2O3(0001) from First Principles", ***Appl.Catal.A:General***, 2019, https://doi.org/10.1016/j.apcata.2019.02.019

278. H.Li, J.Sun, Y.Wang, "Surface aceton reactions on ZnxZryOz: a DRIFTS-MS study", ***Appl.Catal.A: General***, 2019, 573 (SI), 22-31, doi: 10.1016/j.apcata.2019.01.007.

277. K.Khivantsev, N.Jaeger, L.Kovarik, J.Hanson, F.Tao, Y.Tang, X.Zhang, I.Z.Koleva, H.A.Aleksandrov, G.N.Vayssilov, Y.Wang, F.Gao, J.Szanyi, "Achieving Atomic Dispersion of Highly Loaded Transition Metals in Small-Pore Zeolite SSZ-13: High-Capacity and High-Efficiency Low-Temperature CO and Passive NOx Adsorbers", ***Angewandt Chemie Int.Ed***., 2018, doi:10.1002/anie.201809343.

276. J.Zhang, J.Sun, B.Sudduth, Y.Wang, "Liquid-phase hydrodeoxygenation of lignin-derived phenolics on Pd/Fe: A mechanistic study", ***Catal.Today***, 2018, doi:10.1016/j.cattod.2018.12.027.

275. T.Li, S.Ong, J.Zhang, C.Jia, J.Sun, Y.Wang, H.Lin, "One-pot conversion of carbonhydrates into furan derivatives in biphasic tandem catalytic process", ***Catal.Today***, 2018, doi.org/10.1016/j.cattod.2018.11.052.

274. K.Khivantsev, N.R.Jaegers, L.Kovarik, S.Prodinger, M.A.Derwinski, Y.Wang, F.Gao, J.Szanyi, "Palladium/Beta zeolite passive NOx adsorbers (PNA): Clarification of PNA chemistry and the effects of CO and zeolite crystallite size on PNA performance", ***Appl.Catal.A:General***, 2019, 569, 141-148, https://doi.org/10.1016/j.apcata.2018.10.021.

273. D.Mei, F.Gao, J.Szanyi, Y.Wang, "Mechanistic insight into the passive NOx adsorption in the highly dispersed Pd/HBEA zeolite", ***Appl.Catal.A: General***, 2019, 569, 181-189, https://doi.org/10.1016/j.apcata.2018.10.037.

272. K.Khivantsev, F.Gao, L.Kovarik, Y.Wang, J.Szanyi, "Molecular Level Understanding of How Oxygen and Carbon Monoxide Improve NOx Storage in Palladium/SSZ-13 Passive NOx Adsorbers: The Role of NO+ and Pd(II)(CO)(NO) Species", ***J.Phys.Chem C***, 2018, 122(20), 10820-10827, doi: 10.1021/acs.jpcc.8b01007.

271. Q.Dong, M.Wu, D.Mei.Y.Shao, Y.Wang, J.Liu, H.Li, L.Hong, "Multifunctional Pd-Sn electrocatalysts enabled by in situ formed SnOx and TiC triple junctions", ***Nano Energy***, 2018, 53, 940-948, doi: 10.1016/j.nanoen.2018.08.060.

270 Y.Yang, J.Chen, L.Zhang, M.Tan, J.Lin, S.Wan, S.Wang, Y.Wang, "Enhanced Antioxidation Stability of Iron-Based Catalysts via Surface Decoration with ppm Platinum", ***ACS Sustainable Chem.Eng***., 2018, DOI: 10.1021/acssuschemeng.8b02505.

269.Y.Zha, M.Cunningham, Y.Tang, A.Srinivasan, J.Luo, J.Heichelbech, V.Lakkireddy, A.Yezerets, S.Ruffin, Z.Wei, J.Fedeyko, B.Sukumar, H.Hess, F.Gao, J.Szanyi, Y.Wang, "Sustained Low Temperature NOx Reduction", ***SAE Technical Paper*** *2018-01-0341*, 2018, https://doi.org/10.4271/2018-01-0341.

268. Y.Feng, Q.Wan, H.Xiong, S. Zhou, X.Chen, X.Hernandez, Y.Wang, S.Lin, A.K. Datye, H.Guo, "Correlating DFT Calculations with CO Oxidation Reactivity on Ga Doped Pt/CeO2 Single-Atom Catalysts", ***J.Phys.Chem.C***, 2018, 122(39), 22460-22468, DOI:10.1021/acs.jpcc.8b05815 #

267. A.Datye, Y.Wang, "Atom trapping: a novel approache to generate theramly stable and regenerable single atom catalysts", ***National Science Review***, 2018, doi.org/10.1093/nsr/nwy093.

266. J.S.Tian, J.H.Lin, M.L.Xu, S.L.Wan, J.D.Lin, Y.Wang, "Hexagonal boron nitride catalyst in a fixed-bed reactor for exothermic propane oxidation dehydrogenation, ***Chem.Eng.Sci****,* 2018, 186 142-151; 10.1016/j.ces.2018.04.029 AUG 31 2018.

265. M.Lu, J.Zhang, Y.Yao, J.Sun, Y.Wang, H.Lin, "Renewable energy storage via efficient reversible hydrogenation of piperidine captured CO2", ***Green Chemistry***, 2018, doi: 10.1039/C8GC00954F.

264. J.H.Lin, J.S.Tian, X.J.Cheng, J.Q.Tan, S.L.Wan, J.D.Lin, Y.Wang, "Propane ammoxidation over MoVTeNb oxide catalyst in a microchannel reactor", ***AIChE J.***, 2018, doi 10.1002/aic.16377.

263. C.Miao, O.Marin-Flores, T.Dong, D.Gao, Y.Wang, M.Garcia-Pérez, S.Chen, "Hydrothermal Catalytic Deoxygenation of Fatty Acid and Bio-oil with In Situ H_2", ***ACS Sustainable Chem.Eng***., 2018, 6(4), 4521-4530.

262. S.Lyu,L. Wang,J.Zhang, C.Liu, J.Sun, B.Peng, Y.Wang, K.G. Rappé, Y.Zhang, J.Li, L.Nie, "Role of Active Phase in Fischer−Tropsch Synthesis: Experimental Evidence of CO Activation over Single-Phase Cobalt Catalysts", ***ACS Catal***, 2018, 8(9), 7787-7798, DOI: 10.1021/acscatal.8b00834.

261. L.Du, Y.Shao, J.Sun, G.Yin, C.Du, Y.Wang, "Electrocatalytic valorization of biomass derived chemicals", ***Catal.Sci.Technol***., 2018, 8(13), 3216-3232, doi:10.1039/c8cy00533h.

260. A.Wang, Y.Wang, E.Walter, R.K.Kukkadapu, Y.Guo, G.Lu, R.S.Weber, Y.Wang, C.H.F.Peden, F.Gao, "Catalytic N2O decomposition and reduction by NH3 over Fe/Beta and Fe/SSZ-13 catalysts", ***J.Catal***., 2018, 358, 199-210, https://doi.org/10.1016/j.jcat.2017.12.011.

259. R.A.L.Baylon, J.Sun, L.Korarik, M.Engelhard, H.Li, A.D.Winkelman, Y.Wang, "Structural identification of ZnxZryOz catalysts for cascade aldoliation and self-deoxygenation reactions", ***Appl.Catal.B: Environmental***, 2018, 234, 337-347, doi:https://doi.org/10.1016/j.apcatb.2018.04.051.

258. J.Bray, G.Collinge, C.Stampfl, Y.Wang, J.S.McEwen, "Predicting the electric field effect on the lateral interactions between adsorbates: O/Fe(100) from the first principles", ***Topics in Catalysis***, 2018, https://doi.org/10.1007/s11244-018-0944-z.

257. J.Bray, A.J.R.Hensley, G.Collinge, F.Che, Y.Wang, J.S.McEwen, "Modeling of the adsorbate coverage distribution over a multi-faceted catalytic grain in the presence of an electric field: O/Fe from first principles", ***Catal.Today***, 2018, 312, 92-104, doi:10.1016/j.cattody.2018.04.016.

256. D.Shi, H.Wang, L.Kovarik, F.Gao, C.Wan, J.Hu, Yong Wang, "WOx supported on γ-Al2O3 with different morphologies as model catalysts for alkanol dehydration", ***J.Catal.***, 2018, https://doi.org/10.1016/j.jcat.2018.04.004.

255. J.Tian, J.Lin, M.Xu, S.Wan, J.Lin, Y.Wang, "Hexagonal boron nitride catalyst in a fixed-bed reactor for exothermic propane oxidation dehydrogenation", ***Chem.Eng.Sci***., 2018, https://doi.org/10.1016/j.ces.2018.04.029.

254. D.Yun, Y.Wang, J.E.Herrera, "Ethanol partial oxidation over VOx/TiO2 catalysts: the role of titania surface oxygen on the vanadia reoxidation in the Mars-van Krevelen mechanism", ***ACS Catalysis***, 2018, DOI: 10.1021/acscatal.7b03327.

253. N.Yu, M.MRahman, J.Chen, J.Sun, M.Engelhard, X.I.P.Hernandez, Y.Wang, "Steam reforming of simulated bio-oil on K-Ni-Cu-Mg-Ce-O/Al2O3: The effect of K", ***Catal.Today***, 2019, 323, 183-190, doi:https://doi.org/10.1016/j.cattod.2018.04.010.

252. A.J.R.Hensley, J.Zhang, I.Vincon, X.P.Hernandez, D.Tranca, G.Seifert, J.S.McEwen, Y.Wang, "Mechanistic understanding of methanol carbonylation: interfacing homogeneous and heterogenous catalysis via carbon supported Ir-La", ***J.Catal***., 2018, https://doi.org/10.1016/j.jcat2018.02.022.

251. F.Wang, W.Li, J.D.Lin, Z.Chen, Y.Wang, "Crucial support effect on the durability of Pt/MgAl2O4 for partial oxidation of methane to syngas", ***Appl.Catal.B: Environmental***, 2018, doi:https://doi.org/10.1016/j.apcatb.2018.03.018

250. A.J.R.Hensley, Y.Wang, D.Mei, and J.S.McEwen, "Mechanistic Effects of Water on the Fe-Catalyzed Hydrodeoxygenation of Phenol. The Role of Brønsted Acid Sites", ***ACS Catalysis***, 2018, doi: 10.1021/acscatal.7b02576.

249. L.Nie, D.Mei, H.Xiong, B.Peng, Z.Ren, X.Hernandez, A.DeLaRiva, M.Wang, M.H. Engelhard, L. Kovarik, A.K. Datye, Y.Wang, "Activation of surface lattice oxygen in single-atom Pt/CeO_2 for low-temperature CO oxidation", ***Science***, 2017, 358, 1419-1423, DOI: 10.1126/science.aao2109.

248. A.J. R. Hensley, C.Wöckel, C.Gleichweit, K.Gotterbarm, C.Papp,H.Steinrück, Y.Wang, R.Denecke, and J.S.McEwen, "Identifying the Thermal Decomposition Mechanism of Guaiacol on Pt(111): An Integrated X-ray Photoelectron Spectroscopy and Density Functional Theory Study", ***J.Phys.Chem.C***., 2017, DOI: 10.1021/acs.jpcc.7b10006.

247. C. Carrillo, H.F. Xiong, A.T DeLaRiva, D. Kunwar, E.J. Peterson, S.R. Challa, G.S. Qi, S. Oh, M.H.Wiebenga, X.I.P. Hernandez, Y. Wang, A.K. Datye, "Designing Catalysts for Meeting the DOE 150° Challenge for Exhaust Emissions", ***Microsc. Microanal***., 2017, 23, 2028-2029, DOI: 10.1017/S1431927617010807.

246. L.Zhang, G.Kong, H.Yang, L.Zhang, S.Wan, J.Lin, and Y.Wang, "Direct coupling of thermo- and photo-catalytic conversion of CO2-H2O to fuels", ***ChemSusChem***, 2017, doi: 10.1002/cssc.201701472R1.

245. J.Song, Y.Wang, E.D. Walter, N.M. Washton, D.Mei, L.Kovarik, M.H. Engelhard, S.Prodinger, Y.Wang, C.H. F. Peden, and F.Gao, "Toward Rational Design of Cu/SSZ-13 Selective Catalytic

Reduction Catalysts: Implications from Atomic-Level Understanding of Hydrothermal Stability", ***ACS Catal***., 2017, 7, 8214-8227.

244. L.Du ,L.Luo, Z.Feng, M.H.Engelhard, X.Xie, B.Han, J.Sun, J.Zhang, G.Yin, C.Wang, Y.Wang, Y.Shao, "Nitrogen-doped graphitized carbon shell encapsulated NiFe nanoparticles: A highly durable oxygen evolution catalyst", ***Nano Energy***, 2017, 39:245-252. 10.1016/j.nanoen.2017.07.006.

243. J.Zhang, B.An,Y.Hong,Y.Meng, X.Hu, C.Wang,J.Lin, W.Lin and Y.Wang, "Pyrolysis of metal–organic frameworks to hierarchical porous Cu/Zn-nanoparticle@carbon materials for efficient CO_2 hydrogenation", ***Materials Chemistry Frontiers***, 2017, doi: 10.1039/C7QM00328E.

242. W.Hu,Y.Wan, L.Zhu, X.Cheng, S.Wan, J.Lin, and Y.Wang, "A Strategy for Simultaneous Synthesis of Methallyl Alcohol and Diethyl Acetal with Sn-β", ***ChemSusChem***, 2017, doi: 10.1002/cssc.201701435.

241. N.Jaeger, Y.Wang, J.Hu, "Development and application of in-situ high temperature, high pressure magic-angle spinning NMR", in Modern Magnetic Resonance, 2nd Ed., 2017.

240. Y.Wan, M.Zhuang, S.Chen, W.Hu, J.Sun, J.Lin, S.Wan, Y.Wang, "One-pot production of lactic acid from acetol over dealuminated Sn-beta supported gold catalyst", ***ACS Catalysis***, 2017, doi:10.1021/acscatal.7b01499.

239. Y.Zheng, L.Kovarik, M.H.Engelhard, Y.Wang, Y.Wang, F.Gao, and J.Szanyi, "Low-temperature Pd/zeolite passiave NOx adsorbers: structure, performance, and adsorption chemistry", ***J.Phys.Chem.C***, 2017, doi:10.1021/acs.jpcc.7b04312.

238. J.Tian, Y.Ke, G.Kong, M.Tan, Y.Wang, J.Lin, W.Zhou, S.Wan, "A novel structured PdZnAl/C fiber catalyst for methanol steam reforming in microreactor", ***Renewable Energy***, 2017, 113, 30-42.

237. B.Lin, Y.Guo, J.Lin, J.Ni, J.Lin, L.Jiang, Y.Wang, "Deactivation study of carbon-supported ruthenium catalyst with potassium promoter", ***Appl.Catal.A: General***, 2017, 541, 1-7, doi: 10.1016/j.apcata.2017.04.020.

236. X.Wang, Z.Lan, Y.Liu, Y.Luo, J.Chen, L.Jiang, Y.Wang, "Facile fabrication of hollow tubular mixed oxides for selective catalytic reduction of NOx at low temperature: a combined experimental and theoretical study", ***Chem.Comm***., 2017, 53, 967-970.

235. Y.Hong, Y.Wang, "Elucidation of reaction mechanism for m-cresol hydrodeoxygenation over Fe based catalysts: A kinetic study", ***Catal.Comm***., 2017, doi: 10.1016/j.catcom.2017.06.028.

234. Y.Hong, S.Zhang, F.Tao, Y.Wang, "Stabilization of iorn-based catalysts against oxidation: an in situ ambient pressure XPS study", ***ACS Catalysis***, 2017, doi: 10.1021/acscatal.7b00636.

233. J.Chen, J.Sun, Y.Wang, "Catalysts for steam reforming of bio-oil: a review", ***Ind.Eng.Chem.Res***., 2017, doi:10.102/acs.iecr.7b00600.

232. F.Bossola, X.I.Pereira-Hernandez, C.Evangelisti, Y.Wang, and V.Dal Santo, "Investigation of the promoting effect of Mn on a Pt/C catalyst for the steam and aquesous phase reforming of glycerol", ***J.Catal***, 2017, doi:10.106/j.jcat.2017.03.002.

231. N.R.Jaegers, C.Wan, M.Y.Hu, M.Y.Hu, M.Vailiu, D.A.Dixon, E.Walter, I.E.Wachs, Y.Wang, J.Hu, "Investigation of silica-supported vanadium oxide catalysts by high field ^{51}V magic-angle spinning NMR", ***J.Phys.Chem.C***., 2017, doi:10.1021/acs.jpcc.7b01658.

230. W.Li, L.Nie, Y.Chen, L.Korarik, J.Liu, Y.Wang, "Surface enrichment of Pt in stable Pt-Ir nano-alloy particles on MgAl2O4 spinel in oxidizing atmosphere", ***Catal.Comm***., 2017, DOI: 10.1016/j.catcom.2017.01.012.

229. W.Li, L.Kovarik, Y.Cheng, L.Nie, M.Bowden, J.Liu, Y.Wang, "Sabilization and transformation of Pt nanocrystals supported on ZnAl2O4 spinel", ***RSC Advances***, 2017, DOI: 10.1039/c6ra26159k.

228. L.Du, C.Du, G.Chen, F.Kong, G.Yin, Y.Wang, "Metal-organic coordination newworks: Prussian Blue and its synergy with Pt Nanoparticles to enhance oxygen reduction kinetics", ***ACS Appl. Mater. Interfaces***, 2016, 8(24), 15250-15257.

227. Prodinger, S., Derewinski, M.A., Wang, Y., Washton, N.M., Szanyi, J., Gao, F., Wang, Y., Peden, H.F.C., "Sub-micron Cu/SSZ-13: synthesis and application as selective catalytic reduction (SRC) catalysts", ***Applied Catalysis B, Environmental***, 2017, 201, 461-469, DOI: 10.1016/j.apcatb.2016.08.053.

226. C.Wan, M.Y.Hu, N.R.Jaegers, D.Shi, H.Wang, F.Gao, Z.Qin, Y.Wang, J.Hu, "Investigating the Surface Structure of γ-Al_2O_3 Supported WO_X Catalysts by High Field ^{27}Al MAS NMR and Electronic Structure Calculations", ***J.Phys.Chem.C***, 2016, DOI: 10.1021/acs.jpcc.6b09060.

225. Q.Cai, J.Wang, Y.Wang, D.Mei, "First-Principles Thermodynamics Study of Spinel MgAl2O4 Surface Stability", ***J.Phys.Chem.C***, 2016, 120, 19087-19096.

224. J.Sun, Q.Cai, Y.Wan, S.Wan, L.Wang, J.Lin, D.Mei, Y.Wang, "Promotional effects of cesium promoter on higher alcohol synthesis from syngas over cesium-promoted $Cu/ZnO/Al_2O_3$ catalysts", ***ACS Catalysis***, 2016, 6, 5771-5785.

223. S.Park, Y.Shao, V.V.Viswanathan, J.Liu, Y.Wang, "Electrochemical study of highly durable cathode with Pt supported on ITO-CNT composite for proton exchange membrane fuel cells", ***Journal of Industrial and Engineering Chemisry***, 2016, doi: dx.doi.org/10.1016/j.jiec.2016.07.039.

222. J.Jones, H.Xiong, A.T. DeLaRiva, E.J. Peterson, H.Pham, S.R. Challa, G.Qi, S.Oh, M.H. Wiebenga, X.Hernández, Y.Wang, A.K. Datye, "Thermallystable single-atom platinum-on-ceria catalysts via atomtrapping", ***Science***, 2016, 353(6295), 150-154.

221. M.Pruski, A.D. Sadow, I. I. Slowing , C. L. Marshall, P.Stair, J.Rodriguez, A. Harris , G. A. Somorjai , J.Biener , C. Matranga, C.Wang , J. A. Schaidle, G.T. Beckham, D.A. Ruddy, T.Deutsch, S.M. Alia , C.Narula, S.Overbury, T.Toops , R. M.Bullock, C.H. F. Peden, Y.Wang* , M.D. Allendorf , J.Nørskov, T.Bligaard, Preface of Virtual Special Issue on Catalysis at the U.S. Department of Energy's National Laboratories, ***ACS Catalysis***, 2016, 3227–3235, DOI: 10.1021/acscatal.6b00823.

220. J.Sun, S.Wan, J. Lin, Y.Wang, "Recent advances in catalytic conversion of syngas to ethanol and higher alcohols", Chapter 8 in *Petrochemical Catalyst Materials, Processes, and Emerging Technologies*, eds. Hamid Al-Megren and Tiancun Xiao. ISBN13: 9781466699755. Feb. 2016.

219. Lei Du, Yuyan Shao, Junming Sun, Geping Yin, Jun Liu, Yong Wang "Advanced catalyst supports for PEM fuel cell cathodes" ***Nano Energy***, 2016, doi:10.1016/j.nanoen.2016.03.016.

218. W.Wang, K.Wu, P.Liu, L.Li, Y.Yang, Y.Wang, "Hydrodeoxygenation of p-Cresol over Pt/Al_2O_3 Catalyst Promoted by ZrO_2, CeO_2, and $CeO_2–ZrO_2$", ***Ind.Eng.Chem.Res***., 2016, DOI:10.1021/acs.iecr.6b00515.

217. R.A.L.Baylon, J.Sun, K.J.Martin, P.Venkitasubramanian, Y.Wang, "Beyond ketonization: selective conversion of carboxylic acids to olefins over balanced Lewis acid-base pairs", ***Chem.Comm***., 2016, doi:10.1039/c5cc10528e. (featured as the back outside cover)

216. Y.Hong and Y.Wang, "Perspective on pyrolysis of biomass: essential roles of Fe based bimetallic catalysts", ***Catal.Lett***. 2016, DOI:10.1007/s10562-016-1770-1 (invited perspective).

215. J.Hu, S.Xu, J.Kwak, M.Hu, C.Wan, Z.Zhao, S.Janos, X.Bao, X.Han, Y.Wang. C.H.F.Peden, "High field ^{27}Al MAS NMR and TPD studies of active sites in ethanol dehydration using thermally treated transitional aluminas as catalysts", ***J.Catal.***, 2016, 336, 85-93.

214. J.Sun, R.A.L.Baylon, C.Liu, D.Mei, K.J.Martin, P.Venkitasubramanian, Y.Wang, "Key roles of Lewis acid-base pairs on ZnxZryOz in direct ethanol/acetone to isobutene conversion", ***J.Am.Chem.Soc***., 2016, 2, 507-517.

213. K.K. Ramasamy, M.Gray, H.Job, C.Smith, Y.Wang, "Tunable Catalytic Properties of Mgo-Al2O3 in Ethanol Conversion to High Value Compounds" ***Catalysis Today***, 2016, 269, 82-87.

212. C.Miao, O.Marin-Flores, S.Davidson, T.Li, D.Tao, D.Gao, Y.Wang, M.Garcia-Perez, S.Chen, "Hydrothermal catalytic deoxygenation of palmitic acid over nickel catalyst", ***Fuel***, 2016, 166(15): 302-308.

211. Y.Shao, Y.Cheng, W.Duan, W.Wang, Y.Lin, Y.Wang*, J.Liu*, "Nanostructured electrocatalysts for PEM fuel cells and redox flow batteries: a selected review", ***ACS Catalysis***, 2015, doi:10.1021/acscatal.5b01737.

210. C.Liu, J.Sun, H.M.Brown, O.G.Marin-Flores, T.Bays, A.M.Karim, Y.Wang, "Aqueous phase hydrodeoxygenation of polyols over Pd/WO_3-ZrO_2: role of Pd-WO_3 interaction and hydrodeoxygenation pathway", ***CatalysisToday***, 2015, doi:10.1016/j.cattod.2015.10.034.

209. A.Hensley, Y.Wang, J.S.McEwen, "Adsorption of Guaiacol on Fe (110) and Pd (111) from First Principles", ***Surface Science***, 2015, doi:10.1016/j.susc.2015.10.030.

208. Z.Wei, A.Karim, Y.Wang, "Elucidation of the roles of Re in aqueous-phase reforming of glycerol over Pt-Re/C catalysts", ***ACS Catalysis***, 2015, doi: 10.1021/acscatal.5b01770.

207. S.Davidson, J.Sun, Y.Wang, "The effect of ZnO addition on H2O activation over Co/ZrO2 catalysts", ***Catal.Today***, 2015, doi: 10.1016/j.cattod.2015.10.016.

206. H.Wang, Y.Wang, "Characterization of deactivated bio-oil hydrotreating catalysts", ***Topics in Catalysis***, 2015, doi:10.1007/s11244-015-0506-6.

205. K.K.Ramasamy, M.Gray, H.Job, D.Santosa, S.X.Li, A.Devaraj, A.Karkamkar, Y.Wang, "Role of calcination temperature on the hydrotalcite derived MgO-Al_2O_3 in converting ethanol to butanol", ***Topics in Catalysis***, 2015. DOI: 10.1007/s11244-015-0504-8.

204. Z.Fang, Y.Wang, D.A.Dixon, "Computational Study of Ethanol Conversion on Al_8O_{12} as a Model for γ-Al_2O_3", ***J.Phys.Chem:C***, 2015, 119:23413-23421, doi:10.1021/acs.jpcc.5b05887.

203. J.Sun, A.Karim, X.Li, Y.Shin, Y.Wang, "Hierarchicaqlly structured catalysts for cascade and selective steam reforming/Hydrodeoxygenation reactions", ***Chem.Comm***, 2015, doi:10.1039/C5CC07244A (selected as the back cover).

202. M.M.Rahman, S.Davidson, J.Sun, Y.Wang,"Effect of water on ethanol conversion over ZnO", ***Topics in Catalysis***, 2015, doi:10.1007/s11244-015-0503-9.

201. J.Sun, S.Wan, F.Wang, J.Lin, Y.Wang, "Selective synthesis of methanol and higher alcohols over Cs/Cu/ZnO/Al_2O_3 catalysts", ***Ind.Eng.Chem.Res***., 2015, doi:10.1021/acs.iecr.5b01927.

200. H.Zhang, J.Sun, C.Liu, Y.Wang, "Distinct water activation on polar/non-polar facets of ZnO nanoparticles", ***J.Catal***, 2015, doi: 10.1016/j.jcat.2015.08.016.

199. A.Hensley, S.Schneider, Y.Wang, J.S.McEwen, "Adsorption of aromatics on the (111) surface of PtM and PtM_3 (M=Ni, Fe) alloys", ***RSC Advances***, 2015, doi:10.1039/c5ra13578h.

198. Z.Chase, A.Vjunov, J.L.Fulton, D.M.Camaioni, M.Balasubramanian, Y.Wang, J.A.Lercher,"State of supported Ni nanoparticles during catalysis in aqueous media", ***Chemistry-A European Journal***, 2015, doi:10.1002/chem.201502723.

197. Y.Ning, J.Sun, Y.Wang, "The effects of ZnO facets on ethanol steam reforming on Co/ZnO", ***Catal.Comm***. 2015, doi:10.1016/j.catcom.2015.10.018.

196. W.Li, F.Gao, Y.Li, J.Liu, C.H.F.Peden, Y.Wang,"Nanocrystalline anatase titania supported vanadia catalysts: facet-dependent structure of vanadia", ***J.Phys.Chem C***, 2015, DOI:10.1021/acs.jpcc.5b01486.

195. J.Sun, H.Zhang, Y.Ning, S.Davideson, Y.Wang, "Effect of cobalt particle size on acetone steam reforming", ***ChemCatChem***, 2015, DOI: 10.1002/cctc.201500336.

194. R.A.L.Baylon, J.Sun, Y.Wang, "Conversion of ethanol to 1,3-butadiene over Na doped $Zn_xZr_yO_z$ mixed metal oxides", ***Catalysis Today***, 2015, doi: 10.1016/j.cattod.2015.04.010.

193. J.Hu, S.Xu, W.Li, M.Hu, X.Deng, D.Dixon, M.Vasiliu, R.Craciun, Y.Wang, X.Bao, C.H.F.Peden, "Investigation of the structure and active sites of TiO_2 nano-ro supported VO_x catalysts by high field and fast spinning ^{51}V MSA NMR", ***ACS Catalysis***, 2015, doi:10.1021/acscatal.5b00286.

192. K.K.Ramasamy, M.Gray, H.Job, Y.Wang, "Direct syngas hydrogenation over a Co-Ni bimetallic catalyst: process parameter optimization", ***Chem.Eng.Sci.***, 2015, doi:10.1016/j.ces.2015.03.064.

191. Y.Li, Z.Wei, F.Gao, L.Korarik, R.Long, C.H.F.Peden, Y.Wang, "Effect of oxygen defects on the catalytic performance of VO_x/CeO_2 catalysts for oxidative dehydrogenation of methanol", ***ACS Catalysis***, 2015, DOI 10.1021/cs502084g.

190. J.D.Holladay, Y.Wang, "3-D model of a radial flow sub-watt methanol fuel processor", ***Chem.Eng.Sci***., 2015, 10.1016/j.ces.2015.02.012.

189. J.D.Holladay, Y.Wang, "A review of recent adances in numerical simulations of microscale fuel processor for hydrogen production", ***Journal of Power Sources***, 2015, http://dx.doi.org/10.1016/j.jpowsour.2015.01.079.

188. Y.Shao, N.Rjput, J.Hu, M.Hu, T.Liu, Z.Wei, M.Gu, X.Deng, S.Xu, K.S.Han, J.Wang, Z.Nie, G.Li, K.R.Zavadil, J.Xiao, C.Wang, W.A.Henderson, J.G.Zhang, Y.Wang, K.T.Mueller, K.Persson, J.Liu, "Nanocomposite polyer electrolyte for rechargeable magnesium batteries", ***Nano Enery***, 2014, doi:10.1016/j.nanoen.2014.12.028.

187. A.J.R.Hensley, Y.Wang, J.S.McEwen, "Phenol deoxygenation mechanisms on Fe(110) and Pd(111)", ***ACS Catalysis***, 2014, DOI: 10.1021/cs501403w.

186. Z.Wei, A.Karim, Y.Li, D.L.King, Y.Wang, "Elucidation of the roles of Re in steam reforming of glycerol over Pt-Re/C catalysts", ***J.Catal***., 2014, doi:10.1016/j.jcat.2014.11.006. (editor's choice)

185. V.M.Dagle, R.A.Dagle., J.Li, C.Deshmane, D.E.Taylor, X.Bao, Y.Wang, "Direct conversion of syngas-tohydrocarbons over higher alcohols synthesis catalysts mixed with HZSM-5", ***Ind.Eng.Chem.Res***., 2014, 53 (36), pp 13928-13934.

184. A.J.Hensley, Y.Wang, J.S.McEwn, "Adsorption of Phenol on Fe (110) and Pd (111) from First Principles", ***Surface Science***, doi: 10.1016/j.susc.2014.08.003.

183. W.Li, L.Kovarik, D.Mei, M.H.Engelhard, F.Gao, J.Liu*, Y.Wang*, C.H.F.Peden*, "A general mechanism for stabilizing the small sizes of precious metal nanoparticles on oxide supports", ***Chemistry of Materials***, 2014, doi: dx.doi.org/10.1021/cm5013203.

182. J.Sun, A.Karim, D.Mei, M.Engelhard, X.Bao, Y.Wang,"New insight into reaction mechanism of ethanol steam reforming on Co-ZrO2", ***Appl.Catal.B: Environmental***, 2014, doi:10.1016/j.apcatb.2014.06.043

181. A.J.R.Hensley, Y.Hong, R.Zhang, H.Zhang, J.Sun, Y.Wang*, J.S.McEwen*, "Enhanced Fe_2O_3 reducibility via surface modivication with Pd: characterizing the synergy within Pd/Fe catalysts for hydrodeoxygenation reactions", ***ACS Catalysis***, 2014, doi: dx.doi.org/10.1021/cs500565e.

180. Y.Hong, H.Zhang, J.Sun, A.M.Karim, A.J.R.Henley, M.Gu, M.H.Engelhard, J.S.McEwen, Y.Wang, "Synergistic catalysis between Pd and Fe in gas phase hydrodeoxygenation of m-cresol", ***ACS Catalysis***, 2014, doi: dx.doi.org/10.1021/cs500578g (cover of the Oct issue).

179. H.Zhang, J.Sun, V.L.Dagle, B.Halevi, A.Datye, Y.Wang, "The influence of ZnO facets on Pd/ZnO catalysts for methanol steam reforming", ***ACS Catalysis***, 2014, 4, 2379-2386, doi: dx.doi.org/10.1021/cs500590t.

178. H.Xiong, A.Riva, Y.Wang, A.Datye, "Low-temperature aqueous-phase reforming of ethanol for CO-free H_2 production on bimetallic PdZn catalyst", ***Catalysis Science & Technology***, 2014, doi: 10.1039/c4cy00914b.

177. A.K.Dalai, Y.Wang, Preface, ***Catalysis Today***, 2014, 237, 1-2.

176. S.Wan and Y.Wang, "A review on *ex situ* catalytic fast pyrolysis of biomass", ***Frontiers of Chemical Science and Engineering***, 2014, 8 (3): 280–294. DOI: 10.1007/s11705-014-1436-8 (invited review).

175. Y.Yang, J.S.Dennis, M.Saeys, Y.Wang, Preface, ***Catalysis Today***, 2014, 233, 1.

174. Y.Li, Z.Wei, Y.Wang, "Ni/MgO Catalyst Prepared via Dielectric-Barrier Discharge Plasma with Improved Catalytic Performance for Carbon Dioxide Reforming of Methane", ***Frontiers of Chemical Sciences and Engineering***, 2014, doi: 10.1007/s11705-014-1422-1.

173. O.G.Marin-Flores, A.Karim, Y.Wang, "Role of tungsten in the aqueous phase hydrodeoxygenation of ethylene glycol on tungstated zirconia supported palladium", ***Catalysis Today***, 2014, 237, 118-124, doi: 10.1016/j.cattod.2014.03.068.

172. C.Liu, H.Wang, A.Karim, J.Sun, Y.Wang, "Advances in catalytic pyrolysis of lignocellulosic biomass", ***Chem.Soc.Rev***. 2014, 43(22), 7594-7623 (inside cover of the Nov. issue).

171. K.Ramasamy, Y.Wang, "Ethanol conversion on HZSM-5: effect of reaction conditions and Si/Al ratio on the product distributions", ***Catalysis Today***,2014, 237, 89-99, doi:10.1016/j.cattod.2014.02.044.

170. Y.Li, Z.Wei, F.Gao, L.Kovarik, C.H.F.Peden, Y.Wang, "Effects of CeO_2 Support Facets on VO_x/CeO_2 Catalysts in Oxidative Dehydrogenation of Methanol", ***J.Catal***., 2014, doi:10.1016/j.jcat.2014.04.013.

169. S.Davison, J.Sun, H.Zhang, Y.Wang, "Supported metal catalysts for alcohol/sugar alcohol steam reforming", ***Dalton Transactions***, 2014, DOI:10.1039/c4dt00521j (invited perspective, cover of the issue 31 of 2014).

168. K.Ramasamy, H.Zhang, J.Sun, Y.Wang, "Performance of hierarchical HZSM-5 for the conversion of ethanol to hydrocarbon", ***Catalysis Today***, 2014, DOI:10.1016/j.cattod.2014.1001.1037.

167. J.Sun, Y.Wang, "Review of ethanol conversion to chemicals and fuels", ***ACS Catalysis***, 2014, dx.doi.org/10.1021/cs4011343. (featured on cover of the 2014 April issue).

166. J.Kwak, R.Dagel, G.Tustin, J.Zoeller, L.Allard, Y.Wang, "Molecular active sites in heterogeneous Ir-La/C catalyzed carbonylation of methanol to acetates", ***J.Phys.Chem.Lett***. 2014, dx.doi.org/10.1021/jz402728e.

165. S.Davidson, J.Sun, Y.Wang, "The effect of ZnO addition on Co/C catalyst for vapor and aqueous phase reforming of ethanol", ***Catal.Today***, 2014, dx.doi.org/10.1016/j.cattod.2013.12.044.

164. A.J.Hensley, R.Zhang, Y.Wang, J.S.McEwen, "Energetic and electronic interactions between benzene and PdFe surfaces: a density functional theory study", ***J.Phys.Chem.C*** 2013, 117, 24317-24328.

163. W.Li, L.Kovarik, D.Mei, J.Liu,Y.Wang, C.H. F.Peden, "Anti-sintering Pt nanoparticles stabilized by $MgAl_2O_4$ spinel {111} facets", ***Nature Comm.***, 2013, DOI: 10.1038/ncomms3481.

162. Z.Chase, J.Fulton, D.Camaioni, D.Mei, M.Balasubramanian, V.Pham, C.Zhao, R.Weber, Y.Wang, J.Lercher, "State of Supported Pd during Catalysis in Water", ***J.Phys.Chem.C***, 2013, DOI: 10.1021/jp404772p.

161. K.K.Ramasamy, M.A.Gerber, M.Flake, H.Zhang, Y.Wang, "Conversion of biomass-derived small oxygenates over HZSM-5 and its deactivation mechanism", ***Green Chemistry***, 2013, DOI: 10.1039/c3gc41369a.

160. C.J.Liu, J.Sun, C.Smith, Y.Wang, "A study of $Zn_xZr_yO_z$ mixed oxides for direct conversion of ethanol to isobutene", ***Appl.Catal.A: General***, 2013, doi:10.1016/j.apcata.2013.07.011.

159. V.M.Lebarbier, R.A.Dagle, L.Kovarick, K.O.Albrecht, C.E.Taylor, X.Bao, Y.Wang, "Sorption-enhanced synthetic natural gas from syngas: a novel process combining CO methanation, water-gas-shift, and CO_2 capture", ***Appl.Catal.B: Environmental***, 2013, DOI: 10.1016/j.apcatb.2013.06.034.

158. J.Sun, A.M.Karim, H.Zhang, L.Kovarik, X.Li, J.S.McEwen, A.J.Hensley, Y.Wang, "Vapor phase hydrodeoxygenation of guaiacol on carbon supported metal catalysts", ***J.Catal.***, 2013, doi:10.1016/j.jcat.2013.05.020.

157. B.Halevi, S.Lin, A.Roy, H.Zhang, E.Jeroro, J.Vohs, Y.Wang, H.Guo, A.Datye, "High CO2 selectivity of ZnO powder catalysts for methanol steam reforming", ***J.Phys.Chem.C***, 2013, 117(13): 6493-6503.

156. X.Yan, Y.Liu, B.Zhao, Y.Wang,and C.J. Liu, "Enhanced sulfur resistance of Ni/SiO_2 catalyst for methanation via the plasma decomposition of nickel precursor", ***Phys.Chem.Chem.Phys.***, 2013, DOI: 10.1039/C3CP50694K.

155. R.A.Dagle, J.Hu, S.B.Jones, W.Wilcox, J.G.Frye, J.F.White, Y.Wang,"Carbon dioxide conversion into valuable chemical products over composite catalytic systems", ***Journal of Energy Chemistry***, 2013, 22(3): 368-374.

154. C.Liu, J.Sun, V.Lebarbier, A.Karim, Y.Wang, "Vapor phase ketonization of acetic acid on ceria based metal oxides", ***Topics in Catalysis***, 2013, doi:10.1007/s11244-013-0114-2.

153. H.Wang and Y.Wang,"Biomass to bio-oil by liquefaction", Chapter 8 in *Biomass Processing, Convesion and Biorefinery*, B.Zhang and Y.Wang, eds., ISBN: 978-1-62618-346-9, 2013 (Nova Science Publishers).

152. C.Liu and Y.Wang, "Biofuel and bio-oil upgrading", Chapter 13 in *Biomass Processing, Convesion and Biorefinery*, B.Zhang and Y.Wang, eds., ISBN: 978-1-62618-346-9, 2013 (Nova Science Publishers).

151. O.Marin-Flores, A.L.Tonkovich, Y.Wang, "Biodiesel Production", Chapter 14 in *Biomass Processing, Convesion and Biorefinery*, B.Zhang and Y.Wang, eds., ISBN: 978-1-62618-346-9, 2013 (Nova Science Publishers).

150. K.K.Ramasamy and Y.Wang, "Thermochemical conversion of fermentation-derived oxygenates to fuels", Chapter 17 in *Biomass Processing, Convesion and Biorefinery*, B.Zhang and Y.Wang, eds., ISBN: 978-1-62618-346-9, 2013 (Nova Science Publishers).

149. S.Davidson, J.Sun, Y.Wang, "Ethanol steam reforming on Co/CeO_2: the effect of ZnO promoter", ***Topics in Catalysis***, 2013, doi: 10.1007/s11244-013-0103-5.

148. H.Wang, J.Male, Y.Wang, "Recent advances in hydrotreating of pyrolysis bio-oil and its oxygen-containing model compounds", ***ACS Catalysis***, 2013, 3, 1047-1070, dx.doi.org/10.1021/cs400069z (invited review).

147. Y.Li, Z.Wei, J.Sun, F.Gao, C.H.F.Peden, Y.Wang, "The effect of sodium on the catalytic properties of VOx/CeO2 catalysts for oxidative dehydrogenation of methanol", ***J.Phys.Chem.C*** 2013, 117(11):5722-5729. doi:10.1021/jp310512m.

146. X.Yan, Y.Liu, B.Zhao, Y.Wang, C.J.Liu, "Methanation over Ni/SiO_2: Effect of the Catalyst Preparation Methodologies", ***International Journal of Hydrogen Energy,*** Volume 38, Issue 5, 2013 2283-2291.

145. K.K.Ramasamy, Y.Wang, "Catalyst activity comparison of alcohols over zeolites", ***Journal of Energy Chemistry,*** 2013, 22(1)65-71, dx.doi.org/10.1016/s2095-4956(13)600008-X.

144. H.Zhao, B.Zhao, X.Yan, Y.Liu, Y.Wang, C.J.Liu,"Ni/SiO_2 catalyst for CO methanation with support treated by dielectric barrier discharge plasma", ***CIESC Journal***, DOI:10.3969/j.issn.0438-1157.2013.01.004, 2013, 64(1): 283-288.

143. J.Sun, D.Mei, A.Karim, A.Datye, Y.Wang, "Minimizing the formation of coke and methane on Co nanoparticles in steam reforming of biomass-derived oxygenates", ***ChemCatChem.*** 2013, 5(6), 1299-1303DOI:10.1002/cctc.201300041.(cover page featured in the June issue).

142. Y.Shao, F.Ding, J.Xiao, J.Zhang, W.Xu, S.Park, J.Zhang, Y.Wang, J.Liu,"Making li-air batteries rechargeable: material challenge", ***Advanced Functional Materials***, 2013, 23(8):987-1004. doi:10.1002/adfm.201200688.

141. A.Karim, C.Howard, B.Roberts, L.Kovarik, L.Zhang, D.L.King, Y.Wang, "in situ EXAFS studies on the effect of pH on Pt electronic density during aqueous phase reforming of glycerol", ***ACS Catalysis***, DOI:10.1021/cs3005049, 2012, 2, 2387-2394.

140. Z.Wei, J.Sun, H.Zhang, Y.Li, Y.Wang, "Bimetallic nanocatalysts hydrogen generation", ***Chem.Soc.Review*** 2012, DOI:10.1039/C2CS35201J (invited review).

139. S.Park, Y.Shao, J.Liu, Y.Wang, "Oxygen electrocatalysts for water electrolyzers and reversible fuel cells: status and perspective", ***Energy & Environmental Science*** DOI:10.1039/c2ee22554a (invited review).

138. K.Zhu, J.Sun, H.Zhang, J.Liu, Y.Wang, "Carbon as a hard template for nano material catalysts", ***J.Natural Gas Chemistry***, 2012, 21(3): 215-232 (invited review).

137. X.She, J.H.Kwak, J.Sun, J.Hu, M.Y.Hu, C.Wang, C.H.F.Peden, Y.Wang, "A comparative study of SBA-15 mesoporous silica supported tungsten oxide and rhenium oxide catalysts for 2-butanol dehydration", ***ACS Catalysis***, 2012, 2(6), 1020-1026, DOI:10.1021/cs2006444.

136. B.Halevi, E.J.Peterson, A.Roy, A.DeLariva, E.Jeroro, F.Gao, Y.Wang, J.M.Vohs, B.Kiefer, E.Kunkes, M.Havecker, MBehrens, R.Schlogl, A.Datye, "Catalytic reactivity of face centered cubic PdZnα for the steam reforming of methanol", ***J.Catal.***, 2012, 291, 44-54, doi:10.1016/j.jcat.2012.04.002.

135. Y.Shao, S.Park, J.Xiao, J.Zhang, Y.Wang, J.Liu, "Electrocatalysts for nonaqueous lithium-air batteries: status, challenges, and perspective", ***ACS Catalysis***, 2012, 2, 844-857, dx.doi.org/10.1021/cs300036v (invited review).

134. D.Mei, A.Karim, Y.Wang, "On the reaction mechanism of acetaldehyde decomposition on Mo(110)", ***ACS Catalysis***, 2012, DOI:10.1021/cs3000039.

133. S.Park, Y.Shao, V.V.Viswanathan, S.Towne, P.C.Rieke, J.Liu, Y.Wang,"Non-kinetic losses caused by electrochemical carbon corrosion in PEM fuel cells", ***J.Hydrogen Energy***, 2012, dx.doi.org/10.1016/j.ijhydene.2012.02.097.

132. S.L.Candelaria, Y.Shao, Y.Zhou, X.Li, J.Xiao, J.Zhang, Y.Wang, J.Liu, J.Li, G.Cao, "Nanostructured carbon for energy storage and conversion", ***Nano Energy***, 2012, 1, 195-220.

131. S.Park, Y.Shao, H.Wan, V.V.Viswanathan, S.A.Towne, P.C.Rieke, J.Liu, Y.Wang, "Degradation of ionic pathway in PEM fuel cell cathode", ***J.Phys.Chem.C,*** 2011, 115(45), pp22633-22639, doi: 10.1021/jp2068599.

130. J.Hu, J.H.Kwak, Y.Wang, M.Y.Hu, R.V.Turcu, C.H.F.Peden, "Characterizing surface acidic sites in mesoporous silica supported tungsten oxide catalysts using solid state NMR and quantum chemistry calculations", ***J.Phys.Chem.C***,2011, doi:10.1021/jp203813f.

129. VMC Lebarbier, D Mei, DH Kim, A Andersen, JL Male, JE Holladay, RJ Rousseau, and Y Wang. 2011. "Effects of La2O3 on the mixed higher alcohols synthesis from syngas over Co catalysts: A combined theoretical and experimental study." ***J.Phys.Chem.C*** 115(35):17440-17451. doi:10.1021/jp204003q.

128. J.Hu, J.A.Sears, H.S.Mehta, J.J.Ford, J.H.Kwak, K.Zhu, Y.Wang, J.Liu, C.H.F.Peden, D.W.Hoyt, "A large sample volume magic angle spinning nuclear magnetic resonance probe for in situ investigations with constant flow of reactants", ***Phys.Chem.Chem.Phys***.2011, DOI: 10.1039/C1CP22692D.

127. L.Zhang, A.M.Karim, Z.Wei., D.L.King, Y.Wang, "Correlation of Pt-Re surface property with reaction pathways in aqueous phase reforming of glycerol", ***J.Catal***. (2012), doi:10.1016/j.jact.2011.11.015.

126. V.M.Lebarbier, A.M.Karim, M.H.Engelhard, Y.Wu, B-Q Xu, E.Petersen, A.K.Datye, Y.Wang, "The effect of Zn addition on oxidation state of cobalt for Co/ZrO2 catalysts", ***ChemSusChem***, 2011, 4(11) pp1679-1684. Doi:10.1002/cssc.201100240.

125. W.Liu, Y.Wang, W.Wilcox, S.Li, "Multi-scale structured Fixed Bed Catalytic Reactor for Gas to Liquid Conversion", ***AIChE J***., 2011, DOI:10.1002/aic.12797.

124. J.Sun, K.Zhu, F.Gao, C.Wang, J.Liu, C.H.F.Peden, Y.Wang, "Direct conversion of bio-ethanol to isobutene on nanosized ZnxZrxOz mixed oxides with balanced acid-base sites", ***J.Am.Chem.Soc.***, 2011, 133(29) pp11096-11099, DOI: 10.102/ja204235v.

123. D.Mei, A.M.Karim, Y.Wang, "Density functional theory study of acetaldehyde hydrodeoxygenation on MoO3", ***J.Phys.Chem.C***, 2011, 115 (16), pp8155-8164, DOI: 10.1021/jp200011j.

122. K.Zhu, J.Sun, J. Liu, Q.Wang, H.Wan, J.Hu, Y.Wang, C.H.F.Peden, Z.Nie, "Solvent evaporation assisted preparation of oriented nanocrystallilne mesoporous MFI zeolites", ***ACS Catalysis***, 2011, 1(7) 682-690, DOI: 10.1021/cs200085e.

121. X.She, H.M.Brown, X.Zhang, B.K.Ahring, and Y.Wang, "Selective hydrogenation of trans, tans-muconic acid to adipic acid over supported rhenium catalysts", ***ChemSusChem***, 2011, doi:10.1002/cssc.201100020.

120. R.Kou, Y.Shao, D.Mei, Z.Mie, D.Wang, C.Wang, V.V.Viswanathan, S.Park, I.A.Aksay, Y.Lin, Y.Wang, J.Liu, "Stabilization of electrocatalysts at metal-metal oxide-graphene triple junction points: an experimental and theoretical study", ***J.Am.Chem.Soc***,2011, dx.doi.org/10.1021/ja107719u.

119. A.M.Karim, Y.Su, M.H.Engelhard, D.L.King, Y.Wang, "Catalytic roles of Co^0 and Co^{2+} during steam reforming of ethanol on Co/MgO catalysts", ***ACS Catalysis***, 2011, dx.doi.org/10.1021/cs200014j.

118. S.Park, Y.Shao, V.V.Viswanathan, S.Towne, P.C.Rieke, J.Liu, Y.Wang, "Polarization losses under accelerated stress test using multiwalled-carbon-nanotube supported Pt catalyst in PEM fuel cells", ***J.Electrochemical Society*** 158 (3) (2011) B297-302.

117. S.Park, Y.Shao, H.Wan, P.C.Rieke, V.V.Viswanathan, S.Towne, L.V.Sarf, J.Liu, Y.Lin, Y.Wang, "Design of grapheme sheets-supported Pt catalyst layer in PEM fuel cells", ***Electrochemistry Communications***, 13 (2011) 258-261.

116. L.Zhang, G.Xia, Y.Yang, D.Heldebrant, D.L.King, Y.Wang, L.Allard, "Morphological and Electronic Structure of Pt-Re Nanoparticles Supported on Carbon under Activation and Reaction Conditions

for Aqueous-Phase Reforming of Bioliquid", ***Microscopy and Microanalysis***, 16 (2010) 1454-1455.

115. B.Halevi., E.J. Peterson, A. Delariva, E. Jeroro, V.M. Lebarbier, Y. Wang, J.M. Vohs, B. Kiefer, E. Kunkes, M. Havecker, M. Behrens, R. Sehlogl, and A.K. Datye, "Aerosol-Derived Bimetallic Alloy Powders: Bridging the Gap", ***Journal of Physical Chemistry* C**, 114(40) (2010) 17181-17190.
114. D.L.King, L.Zhang, G.Xia, A.M.Karim, D.J.Heldebrant, X.Wang, T.Peterson, and Y.Wang, "Aqueous phase reforming of glycerol for hydrogen production over Pt-Re supported on carbon", ***Appl.Catal B: Environmental***, 99 (2010) 206-213.
113. X.Wang, J.S. Lee, Q. Zhu, J. Liu, Y. Wang, S. Dai, "Ammonia-treated Ordered Mesoporous Carbons as Ultrastable Catalytic Materials for Oxygen Reduction Reaction), ***Chem.Mater*** 22(7) (2010) 2178-2180.
112. V.Lebarbier, R.A.Dagle, A.Datye, Y.Wang, "The effect of PdZn particle size on reverse-water-gas-shift reaction", ***Appl.Catal. A: General***. 379 (2010) 3-6.
111. Y.Wang and A.Gaffney, Preface, ***Catalysis Today***, 156(1-2) (2010) 1.
110. A.M.Karim, Y.Su, J.Sun, C.Yang, J.J.Strohm, D.L.King, and Y.Wang, "A comparative study between Co and Rh for steam reforming of ethanol", ***Appl. Catal.B: Environmental*** 96 (2010) 441-448.
109. S.Zhang, Y.Shao, X.Li, Z.Nie, Y.Wang, J.Liu, G.Yin, Y.Lin, "Low-cost and durable catalyst support for fuel cells: graphite submicronparticles", ***J.Power.Sources***, 195 (2) (2010) 457-460.
108. Y.Shao, S.Zhang, M.H.Engelhard, G.Li,G.Shao, Y.Wang, J.Liu, I.A.Aksay, Y.Lin, "Nitrogen-doped grapheme and its electrochemical applications", ***J.Mater.Chem***., 20 (2010) 7491-7496.
107. Y.Shao, S.Zhang, R.Kou, X.Wang, C.Wang, S.Dai, V.Viswanathan, J.Liu, Y.Wang, Y.Lin, "Noncovalently functionalized graphitic mesoporous carbon as a stable support of Pt nanoparticles for oxygen reduction", ***J.Power Sources***, 195 (7) (2010) 1805-1811.
106. Y.Shao, S.Zhang, C.Wang, Z.Nie, J.Liu, Y.Wang, Y.Lin, "Highly durable graphene nanoplatelets supported Pt nanocatalysts for oxygen reduction", ***J.Power.Sources*** 195 (2010) 4600-4605.
105. L.Li, d.L.King, J.Liu.Q.Hou, K.Zhu, C.Wang, M.Gerber, D.Stevens, Y.Wang, "Stabilization of Metal Nanoparticles in Cubic Mesostructure Silica and Its Application in Regenerable Deep Desulfurization of Warm Syngas", ***Chem.Mater***., 21 (22) (2009)5358-5364.
104. J.Lee, D.Lee, K.Y.Lee, and Y.Wang, "Cr-free Fe-based metal oxide catalysts for high temperature water gas shift reaction of fuel processor using LPG", ***Catal.Today*** 146 (1-2) (2009) 260-264.
103. M.P.Hyman, V.Lebarbier, Y.Wang, A.Datye, J.M.Vohs, "A Comparison of the Reactivity of Pd Supported on ZnO (1010) and ZnO(0001)", ***J.Phys.Chem.:C*** 131 (2009) 7251-7259.
102. Y.Shao, J.Wang, R.Kou, J.Liu, Y.Wang, Y.Lin. "The durability dependence of Pt/CNT electrocatalysts on the nanostructures of carbon nanotubes: hollow- and bamboo-CNTs", ***J. Nanoscience and Nanotechnology*** 9 (10) (2009) 5811-5815.
101. R.Kou, Y.Shao, D.Wang, M.H. Engelhard, J.Kwak, J.Wang, V.V. Viswanathan, Y.Lin, Y.Wang, I.A. Aksay, J.Liu, "Functionalized Graphene Sheets Supported Pt Nanoparticles as Novel Cathode Electrocatalysts for Proton-Exchange Membrane Fuel Cells", ***Electrochemistry Communications***, 11(5) (2009) 954-957.
100. K.Zhu, X.She, J.Hu, Z.Nie, J.Liu, Y.Wang, C.. H. F. Peden, J. Kwak, "Dispersing and Characterization of Polyoxometalates on Mesoporous Zeolite", ***J.Am.Chem.Soc***. 131(28) (2009) 9715-9721.

99. X.She, M.Flytzani-Stephanopoulos, C.Wang, Y.Wang, C.H.F.Peden, "SO2-induced stability of Ag-alumina catalysts in the SCR of NO with methane", ***Appl.Catal.B: Environmental*** 88 (2009) 98-105.

98. W.Liu, D.L.King, J.Liu, B.Johnson, G.Yang, Y.Wang, "Critical Material and Process Issues for CO_2 Separation from Coal-Powered Plants", *JOM.* ***The Journal of the Minerals, Metals, and Materials Societry***, 61(4) (2009) 36-44.

97. Y.Shao, J.Wang, R.Kou, M.Engelhard, J.Liu, Y.Wang, Y.Lin. "The corrosion of PEM fuel cell catalyst supports and its implications for developing durable catalysts", ***Electrochimica Acta*** 54 (11) (2009) 3109-3114.

96. J.Hu, J.A. Sears, J.Kwak, D.W. Hoyt, Y.Wang and C.H. F. Peden, "An Isotropic Chemical Shift-Chemical Shift Anisotropic Correlation Experiment Using Discrete Magic Angle Turning", ***J.Magn.Reson.*** doi: 10.1016/j.jmr.2009.01.027.

95. J. Hu, J.Kwak, Y.Wang, C.H.F.Peden, H.Zheng, D.Ma, and X.Bao,"Studies of the Active Sites for Methane Dehydroaromatization Using Ultra-High Field Solid State ^{95}Mo NMR Spectroscopy", ***J.Phys.Chem: C*** 113 (2009) 2936-2942.

94. Y.Wang and A.Gaffney, preface, ***Catalysis Today***, 140 (2009) 117.

93. W.Liu, J.Hu, and Y.Wang "Tailoring of Fischer-Tropsch Product Distributions Using a Monolithic Reactor", ***Catalysis Today***. 140 (2009) 142-148.

92. A.Platon and Y.Wang "Chapter 6. Water-gas shift technologies" in "Hydrogen and syngas production and purification technologies" ed. K.Liu, C.Song, V.Subramani, published online: Nov 30, 2009, DOI:10.1002/9780470561256.ch6.

91. J.Cao, J.Hu, S.Li, C.Chin, W.Wilcox, and Y.Wang "Intensified Fischer-Tropsch Synthesis Process Using Microchannel Catalytic Reactors," ***Catal.Today*** 140 (2009) 149-156.

90. Y.Shao, J.Liu, Y.Wang, Y.Lin, "Novel Catalyst Support Materials for PEM Fuel Cells: Current Status and Future Prospects", ***J.Mater.Chem.*** 19 (1) (2009) 46-59.

89. J.D.Holladay, J.Hu, D.L.King, Y.Wang, "An overview of hydrogen production technologies", ***Catal.Today*** 139 (2009) 244-260.

88. Y.Shao, R.Kou, J.Wang, J. Kwak, V.Viswanathan, Y.Wang, J.Liu, Y.Lin. "Fast test for the durability of PEM fuel cell catalyst". ***ECS Transactions***, 16(2) (2008) 361-366.

87. J.E. Herrera, J.H.Kwak, J.Z.Hu, Y.Wang, C.H.F. Peden, "Effects of novel supports on the physical and catalytic properties of tungstophosphoric acid for alcohol dehydration reactions" ***Topics in Catalysis***, 49 (2008) 259-267.

86. V. Lebarbier, R. Dagle, T. Conant, J.M. Vohs, A. Datye, Y. Wang, "CO/FTIR Spectroscopic Characterization of Pd/ZnO/Al_2O_3 catalysts and Its Correlation with Methanol Steam Reforming", ***Catal.Letts.*** 122(3&4) (2008) 223-227.

85. D.L.King, J.J.Strohm, X.Q.Wang, H.S.Roh, C.M.Wang, Y.H.Chin, Y.Wang, Y.B.Lin, R.Rozmiarek, P.Singh, "Effect of nickel microstructure on methane steam-reforming activity of Ni-YSZ cermet anode catalysts", ***J.Catal.*** 258 (2) (2008) 356-365.

84. Y. Shao, R. Kou, J. Wang, V.V. Viswanathan, J.H. Kwak, J.Liu, Y.Wang, Y. Lin, "The influence of the electrochemical stressing (potential step and potential-static holding) on the degradation of PEM fuel cell electrocatalysts", ***J.Power Sources*** 185 (2008) 280-286.

83. T.Conant, A.M. Karim, V.Lebarbier, Y.Wang, F.Girgsdies, R.Schlögl, and A. Datye, "Highly stable bimetallic PdZn catalysts for the steam reforming of methanol", ***J.Catal.*** 257(1) (2008) 64.

82. R.A. Dagle, A.Platon, D.R. Palo, A.K.Datye, J.M.Vohs, Y.Wang, "PdZnAl Catalysts for the Reactions of Water-Gas-Shift, Methanol Steam Reforming, and Reverse-Water-Gas-Shift", ***Appl.Catal. A: General***. 342 (2008) 63-68.

81. H.Zheng, M.Ding, X.Bo, J.Hu, J.Kwak, C.H.F.Peden, Y.Wang, "Direct observation of active center for methane aromatization reaction using an ultra-high field ^{95}MoNMR", ***J.Am.Chem.Soc***. 130 (2008) 3722-3723.

80. B.C. Gates, G.W.Huber, C.L. Marshall, P.N. Ross, J.Siirola, Y.Wang, "Catalysts for Emerging Energy Applications", ***MRS Bull.***, Vol. 33, No. 4 (April 2008) pp. 249–488.

79. H.Roh, Y.Wang, D.L.King, "Selective production of hydrogen from bio-ethanol at low temperatures over Rh/CeO_2-ZrO_2 catalysts", ***Topics in Catalysis***, 49(1&2) (2008) 32-37.

78. R.A.Dagle, C.Chin, Y.Wang, "The effects of PdZn crystallite size on methanol steam reforming", ***Topics in Catalysis***, 46 (2007) 358-362.

77. A.Platon, H.Roh, D.L.King, Y.Wang, "Deactivation studies of ethanol steam reforming catalysts", ***Topics in Catalysis*** 46 (2007) 374-379.

76. E. Jeroro, V. Lebarbier, A. Datye, Y. Wang and J. M. Vohs, "Interaction of CO with Surface PdZn Alloys" ***Surf.Sci***. 601 (2007) 5546-5554.

75. R.J.Chmentao, J.E.Herrera, J.H.Kwak, F.Medina, Y.Wang, C.H.F.Peden, "Oxidation of Ethanol to Acetaldehyde over Na-promoted vanadium oxide catalysts", ***Appl.Catal.A:General*** 332(2) (2007) 263-272.

74. C.Cao, D.P.Palo, A.L.Y.Tonkovich, Y.Wang, "Catalyst screening and kinetic studies using microchannel reactors", ***Catalysis Today*** 125 (2007) 29-33.

73. R.A.Dagle, D.Palo, G.Xia, J.Holladay, Y.Wang, "Selective CO methanation catalysts for mciroscale fuel processing applications", ***Appl.Catal. A: General***: 326 (2007) 213-218.

72. H.Zao, J.H.Kwak, Y.Wang, J.A.Franz, J.M.White, J.E.Holladay, "Interactions between cellulose and n-methylmorpholine-N-oxide", ***Carbohydrate Polymers*** 67(1) (2007) 97-103.

71. Y.Wang, K.Y.Lee, S.Choi, J.Liu, L.Q.Wang, C.H.F.Peden, "Grafting sulfated zirconia on mesoporous silica", ***Green Chemistry***, 9 (2007) 540-544.

70. Y.Wang, D.L.King, preface of ***Catal. Today*** 120(1) (2007) 1.

69. Cao C, JF White, Y Wang, and JG Frye. 2007. "Selective Hydrogenolysis of Sugar Alcohols Over Stuctured Catalysts." In Catalysis of Organic Reactions, vol. 115, pp. 289-291. CRC Press-Taylor & Francis Group, Boca Raton, FL.

68. B.R.Johnson, N.L.Canfield, D.N.Tran, R.A.Dagle, Y.Wang, "Hydrothermally Stable and Active Engineered Porous Ceramic Catalysts for Steam Methane Reformation", ***Catal.Today*** 120(1) (2007) 54-62.

67. J.Hu,Y.Wang, C.Cao, D.C.Elliott, D.J.Stevens, J.F.White, "Conversion of biomass-derived syngas to alcohols and C2 oxygenates using supported Rh catalysts in a microchannel reactor", ***Catal.Today*** 120 (2007) 90-95.

66. A.L.Y.Tonkovich, B.Yang, S.T.Perry, S.P.Fitzgerald, Y.Wang, "From milliseconds to microseconds: changing the microchannel reaction paradigm", ***Catal.Today***.120(1) (2007) 21-29.

65. J.Hu, G.Xia, J.F.White, T.H.Peterson, Y.Wang, "Biphasic catalytic oxidation of hydrocarbons using immobilized homogeneous catalyst in a microchannel reactor," In ***Catalysis of Organic***

Reactions, chemical Industry Series, vol. 115, ed. SR Schmidt. CRC Press, Boca Raton, FL. (2006).

64. Y.H.Chin, D.L.King, H.S.Roh, Y.Wang, S.M.Heald, "Structure and reactivity investigations on supported bimetallic Au-Ni catalysts used for hydrocarbon steam reforming", ***J.Catal***. 244(2) (2006) 153-162.

63. J.E.Herrera, J.Kwak, J.Hu, Y.Wang, C.H.F.Peden, "Synthesis of monodispersed oxides of vanadium, titanium, molybdenum, tungsten on mesoporous silica using atomic layer deposition", ***Topics in Catalysis*** 39 (3&4) (2006) 245-255.

62. H.Roh, Y.Wang, D.L.King, A.Platon, C.Chin "Low temperature and H2 selective catalysts for ethanol steam reforming", ***Catal.Letts***. 108 (1&2): 15-19 (2006).

61. H.Zhao, J. Kwak, Y.Wang, J.A. Franz, J.M.White, J.E. Holladay, "Effects of crystallinity on dilute hydrolysis of cellulose", ***Energy & Fuels*** 20: 807-811 (2006).

60. J.E.Herrera, J.Kwak, J.Hu, Y.Wang, C.H.F.Peden, J.Macht, E.Iglesia, "Preparation and characterization of novel highly dispersed tungsten oxide catalysts on mesoporous silica", ***J.Catal***. 239: 200-211 (2006).

58. J.E.Herrera, J.Kwak, J.Hu, Y.Wang, C.H.F.Peden, "A new class of highly dispersed V2O5 catalysts on mesoporous silica: synthesis, characterization, and catalytic activity in the partial oxidation of ethanol", ***Appl.Catal. A: General***. 300 (2006) 109-119.

59. H.Roh, A.Platon, Y.Wang, D.L.King, "Catalyst Deactivation and Regeneration in Low Temperature Ethanol Steam Reforming with Rh/CeO_2-ZrO_2 Catalysts", ***Catal.Lett***. 110 (1&2) (2006) 1-6.

57. Y.Shin, X.S.Li, W.D.Samuels, Y.Wang, L.R.Pederson, G.J.Exarhos, "Synthesis of metal carbides using biological templates", *Marterials Research Soc.Sym.Proc.*, 879 (2005) 227-232.

56. V.R. Sarsani, Y. Wang, and B.Subramaniam, "Toward stable solid acid catalysts for 1-butene + isobutane alkylation: investigations of heteropolyacids in dense CO_2 media", ***Ind.Eng.Chem.Res***. 44 (2005) 6491-6495.

55. C.Chin, J.Cao, J.Hu,Y.Wang, "Carbon nano-tube supported Co catalysts for Fischer-Tropsch synthesis", ***Catal.Today***, 110 (2005) 42-47.

54. Wang, Yong; Holladay, Jamelyn D. Preface. ACS Symposium Series (2005), 914(Microreactor Technology and Process Intensification), xi-xii. CODEN: ACSMC8 ISSN:0097-6156. AN 2006:276832.

53. J.Cao, Y.Wang, R.T.Rozmiarek, "Heterogeneous reactor model of methane steam reforming in a microchannel reactor with microstructured catalysts", ***Catal.Today***, 110 (2005) 92-95.

52. Y.Wang, B.R.Johnson, C.Cao, Y-H.Chin, R.T.Rozmiarek, Y.Gao, A.L.Y.Tonkovich, "Engineered Catalysts for Microchannel Reactor Applications", in *Microreactor Technology and Process Intensification*, Y.Wang, J.D.Holladay, eds; American Chemical Society, Washington, DC, vol 914, 2005, pp.102-118.

51. A.L.Y.Tonkovich and Y.Wang "Overview of Early-Stage Microchannel Reactor Development at Pacific Northwest National Laboratory", in *Microreactor Technology and Process Intensification*,

Y.Wang, J.D.Holladay, eds; American Chemical Society, Washington, DC, vol 914, 2005, pp.47-65.

50. K.Jarosch, A.L.Y.Tonkovich, S.Perry, D.Kuhlmann, and Y.Wang "Microchannel reactors for intensifying gas-to-liquid technology", in *Microreactor Technology and Process Intensification*, Y.Wang, J.D.Holladay, eds; American Chemical Society, Washington, DC, vol 914, 2005, pp.258-272.

49. C.Cao, Y.Wang, J.Hu, S.B.Jones, X.S.Li, D.C.Elliott, D.J.Stevens, "Microchannel catalytic processes for converting biomass derived syngas to transportation fuels", in *Microreactor Technology and Process Intensification*, Y.Wang, J.D.Holladay, eds; American Chemical Society, Washington, DC, vol 914, 2005, pp.273-284.

48. J.D.Holladay, E.O.Jones, R.A.Dagle, G.Xia, C.Cao, Y.Wang, "Miniaturization of a hydrogen plant", in *Microreactor Technology and Process Intensification*, Y.Wang, J.D.Holladay, eds; American Chemical Society, Washington, DC, vol 914, 2005, pp.162-178.

47. G. Xia, J.Holladay, R.A. Dagle, E.Jones, and Y.Wang, "Development of highly active Pd-ZnO/Al_2O_3 catalysts for micro-scale fuel processor applications", ***Chem.Eng.Tech***. 28(4) 515-519 (2005).

46. J.Cao and Y.Wang, "Kinetic Analysis of Complex Reactions Using FEMLAB", ***Chem.Eng.Tech*** 28(6) 649-654 (2005).

45. J.Hu, Y.Wang, C.Cao, D.C.Elliott, D.Stevens, and J.White "Conversion of Biomass Syngas to DME using a Microchannel Reactor", ***Ind.Eng.Chem.Res***. 44 1722-1727 (2005).

44. C. Cao, J. Holladay, E. Jones, D. Palo and Y.Wang, "Modeling a Mili-Watt Fuel Processor", ***AIChE J***. 51(3) (2005) 982-988.

43. J.Hu,J.Kwak, J.E.Herrera,Y.Wang, C.H.F.Peden, "Resolution Enhancement in ^{1}H MAS Spectrum of Mesoporous Silica By Removing Absorbed H_2O Using N_2", ***J.Magn.Reson***. 27 (2005) 200-205.

42. Y.Wang, C.Chin, R.T.Rozmiarek, and J.Watson,"Highly Active and Robust Methane Steam Reforming Catalysts",***Catal.Today***. 98 575-581 (2004).

41. J.G.Frye, A.H.Zacher, T.A.Werpy, and Y.Wang, "Catalytic Preparation of Pyrrolidones from Renewable Resources." pp.145-154 in Organic Reactions Catalysis - vol. 104, Press-Taylor & Francis Group, Warrendale, PA, 2004.

40. X.Ye, Y.Lin, C.Wang, M. H. Engelhard, Y.Wang, C.M. Wai, "Supercritical Fluid Synthesis and Characterization of Catalytic Metal Nanoparticles on Carbon Nanotubes", ***J.Mater.Chem***. 14 908-913 (2004).

39. J.Holladay, Y.Wang, and E.Jones, "Review of developments of portable hydrogen production using microreactor technology", ***Chem.Rev***. 104 (10) 4767-4790 (2004).

38. T.Mazanec, S.Perry, A.L.Y.Tonkovich, and Y.Wang, "Microchannel gas to liquid conversion – thinking big by thinking small" ***Stud.Surf.Sci.Catal***. 147 (2004) 169-174.

37. A.Y.Tonkovich, S.Perry, Y.Wang, W.A. Rogers, D.Qiu, and Y.Peng, "Microchannel Process Technology for Compact Methane Steam Reforming", ***Chem.Eng.Sci.*** 59 (22&23) (2004) 4819-4824.

36. C.Cao, G.Xia, J.Holladay, E.Jones, and Y.Wang, "Kinetic Studies of Methanol-Steam Reforming Over Pd/ZnO Catalyst Using a Microchannel Reactor, "***Appl.Catal.: General***. 262 19-29 (2004).

35. J.D. Holladay, E.O. Jones, R.A. Dagle, G.G. Xia, C. Cao, Y. Wang, "High Efficiency and Low Carbon Monoxide Micro-scale Methanol Processors", ***J.Power.Sources***.131 [1-2] 69-72 (2004).

34. J.Jacht, C.D.Baertsch, M.May-Lozano, S.L.Soled, Y.Wang, and E.Iglesia, "Support Effects on Bronsted Acid Site Densities and Alcohol Dehydration Turnover Rates on Small Tungsten Oxide Domains", ***J.Catal.*** 227 (2004) 479-491.

33. Ya-Huei Chin, Yong Wang˙ , Robert A. Dagle, and Xiaohong Shari Li, "Methanol steam reforming over Pd/ZnO:catalyst preparation and pretreatment studies" ***Fuel Processing Technology*** 83 193-201 (2003).

32. J. Hu, Y. Wang, D. VanderWiel, C. Chin, D. Palo, R. Rozmiarek, R. Dagle, J. Cao, J. Holladay, and E.G. Baker, "Development of fuel processing catalyst for portable power applications", ***Chemical Engineering Journal*** 93 55-60 (2003).

31. J.Liu, G.L.Graff, G.E.Fryxell, S.Baskaran, J.W.Virden, P.C.Rieke, A.A.Campbell, G.J.Exarhos, G.L.Mcvay, M.R.Thompson, Y.Wang, and C.H.F.Peden, "Molecularly Organized Nanocomposites and Their Applications" Handbook of Nanophase and Nanostructured Materials (2003), 4 211-236.

30. Holladay, Jamie; Jones, Evan; Palo, Daniel R.; Phelps, Max; Chin, Ya-Huei; Dagle, Robert; Hu, Jianli; Wang, Yong; Baker, Ed. "Miniature fuel processors for portable fuel cell power supplies", *Materials Research Society Symposium Proceedings* (2003), 756(Solid State Ionics--2002), 429-434.

29. D.R.Palo, J.D.Holladay, R.T.Rozmiarek, C.E.Cuzman-Leong, Y.Wang, J.Hu, Y.H.Chin, R.A.Dagle, E.G.Baker, "Development of a soldier-portable fuel cell power system Part I: A bread-board methanol fuel processor" ***Journal of Power Sources*** 108 28-34 (2002).

28. Y-H. Chin, R. Dagle, A. Dohnalkova, J. Hu, and Y. Wang, "Methanol-steam reforming over Pd/ZnO using microchannel chemical reactors", ***Catalysis Today*** 77 79-88 (2002).

27. Y.Wang, S.Choi, and C.H.F.Peden, "Supported Cs-heteropolyacid Salt Catalysts" ***Catalysis Letters*** 75[3-4] (2001) 169-173.

26. J.J.Bozell, L.Moens, D.C.Elliott, Y.Wang, G.G.Neuenswander, S.W.Fitzpatrick, R.J.Bilski, J.L.Jarnefeld, "Production of levulinic acid and use as a platform chemical for derived products", ***Resources, Conservation and Recylcing***, 28(3&4) (2000) 227-239.

25. D.P.VanderWiel, J.L.Zilka, Y.Wang, A.Y.Tonkovich, and R.S.Wegeng, "Carbon Dioxide Conversions in Microreactors", *Proceedings of 4th International Conference on Microreaction Technology*, Atlanta, GA, March 5-9, 2000.

24. S.P.Fitagerald, R.S.Wegeng, A.R.Tonkovich, Y.Wang, H.D.Freeman, J.L.Marco, F.G.Roberts, and D.P.VanderWie, "A Compact Steam Reforming Rector for Use in an Automotive Fuel Processor",

Proceedings of 4th International Conference on Microreaction Technology, Atlanta, GA, March 5-9, 2000.

23. J.L.Marco, A.Y.Tonkovich, M.J.LaMont, S.P.Fitzgerald, D.P.VanderWiel, Y.Wang, and R.S.Wegeng, "Compact Microchannel Fuel Vaporizer for Automotive Applications", *Proceedings of 4th International Conference on Microreaction Technology*, Atlanta, GA, March 5-9, 2000.

22. J.Liu, G.E.Fryxell, M.Qian, L.Q.Wang, and Y.Wang, "Interfacial Chemistry in Self-assembled Nanoscale Materials with Structural Ordering," ***Pure Appl.Chem***., 72 [1-2] 269-279 (2000).

21. Y.Wang, A.Y.Kim, S.Li, L.Q.Wang, C.H.F.Peden, and B.C.Bunker, "Shape-Selective Solid Acid Catalysts Based on Tungstophosphoric Acid Supported on Mesoporous Silica" *Shape Selective Catalysis-Chemicals Synthesis and Hydrocarbon Processing* pp.353-368 (2000).

20. D. C. Elliott, S. W. Fitzpatrick, J. J. Bozell, J. L. Jarnefeld, R. J. Bilski,L. Moens, J. G. Frye, Jr., Y. Wang, G. G. Neuenschwander," Production of levulinic acid and use as a platform chemical for derived products", *Proceedings of 4th Biomass Conference of the Americas,* 2000.

19. S.Choi, Y. Wang, Z.Nie, D.Khmbapati, J.Liu, and C.H.F.Peden, "Mesoporous silica supported solid acid catalysts" ***Stud.Surf.Sci.Cat***., 130B 965-970 (2000).

18. Elliott, D. C.; Fitzpatrick, S.W.; Bozell, J.J.; Jarnefeld, J.L.; Bilski, R.J.; Moens, L.; Frye, J.G., Jr.; Wang, Y.; Neuenschwander, G.G. 1999. "Production of Levulinic Acid and Use as a Platform Chemical for Derived Products." In: Biomass: A Growth Opportunity in Green Energy and Value-Added Products. Volume 1, pp. 595-600, R. P. Overend and E. Chornet, eds., Elsevier Science, Ltd., Kidlington, United Kingdom.

17. S.Choi, Y.Wang, Z.Nie, J.Liu, C.H.F.Peden, "Highly Dispersed Solid Acid Catalysts" ***Catalysis Today*** 55 117-124 (2000).

16. A.Y.Tonkovich, J.L.Zilka, Y.Wang, M.J.LaMont, S.Fitzgerald, D.P.Vanderwiel, and R.S. Wegeng, "Microchannel Reactors for Automotive Fuel Processors", *Proceedings of the 3nd International Conference of Microreaction Technology*, Frankfurt/Main, Germany, April 18-21, 1999.

15. A.Y.Tonkovich, J.L.Zilka, M.J.LaMont, Y. Wang, and R.S. Wegeng, "Microchannel Reactors for Fuel Processing Applications. I. Water Gas Shift Reactor" ***Chem.Eng.Sci***. 54 2947-2951 (1999).

14. Y.Wang and W.J.Thomson, "Characterization of the Spinel Phase in a Diphasic Mullite Gel Using Dynamic X-Ray Diffraction" ***J.Mater.Sci.*** 34 [15] (1999) 3577-3580.

13. A.Y.Tonkovich, J.L.Zilka, M.J.LaMont, Y.Wang, and R.S. Wegeng "Microchannel Reactors for Fuel Processing Applications. I. Water Gas Shift Reactor", *Proceedings of the 15th International Symposium on Chemical Reaction Engineering*, Newport Beach, CA, Sept. 13-16, 1998.

12. A.Y.Tonkovich, D.M.Jimenez, J.L.Zilka, M.J.LaMont, Y.Wang, and R.S.Wegeng, "Microhannel Chemical Reactors for Fuel Processing", *Proceedings of the 2nd International Conference of Microreaction Technology*, March 1998, New Orleans, Louisiana.

11. Y.Su. Y.Wang, J.L.Daschbach, T.B.Fryberger, M.A.Henderson, J.Janata, and CH.F.Peden, "Gamma-ray Destruction of EDTA Catalyzed by Titania" ***J. of Advanced Oxidation Technologies***, 3 [1] 63-69 (1998).

10. P.J.Bruinsma, Y.Wang, S.Li, J.Liu, P.A.Smith, and B.C.Bunker, "The Effect of Submicron-Boehmite Particle Additions on the Properties of Micron-Gibbsite Particle Suspersions" ***J. Colloid and Interfaces Science***, 192 16-25 (1997).

9. Y.Wang and W.J.Thomson, "The Influence of Steam on the Tricalcium Silicate Formation Kinetics from Sol-Gel Precursors," ***J.Mater.Sci****.* 31 [5] (1996) 1319-1334.

8. Y.Wang and W.J.Thomson, "Mullite Formation from Non-stoichiometric Slow Hydrolyzed Single Phase Gels," ***J.Mater.Res***., 10 [4] (1995) 912-917.

7. Y.Wang and W.J.Thomson, "The Effect of Sample Preparation on the Thermal Decomposition of $CaCO_3$," ***Thermo.Acta***, 255 (1995) 383-390.

6. Y.Wang and W.J.Thomson, "The Effects of Steam and CO_2 on the Kinetics of Calcite Decomposition," ***Chem.Eng.Sci****.,* 50 [9] (1995) 1373-1382.

5. Y.Wang, J.N.Petersen, and E.N.Kaufman, "Modeling the Biological Solubilization of Coal in A Liquid Fluidized Bed Reactor," ***Appl. Biochem. Biotech***., 51/52 (1995) 437-448.

4. E.N.Kaufman, Y.Wang, J.N.Petersen, and M.H. Little, "Experimental and Numerical Characterization of Liquid Fluidized Beds of Coal Particles," ***Chem.Eng.Sci.***, 50 [23] (1995) 3703-3714.

3. Y.Wang, D.Li, and W.J.Thomson, "The Influence of Steam on Mullite Formation from Sol-Gel Precursors," ***J.Mater.Res****.,* 8 [1] (1993)195-205.

2. Y.Wang, A.Tong, Y.Su, and Y.Zongren "Vapor-Liquid Equilibrium of MTBE, Methanol, and 2-Butene," *Chengdu Keji Daxue Xuebao (**J. of Chengdu University of Science and Technology**)*, [2] (1989)1-10.

1. Y.Wang, A.Tong, and Y.Su, "Isobaric Vapor-Liquid Equilibrium for the Methanol-MTBE System," *Shiyou Huagong (**J. of Petro.Chem. Eng**.)*, 18 [7] (1989) 442-446.

Issued U.S. Patents

111 "Hydrothermally and thermally stable catalytic materials based on theta-alumina", L.Kovarik, K.Khivantsev,N.R.Jaegers, Y.Wang, J.Kwak, J.Szanyi, **US 11,857,950**, Jan. 2, **2024**.

110 "High-capacity, low-temperature, passive NOx and cd adsorbers and methods for making same", K.Khivantsev, S.Janos, N.R.Jaegers, L.Kovarik, F.Gao, Y.Wang, **US 11,071,966**, July 27, **2021**.

109 "Process for making biobsed fuel additives", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkitasubramanian, **US 10,774,022**, Sept. 15, **2020**

108 "Process for making biobased isoprene", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkitasubramanian, **US 9,975,818**, May 22, **2018**.

107 "Process and apparatus employing microchannel processes technology", A.L.Tonkovich, R.Arrora, J.Brophy, F.P.Daly, S.Deshmukh, M.Fanelli, K.T.P.Jarosch, T.J.LaPlante, R.Q.Long, T.Mazanec, D.F.Ryan, L.J.Silva, W.W.Simmons, B.Stangeland, Y.Wang, T.Yuschak, S.T.Perry, J.D.Marco, M.A.Marchiando, R.D.Litt, **US 9,926,269**, March 27, **2018.**

106 "Process for making methacrylic acid", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkistasubramanian, **US 9,751,823**, Sept. 5, **2017**.

105 "Process and apparatus employing microchannel process technology", A.L.Tonkovich, R.Arrora, J.Brophy, F.P.Daly, S.Deshmukh, M.Fanelli, K.T.P.Jarosch, T.J.LaPlante, R.Q.Long, T.Mazanec, D.F.Ryan, L.J.Silva, W.W.Simmons, B.Stangeland, Y.Wang, T.Yuschak, S.T.Perry, J.D.Marco, M.A.Marchiando, R.D.Litt, **US 9,695,368**, July 4, **2017.**

104 "Process and catalyst for conversion of acetic acid to isobutene", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkistasubramanian, **US 9,586,194**, March 7, **2017**.

103 "Process and catalyst for conversion of acetic acid to isobutene and prolylene", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkistasubramanian, **US 9,580,365**, Feb. 28, **2017**.

102 "Renewable para-xylene from acetic acid", J.Sun, C.Liu, Y.Wang, C.Smith, K.Marin, P.Venkistasubramanian, **US 9,505,671**, Nov. 29, **2016**

101 "Fischer-Tropsch synthesis using microchannel technology and novel catalyst and microchannel reactor", Y.Wang, A.L.Tonkovich, T.Mazanec, F.P.Daly, D.VanderWiel, J.Hu, C.Cao, C.Kibby, X.Li, M.D.Briscoe, N.Gano, Y.Chin, **US 9,453,165**, Sept. 27, **2016**.

100 "Integrated reactors, methods of making same, and methods of conducting simultaneous exothermic and endothermic reactions", A.L.Tonkovich, G.Roberts, S.T.Perry, S.P.Fitzgerald, R.S.Wegeng, Y.Wang, D.VanderWiel, J.L.Marco, **U.S. 9,452,402**, Sept. 27, **2016**.

99 "Processes for making methacrylic acid", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkitasubramanian, **US 9,403,749**, Aug. 2, **2016**.

98 "Renewable isobutene and isoprene from a mixture of acetic acid and propionic acid", J.Sun, C.Liu, Y.Wang, K.Martin, P.Venkitasubramanian, **US 9,381,495**, July 5, **2016**.

97 "Suspended-slurry reactor", W.E.TeGrotenhuis, A.M.Karim, P.H.Humble, Y.Wang, **US 9,289,741**, March 22, **2016**.

96 "Renewable olefins from a mixture of acetic acid and propionic acid", J.Sun, C.Liu, Y.Wang, C.Smith, K.Martin, P.Venkitasubramanian, J.Terrian, **US 9,212,106**, December 15, **2015**.

95 "Integrated combustion reactor and methods of conducting simultaneous endothermic and exothermic reactions", A.L.Tonkovich, G.Roberts, S.P.Fitzgerald, P.W.Neagle, D.qiu, M.B.Schmidt, S.T.Perry, D.J.Hesse, R.J.Luzenski, G.B.Chadewell, Y.Peng, J.A.Matthias, N.P.Gano, R.Q.Long, W.A.Rogers, R.Arora, W.W.Simmons, B.L.Yang, D.J.Kuhlmann, Y.Wang, T.D.Yuschak, T.Forte, J.A.Monahan, R.Jetter, **US 9,192,929**, November 24, **2015**.

94 "Use of byproduct acetic acid from oxidative methods of making acrylic acid and/ormethacrylic acid", J.Sun, C.Liu, Y.Wang, K.Marin, P.Venkitasubramanian, **US 9,156,746**, October 13, **2015**.

93 "Fischer-Tropsch synthesis using microchannel technology and novel catalyst and microchannel reactor", Y.Wang, A.L.Tonkovich, T.Mazanec, F.P.Daly, D.VanderWiel, J.Hu, C.Cao, C.Kibby, X.Li, M.D.Briscoe, N.Gano, Y.Chin, **US 9,023,900**, May 5, **2015**.

92 "Dimethyl ether production from methanol and/or syngas", R.Dagle, Y.Wang, E.G.Baker, J.Hu, **US 8,957,259**, February 17, **2015**.

91 "Selective CO methanation catalysis", R.A.Dagle, Y.Wang, G.Xia, **US 8,877,674**, November 4, **2014**.

90 "Process and apparatus employing microchannel process technology", A.L.Tonkovich, R.Arrora, J.Brophy, F.P.Daly, S.Deshmukh, M.Fanelli, K.T.P.Jarosch, T.J.LaPlante, R.Q.Long, T.Mazanec, D.F.Ryan, L.J.Silva, W.W.Simmons, B.Stangeland, Y.Wang, T.Yuschak, S.T.Perry, J.D.Marco, M.A.Marchiando, R.D.Litt, **US 8,747,656**, June 10, **2014**.

89 "Steam reforming methods and catalysts", J.M.Watson, F.P.Daly, Y.Wang, S.T.Perry, A.L.Tonkovich, S.P.Fitzgerald, L.J.Silva, R.Taha, E.A.de Alba, Y.Chin, R.Rozmiarek, X.Li, **US 8,569,202**, Oct. 29, **2013**.

88 "Integrated reactors, methods of making same, and methods of conducting simultaneous exothermic and endothermic reactions", A.L.Tonkovich, G.Roberts, S.T.Perry, S.P.Fitzgerald, R.S.Wegeng,Y.Wang, D.Vanderwiel, J.L.Marco. **US 8,557,186**, Oct.15, **2013**.

87 "Integrated combustion reactors and methods of conducting simultaneous endothermic and exothermic reactions", A.L.Tonkovich, G.Roberts, S.P.Fitzgerald, P.W.Neagle, D.Qiu, M.B.Schmidt, S.T.Perry, D.J.Hesse, R.J.Luzenski, G.B.Chadwell, Y.Peng, J.A.Mathias, N.P.Gano, R.Q.Long, W.A.Rogers, R.Arora, W.W.Simmons, B.L.Yang, D.J.Kuhlmann, Y.Wang, T.D.Yuschak, T.Forte, J.A.Monahan, R.Jetter. **US 8,383,054**, Feb. 26, **2013**.

86 "Steam reforming method", J.M.Watson, F.P.Daly, Y.Wang, S.T.Perry, A.L.Tonkovich, S.P.Fitzgerald, L.J.Silva, R.Taha, E.A.de Alba, Y.Chin, R.Rozmiarek, X.Li, **US 8,277,773**, Oct. 2, **2012**.

85 "Reactors having varying cross-section, methods of making same, and methods of conducting reactions with varying local contact time", Y.Wang, C.Cao, J.B.Kimble, L.J.Silva, **US 8,206,666**, June 26, **2012.**

84 Protected alloy surfaces in microchannel apparatus and catalysts, alumina supported catalysts, catalyst intermediates, and methods of forming catalysts and microchannel apparatus", B.L.Yang, A.L.Tonkovich, J.M.Watson, F.P.Daly, S.P.Fitzgerald, C.Cao, X.Li, D.Qiu, R.Taha, J.J.Ramler, Y.Wang, R.Long, Y.H.Chin, **US 8,206,597**, June 26, **2012**

83 "Tailored Fischer-Tropsch synthesis product distribution", Y.Wang, C.Cao, X.S.Li, D.C.Elliott, **US 8,203,023**, June 19, **2012**

82 "Microcombustors, microreformers, and methods involving combusting or reforming liquids", J.D.Holladay, Y.Wang, Y.Chin, M.Phelps, **US 8,197,777**, June 12, **2012**.

81 "Fischer-Tropsch synthesis using microchannel technology and novel catalyst and microchannel reactor", Y.Wang, A.L.Y.Tonkovich, T.Mazanec, F.P.Daly, D.VanderViel, J.Hu, C.Cao, C.Kibby, X.S.Li, M.D.Briscoe, N.Gano, Y.Chin, **US 8,188,153**, May 29, **2012**.

80 "Structured catalyst bed and method for conversion of feed materials to chemical products and liquid fuels", Y.Wang and W.Liu, **US 8,101,140**, Jan. 24, **2012**.

79 "Stable, catalyzed, high temperature combustion in microchannel, integrated combustion reactors", F.P.Daly, J.M.Watson, Y.Wang, J.Hu, C.Cao, R.Long, **US 8,062,623**, November 22, **2011**.

78 "Protected alloy surfaces in microchannel apparatus and catalysts, alumina supported catalysts, catalyst intermediates, and methods of forming catalysts and microchannel apparatus", B.Yang, F.P. Daly, J.M.Watson, T.Manzanec, S.P.Fitzgerald, B.R.Johnson, X.Li, C.Cao, Y.Chin, A.L.Tonkovich, R.Arora, D.J.Hesse, D.Qiu, R.Taha, J.J.Ramler, Y.Wang, R. Long, **US 7,874,432**, Jan.25, **2011.**

77 "Alcohol synthesis from CO or CO2", J.Hu, R.A.Dagle, J.D.Holladay, C.Cao, Y.Wang, J.White, D.C.Elliott, D.J.Stevens, **US 7,858, 667**, Dec. 28, **2010**.

76 "Integrated reactors, methods of making same, and methods of conducting simultaneous exothermic and endothermic reactions", A.L.Tonkovich, G.Roberts, S.T.Perry, S.P.Fitzgerald, R.S.Wegeng, Y.Wang, F.VanderWiel, J.L.Marco, **US 7,803,325**, September 28, **2010**.

75 "Methods of making textured catalysts", T.Werpy, J.G.Frye, Y.Wang, A.H.Zacher, **US 7,776,782**, August 17, **2010**.

74 "Catalysts, reactors and methods of producing hydrogen via the water-gas shift reaction", Y.Wang, A.L.Y.Tonkovich, **US 7,776,113**, August 17, **2010**.

73 "Methods for dehydration of sugars and sugar alcohols", J.E.Holladay, J.Hu, X.Zhang, Y.Wang, **US 7,772,412**, August 10,**2010**.

72 "Methods of producing hydrogen via the water-gas shift reaction over a Pd-Zn catalyst", R.A.Dagle, Y.Wang, J.Hu, **US 7,758,846**, July 20, **2010**.

71 "Methods of generating hydrocarbon reagents from diesel, natural gas and other logistical fuels", D.R.Herling, C.L.Aardahl, R.T.Rozmiarek, K.G.Rappe, Y.Wang, J.D.Holladay, **US 7,744,751**, June 29, **2010**.

70 "Method of performing sugar dehydration and catalyst treatment", J.Hu, J.E.Holladay, X.Zhang, Y.Wang, **US 7,728,156**, June 1, **2010**.

69 "Steam reforming methods and catalysts", J.M.Watson, F.P.Daly, Y.Wang, A.L.Tonkovich, S.P.Fitzgerald, S.T.Perry, L.J.Silva, R.Taha, E.Aceves de Alba, Y.Chin, R.Rozmiarek, X.Li, **US 7,722,854**, May 25, **2010**.

68 "Microchannel reactor", Y.Wang, A.L.Y.Tonkovich, T.Mazanec, F.P.Daly, D.VanderWiel, J.Hu, C.Cao, C.Kibby, X.Li, M.D.Briscoe, N.Gano, Y.Chin, **US 7,722,833**, May 25**, 2010**.

67 "Staged alkylation in microchannels", Y.Wang, J.F.White, **US 7,708,955**, May 4, **2010**.

66 "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 7,700,518**, April 20, **2010**.

65 "Method of forming a dianhydrousugar alcohol", J.H.Holladay, J.Hu, Y.Wang, T.A.Werpy, X.Zhang, **US 7,649, 099**, Jan. 19, **2010**.

64 "Chemical reactor for gas phase reactant catalytic steam reforming reactions", A.L.Y.Tonkovich, Y.Wang, S.P.Fitzgerald, J.L.Marco, G.L.Roberts, D.P.Vanderwiel, R.S.Wegeng, **US 7,632,320**, Dec. 15, **2009**.

63 "Two stage dehydration of sugars", J.H.Holladay, J.Hu., Y.Wang, T.A.Werpy, **US 7,615,652**, November 10, **2009**

62 "Catalyst structure and method of Fischer-Tropsch Synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 7,585,899**, September 8, **2009**.

61 "Microcombustors, microreformers, and methods involving combusting or reforming fluids", J.D.Holladay, Y.Wang, J. Hu, Y.Chin, R.A. Dagle, G. Xia, E.G.Baker, D.R.Palo, M.R. Phelps, H.Jung, **US 7,585,472**, September 8, **2009**

60 "Methods of conducting catalytic combustion in a multizone reactor, and a method of making a thermally stable catalyst support", F.P.Daly, J.M.Watson, Y.Wang, J.Hu, C.Cao, R.Long, R.Taha, **US 7,566,441**, July 28, **2009**

59 "Alcohol steam reforming catalysts and methods of alcohol steam reforming", J.D.Holladay, Y.Wang, J. Hu, Y.Chin, R.A. Dagle, G. Xia, E.G.Baker, D.R.Palo, M.R. Phelps, H.Jung, **US 7,563,390**, July 21, **2009**.

58 "Catalyst, method of making, and reaction using catalysts", A.L.Y.Tonkovich, Y.Wang, Y.Gao, **U.S. 7,498,001**, March 3, **2009**.

57 "Catalysts, reactors and methods of producing hydrogen via the water-gas-shift reaction", Y.Wang and A.L.Y.Tonkovich, **U.S. 7,488,360 B2**, February 10, **2009**

56 "Reforming Catalysts", Y.Wang, J.Hu, Y.Chin, R.A.Dagle, C.Cao, **US 7,470,648**, Dec. 30, **2008**

55 "Method of generating hydrocarbon reagents from diesel, natural gas and other logistic fuels", C.Aahdal, D.Herling, Y.Wang, J.Holladay, **US 7,435,760**, Oct.14, **2008**.

54 "Catalysts, in microchannel apparatus, and reactions using same", T.J.Mazanec, Y.Wang, L.J.Silva, and D.P.VanderViel, **US 7,404,936**, July 29, **2008**.

53 "Catalyst and method of steam reforming" Y.Wang, A.L.Y.Tonkovich, and D.P. Vanderwiel. **US 7,335,346,** February 26, **2008**

52 "Staged alkylation in microchannels", Y.Wang, J.F.White, **US 7,304,198**, Dec. 4, **2007**.

51 "Carbon nanotube-containing catalysts, methods of making, and reactions catalyzed over nanotube catalysts", Y.Wang, Y.H.Chin, Y.Gao, **US 7,288,576**, Oct 30, **2007**.

50 "Chemical reactor and method for gas phase reactant catalytic reactions", A.L.Y.Tonkovich, Y.Wang, S.P.Fitzgerald, J.L.Marco, G.L.Roberts, D.P.Vanderwiel, R.S.Wegeng, **US 7,288,231**, Oct. 30, **2007**.

49 "Methods of conducting simultaneous endothermic and exothermic reactions", A.L.Y.Tonkovich, S.P.Fitzgerald, P.W.Neagle, D.Qiu, M.B.Schmidt, S.T.Perry, D.J. Hesse, R.J.Luzenski, G.B.Chadwell, Y.Peng, J.A.Mathias, R.Q.Long, W.A.Rogers, R.Arora, W.W.Simmons, B.L.Yang, Y. Wang, T.Forte, R.Jetter, US **7,250,151**, July 31, **2007**

48 "Oxidation process using microchannel technology and novel catalyst useful in same", R. Long, A.L.Y.Tonkovich, E.Daymo, B.L.Yang, Y.Wang, F.P. Daly, US **7,226,574**, June 5, **2007**

47 "Alcohol steam reforming catalysts and methods of alcohol steam reforming", J.D.Holladay, Y.Wang, J.Hu, Y.H.Chin, R.A.Dagle, G.Xia, E.G.Baker, D.R.Palo, M.R.Phelps, H.Jung, **US 7,208,136**, April 24, **2007**.

46 "Textured catalysts, methods of making textured catalysts, and methods of catalyzing reactions conducted in hydrothermal conditions", T.A.Werpy, J.G. Frye, Jr., Y.Wang, A.H.Zacher, **US 7,186,668**, March 6, **2007**.

45 "Fischer-tropsch synthesis using microchannel technology and novel catalyst and microchannel reactor", Y.Wang, A.L.Y.Tonkovich, T.Mezanec, F.P.Daly, D.P.VanderViel, J.Hu, C.Cao, C.Kibby, S.Li, M.D.Brisco, N.Gano, Y.H.Chin, **US, 7,084,180**, Aug.1, **2006**.

44 "Microcombustors, microreformers, and methods for combusting and for reforming fluids", J.D.Holladay, M.R.Phelps, Y.Wang, Y.H.Chin, **US 7,077,643**, July 18, **2006.**

43 "Method and Apparatus for Obtaining Enhanced Production Rate of Thermal Chemical Reactions", A.L.Y.Tonkovich, Y.Wang, R.S.Wegeng, and Y.Gao, **US 7, 045,114**, May 16, **2006**.

42 "Catalyst structure and method of Fischer-Tropsch Synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 7,045,486**, May 16, **2006**.

41 "Carbon Nanotube-Containing Structures, Methods of Making and Processes Using Same" Y.Wang, Y.Chin, Y.Gao, C.L. Aardahl, and T.L. Stewart, **US 7,011,760**, March 14, **2006**.

40 "Carbon nanotube-containing catalysts, methods of making, and reactions catalyzed over nanotube catalysts", Y.Wang, Y.Gao, Y.Chin, **US 7,008,969 B2**, March 7, **2006.**

39 "Chemical reactor for gas phase reactant catalytic reactions", A.L.Y.Tonkovich, Y.Wang, S.P.Fitzgerald, J.L.Marco, G.L.Roberts, D.P.Vanderwiel, R.S.Wegeng, **US 6,984,363**, Jan.10, **2006.**

38 "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 6,982,287**, Jan. 6, **2006**.

37 "Methods of conducting simultaneous exothermic and endothermic reactions", A.L.Y.Tonkovich, G.L.Roberts, S.T.Perry, S.P.Fitzgerald, Y.Wang, **US 6,969,506**, Nov.29, **2005**.

36 "Catalyst and method of steam reforming", Y.Wang, A.L.Y.Tonkovich, D.P.VanderWiel, **US 6,958,310**, Oct. 25, **2005**.

35 "Reforming catalysts and methods of alcohol reforming", Y.Wang, A.L.Y.Tonkovich, J.Hu, **US 6,936,237**, Aug.30, **2005**.

34 "Carbon nanotube-containing structures, methods of making, and processes using same", Y.Wang, Y.Chin, Y.Gao, C.L.Aardhal, and T.L.Stewart, **US 6,824,689**, Nov. 30, **2004**.

33. "Apparatus for hydrogen separation/purification utilizing rapidly cycled thermal swing sorption", B.F.Monzyk, A.L.Y.Tonkovich, Y.Wang, D.P.VanderWiel, S.T.Perry, S.P.Fitzgerald, W.W.Simmons, J.S.McDaniel, A.E.Weller, Jr., C.M.Cucksey, **US 6,824,592**, Nov.30, **2004**.

32. "Catalyst of a metal heteropoly acid salt that is insoluble in a polar solvent on a non-metallic porous support and method of making", Y.Wang, C.H.F.Peden, S.Choi, **US 6,815,392**, Nov. 9, **2004**.

31. "Methods for separation/purification utilizing rapidly cycled thermal swing sorption", A.L.Y.Tonkovich, B.F.Monzyk, Y.Wang, D.P.VanderWiel, S.T.Perry, S.P.Fitzgerald, W.W.Simmons, J.S.McDaniel, A.E.Weller, Jr., **US 6,814,781**, Nov.9, **2004**.

30. "Catalyst, Method of Making, and Reactions Using the Catalyst", A.L.Y.Tonkovich, Y.Wang, Y.Gao, **US 6,762,149**, July 13, **2004**.

29. "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 6,750,258**, June 15, **2004**.

28. "Catalyst and method of steam reforming", Y.Wang, A.L.Y.Tonkovich, and D.P.VanderWiel, **US 6,734,137**, May 11, **2004.**

27. "Carbon nanotube-containing catalysts, methods of making, and reactions catalyzed over nanotube catalysts", Y.Wang, Y.H.Chin, Y.Gao, **US 6,713,519**, March 30, **2004**.

26. "Methods of making pyrrolidones", T.A.Werpy, J.G. Frye, Jr., Y.Wang, A.H.Zacher, **US 6,706,893**, March 16, **2004**.

25. "Method for gas phase reactant catalytic reactions", A.L.Y.Tonkovich, Y.Wang, S.P.Fitzgerald, J.L.Marco, G.L.Roberts, D.P.Vanderwiel, R.S.Wegeng, **US 6,680,044**, Jan.20, **2004.**

24. "Methods of making pyrrolidones", T.A.Werpy, J.G. Frye, Jr., Y.Wang, A.H.Zacher, **US 6,670,483**, Dec.30, **2003**.

23. "Textured catalysts, methods of making textured catalysts, and methods of catalyzing reactions conducted in hydrothermal conditions", T.A.Werpy, J.G. Frye, Jr., Y.Wang, A.H.Zacher, **US 6,670,300**, Dec.30, **2003**.

22. "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 6,660,237**, Dec. 9, **2003**.

21. "Catalysts, reactors and methods of producing hydrogen via the water-gas shift reaction", Y.Wang and A.L.Y.Tonkovich, **US 6,652,830**, Nov. 25, **2003**.

20. "Methods of making pyrrolidones", T.A.Werpy, J.G. Frye, Jr., Y.Wang, A.H.Zacher, **US 6,632,951**, Oct.14, **2003**.

19. "Method and apparatus for obtaining enhanced production rate of thermal chemical reactions", A.L.Y.Tonkovich, Y.Wang, R.S.Wegeng, and Y.Gao, **US 6,616,909**, September 9, **2003**.

18. "Catalyst and method of steam reforming", Y.Wang, A.L.Y.Tonkovich, and D.P.VanderWiel, **US 6,607,678**, Aug.19, **2003.**

17. "Methods of making pyrrolidones", T.A.Werpy, J.G. Frye, Jr., Y.Wang, A.H.Zacher, **US 6,603,021**, Aug.5, **2003**.

16. "Converting sugars to sugar alcohols by aqueous phase catalytic hydrogenation", D.C.Elliott, T.A.Werpy, Y.Wang, and J.G.Frye, Jr., **US 6,570,043,** May 27, **2003**.

15. "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 6,558,634**, May 6, **2003**.

14. "Method and apparatus for obtaining enhanced production rate of thermal chemical reactions", A.L.Y.Tonkovich, Y.Wang, R.S.Wegeng, Y.Gao, **US 6,540,975**, April 1, **2003**.

13. "Apparatus and methods for separation/purification utilizing rapidly cycled thermal swing sorption", A.L.Y.Tonkovich, B.F.Monzyk, Y.Wang, D.P.VanderWiel, S.T.Perry, S.P.Fitzgerald, W.W.Simmons, J.S.McDaniel, A.E.Weller, Jr., **US 6,508,862 B1**, Jan. 21, **2003**.

12. "Apparatus and methods for hydrogen separation/purification utilizing rapidly cycled thermal swing sorption", A.L.Y.Tonkovich, B.F.Monzyk, Y.Wang, D.P.VanderWiel, S.T.Perry, S.P.Fitzgerald, W.W.Simmons, J.S.McDaniel, A.E.Weller, Jr., **US 6,503,298**, Jan. 7, **2003**.

11. "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 6,491,880**, December 10, **2002**.

10. "Active Microchannel Fluid Processing Unit and Method of Making", W.D.Bennett, P.M.Martin, D.M.Matson, G.L.Roberts, D.C.Stewart, A.L.Y.Tonkovich, Y.Wang, J.L.Zilka, S.C.Schmitt, T.M.Werner, **US 6,490,812**, December 10, **2002**

9. "Chemical reactor and method for gas phase reactant catalytic reactions", A.L.Y.Tonkovich, Y.Wang, S.P.Fitzgerald, J.L.Marco, G.L.Roberts, D.P.Vanderwiel, R.S.Wegeng, **US 6,488,838**, Dec. 3, **2002**.

8. "Long life hydrocarbon conversion catalyst and method of making", A.L.Y.Tonkovich, Y.Wang, Y.Gao, **US 6,479,428**, Nov.12, **2002**.

7. "Catalyst of a metal heteropoly acid salt that is insoluble in a polar solvent on a non-metallic porous support and method of making", Y.Wang, C.H.F.Peden, S.Choi, **US 6,472,344**, Oct. 29, **2002**.

6. "Catalyst structure and method of Fischer-Tropsch synthesis", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, Y.Gao, E.G.Baker, **US 6,451,864**, September 17, **2002**.

5. "Catalyst, Method of Making, and Reactions Using the Catalyst", A.L.Y.Tonkovich, Y.Wang, Y.Gao, **US 6,440,895B1**, Aug. 27, **2002**.

4. "Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", Y.Wang, D.P.VanderWiel, A.L.Y.Tonkovich, **US 6,284,217B1**, Sep.4, **2001**.

3. "Ruthenium on Rutile Catalyst, Catalytic System, and Method for Aqueous Phase hydrogenations", D.C.Elliott, T.A.Werpy, Y.Wang, and J.G.Frye, Jr., **US 6,235,797B1**, May 22, **2001**.

2 "Active Microchannel Heat Exchanger", A.L.Y.Tonkovich, G.L.Roberts, C.J.Call, R.S.Wegeng, Y.Wang, **US 6,200,536B1**, Mar.13, **2001**.

1. "Active Microchannel Fluid Processing Unit and Method of Making", W.D.Bennett, P.M.Martin, D.M.Matson, G.L.Roberts, D.C.Stewart, A.L.Y.Tonkovich, Y.Wang, J.L.Zilka, S.C.Schmitt, T.M.Werner, **US 6,192,596**, February 27, **2001**

Issued Foreign Patents

174 "一种碱性氧化物改性氮化硼催化剂及其制备方法与应用"，张朝霞，殷敏，韩沛杰，王帅，王勇，专利号： ZL 2020 1 0051324.8, 授权公告日：2021年12月3日. Method for the preparation of alkaline metal oxide modified boron nitride catalysts and their applications. Patent Number: ZL 2020 1 0051324.8. Chinese Patent issued on Dec. 3, 2021.

173 "一种利用Sn-β类催化剂同时制备甲基烯丙醇和乙缩醛的方法"，胡文达，万绍笼，王勇，专利号ZL 201710311988.7, 授权公告日：2020年4月1日。Methold for simultaneously synthesizing methallyl alcohol and acetal on Sn-β catalysts. Patent Number: ZL 201710311988.7. Chinese Patent issued on April 1, 2020

172 "一种磷改性的丙烷氨氧化催化剂及其制备方法和应用"，林敬东，林锦汉，郭杰，万炎，许明亮，王勇，专利号ZL 2018 1 0386207.5, 授权公告日 2020年3月20日。Preparation method and application of P-modified catalysts for propane ammoxidation. Patent Number: ZL 2018 1 0386207.5. Chinese Patent issued on March 20, 2020

171"一种用于甲烷直接选择氧化制备甲醇、甲醛、CO的方法"，张朝霞，谈江乔，田金树，林敬东，王帅，王勇，专利号ZL 2017 1 0886455.1, 授权公告日：2019年11月20日。Method for direct selective oxidation of methane to produce methanol, formaldehyde and CO, Patent Number: CN107739297A. Chinese Patent issued on Nov. 20, 2019.

170 "一种愈创木酚制备甲酸的方法", 张朝霞, 程晓杰, 陈佳力, 万绍隆, 林敬东, 王帅, 王勇, 专利号 CN107522611A, 授权公告日：2019年09月29日. Method for formic acid production from guaicol, Patent Number: CN107522611A. Chinese Patent issued on Sept. 29, 2019

169 "一种通过原子置换制备高稳定性纳米催化剂的方法"， 张先华， 王理， 刘畅， 杨海亮， 林敬东， 王勇， 专利号：CN07282048B， 授权公告日：2019年5月10日。Method for making highly stable catalysts using atom exchange approach, Patent Number: CN07282048B, Chinese patent issued on May 10, 2019.

168 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1637219, Netherlands, issued on 11/29/2017

167 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1637219, Germany, issued on 11/29/2017

166 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1637219, Great Briain, issued on 11/29/2017

165 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1637219, Italy, issued on 11/29/2017

164 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1637219, European Patent Convention, issued on 11/29/2017

163 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1637219, France, issued on 11/29/2017

162 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2264128, European Patent Convention, issued on 10/25/2017

161 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2264128, France, issued on 10/25/2017

160 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2264128, Italy, issued on 10/25/2017

159 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2264128, Great Britain, issued on 10/25/2017

158 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2264128, Germany, issued on 10/25/2017

157 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2264128, Netherlands, issued on 10/25/2017

156 "Catalyst, method of making, and reactions using the catalyst", 5,964,594, Japan, issued on 7/8/2016.

155 "Catalyst structure and method of Fischer-Tropsch synthesis",5,890,380, Japan, issued on 2/26/2016

154 "Alcohol synthesis from CO or CO2", 2,633,330, Canada, issued on 2/10/2015.

153. "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 2,657,485, Canada, issued on 9/16/2014.

152. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 5584175, Japan, issued on 7/25/2014.

151. "Reactors having Varying Cross-Section, Methods of Making Same, and Methods of Conducting Reactions with Varying Local Contact Time", 1511561, European Patent Convention, issued on 6/25/2014.

150. "Reactors having Varying Cross-Section, Methods of Making Same, and Methods of Conducting Reactions with Varying Local Contact Time", 1511561, Germany, issued on 6/25/2014.

149. "Reactors having Varying Cross-Section, Methods of Making Same, and Methods of Conducting Reactions with Varying Local Contact Time", 1511561, Great Britain, issued on 5/25/2014.

148. "Alcohol Synthesis from CO CO2", 5551365, Japan, issued on 5/30/2014.

147. "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 5474508, Japan, issued on 2/14/2014.

146. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 5474863, Japan, issued on 2/14/2014.

144. "Staged alkylation in microchannels", 2,564,213, Canada, issued on 1/28/2014.

143. "Alcohol synthesis from CO, CO2", 2006329825, Australia, issued on 1/2/2014.

143. "Catalyst, method of making, and reactions using the catalyst", 2,396,144, Canada, issued on 11/19/2013.

142. "Reactors having Varying Cross-Section, Methods of Making Same, and Methods of Conducting Reactions with Varying Local Contact Time", 2,486,379, Canada, issued on 11/12/2013.

141. "Production of CH4 using a system containing CH4 concentration", ZL2011 0020934.8, China, issued on 11/6/2013.

140. "Apparatus And Method For Separation/Purification Of Fluids Utilizing Rapidly Cycled Thermal Swing Sorption", 5291855, Japan, issued on 6/14/2013.

139. "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 5265833, Japan, issued on 5/10/2013.

138. "Catalyst, Method of Making, and Reactions Using the Catalyst", 1257362, European Patent Convention, issued on 5/8/2013.

137. "Catalyst, Method of Making, and Reactions Using the Catalyst", 60147962.9, Germany, issued on 5/8/2013.

136. "Catalyst, Method of Making, and Reactions Using the Catalyst", 1257362, Great Britain, issued on 5/8/2013.

135. "Catalyst, Method of Making, and Reactions Using the Catalyst", 1257362, France, issued on 5/8/2013.

134. "Catalyst, Method of Making, and Reactions Using the Catalyst", 1257362, Netherlands, issued on 5/8/2013.

133. "生产富含CH_4气体的系统以及用该系统生产富含CH_4气体的方法"，王理，孙琦，王勇，刘科，专利号ZL2010 1 0516312.X，授权公告日：2013年02月27日。"A system producing CH_4 rich gaseous products and a method for producing CH_4 rich gaseous products using same", ZL2010 1 0516312.X, China, issued on 2/27/2013.

132. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 1204587, Great Britain, issued on 1/16/2013.

131. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", P60047795.9, Germany, issued on 1/16/2013.

130. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 1204587, France, issued on 1/16/2013.

129. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 1204587, Italy, issued on 1/16/2013.

128. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 1204587, Netherlands, issued on 1/16/2013.

127. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 1204587, European Patent Convention, issued on 1/16/2013.

126. "Active Micro-Channel Heat Exchanger", 0991465, France, issued on 12/5/2012.

125. "Active Micro-Channel Heat Exchanger", 0991465, Great Britain, issued on 12/5/2012.

124. "Active Micro-Channel Heat Exchanger", 69842906.0, Germany, issued on 12/5/2012.

123. "Active Micro-Channel Heat Exchanger", 0991465, European Patent Convention, issued on 12/5/2012.

122. "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 5111419, Japan, issued on 10/19/2012.

121. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 2,380,869, Canada, issued on 10/9/2012.

120. "Reactors having Varying Cross-Section, Methods of Making Same, and Methods of Conducting Reactions with Varying Local Contact Time", 5068005, Japan, issued on 8/24/2012.

119. "A Catalyst and Method of Steam Reforming", 2,438,714, Canada, issued on 7/17/2012.

118. "Staged Alkylation in Microchannels", ZL200580015453, P.R.China, issued on 6/20/2012.

117. "Carbon Nanotube-Containing Structures, Methods of Making, and Processes using Same", 2009200661, Australia, issued on 6/8/2012.

116. "Catalyst, Method of Making, and Reactions Using the Catalyst", 4982717, Japan, issued on 5/11/2012.

115. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", P60047180.2, Germany, issued on 5/9/2012.

114. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Great Britain, issued on 5/9/2012.

113. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, France, issued on 5/9/2012.

112. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, European Patent Convention, issued on 5/9/2012.

111. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Austria, issued on 5/9/2012.

110. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Belgium, issued on 5/9/2012.

109. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Denmark, issued on 5/9/2012.

108. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Italy, issued on 5/9/2012.

107. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Netherlands, issued on 5/9/2012.

106. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Switzerland, issued on 5/9/2012.

105. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1568412, Spain, issued on 5/9/2012.

104. "Catalyst Structure And Method Of Fischer-Tropsch Synthesis", 331868, Norway, issued on 4/23/2012.

103. "Chemical Reactor And Method For Catalytic Gas Phase Reactions", 2,641,757, Canada, issued on 3/20/2012.

102. "Active Micro-Channel Heat Exchanger", 4950160, Japan, issued on 3/16/2012.

101. "Structures Containing Carbon Nanotubes and a Sporous Support, Methods of Making the Same, and Related Uses", 2,470,025, Canada, issued on 2/21/2012.

100. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 295856, Mexico, issued on 2/9/2012.

99. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 4904480, Japan, issued on 1/20/2012.

99 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2,381,221, Canada, issued on 1/17/2012.

98 "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 4812993, Japan, issued on 11/9/2012.

99 "Microcombustors, Microreformers, and Methods for Combusting and for Reforming Fluids", 2,465,253, Canada, issued on 11/1/2011.

95. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 4805501, Japan, issued on 8/19/2011.

94. "Chemical Reactor, Process for a Catalytic Chemical Reaction with at Least one Gas Phase Reactant, Process for Hydrocarbon Steam Reforming and Process of Conducting a Chemical Reaction", PI0013342-6, Brazil, issued on 5/3/2011.

93. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2,381,156, Canada, issued on 4/19/2011.

89 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 330291, Norway, issued on 3/21/2011.

90 "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 330178, Norway, issued on 2/28/2011.

91 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 4669126, Japan, issued on 1/21/2011.

92 "Multilayered Catalyst and Method for Preparation Thereof", 4601822, Japan, issued on 10/8/2010.

88 "Catalyst Structure And Method Of Fischer-Tropsch Synthesis", 329355, Norway, issued on 10/4/2010.

87 "Methods of Making Pyrrolidones", 1412329, European Patent Convention, issued on 7/28/2010.

86 "Methods of Making Pyrrolidones", 1412329, France, issued on 7/28/2010.

85 "Methods of Making Pyrrolidones", 1412329, Great Britain, issued on 7/28/2010.

84 "Methods of Making Pyrrolidones", 60237157.0, Germany, issued on 7/28/2010.

83 "Methods of Making Pyrrolidones", 1412329, Belgium, issued on 7/28/2010.

82 "Methods of Making Pyrrolidones", 1412329, Netherlands, issued on 7/28/2010.

81 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Netherlands, issued on 4/14/2010.

80 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Finland, issued on 4/14/2010.

79 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Italy, issued on 4/14/2010.

78 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Switzerland, issued on 4/14/2010.

77 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Sweden, issued on 4/14/2010.

76 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Spain, issued on 4/14/2010.

75 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Portugal, issued on 4/14/2010.

74 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Austria, issued on 4/14/2010.

73 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, European Patent Convention, issued on 4/14/2010.

72 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", P60141809.3-08, Germany, issued on 4/14/2010.

71 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, Great Britain, issued on 4/14/2010.

70 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1251949, France, issued on 4/14/2010.

69 "Apparatus And Method For Separation/Purification Of Fluids Utilizing Rapidly Cycled Thermal Swing Sorption", 1392414, European Patent Convention, issued on 3/31/2010.

68 "Apparatus And Method For Separation/Purification Of Fluids Utilizing Rapidly Cycled Thermal Swing Sorption", 1392414, France, issued on 3/31/2010.

67 "Apparatus And Method For Separation/Purification Of Fluids Utilizing Rapidly Cycled Thermal Swing Sorption", 1392414, Great Britain, issued on 3/31/2010.

66 "Apparatus And Method For Separation/Purification Of Fluids Utilizing Rapidly Cycled Thermal Swing Sorption", 60235807.8, Germany, issued on 3/31/2010.

65 "Methods of Making Pyrrolidones", 10-0932250, Republic of Korea, issued on 12/8/2009.

64 "Apparatus And Method For Separation/Purification Of Fluids Utilizing Rapidly Cycled Thermal Swing Sorption", 2,446,503, Canada, issued on 11/24/2009.

63 "Active Micro-Channel Heat Exchanger", 4358914, Japan, issued on 8/14/2009.

62 "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 267940, Mexico, issued on 7/3/2009.

61 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 2,396,083, Canada, issued on 5/19/2009.

60 "Carbon Nanotube-Containing Structures, Methods of Making, and Processes using Same", 2002367020, Australia, issued on 3/5/2009.

59 "Chemical Reactor And Method For Catalytic Gas Phase Reactions", 2,381,154, Canada, issued on 2/3/2009.

58 "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 326281, Norway, issued on 11/32008.

57 "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 0835799, Republic of Korea, issued on 5/30/2008.

56 "Reactor and Process for Fischer-Tropsch Synthesis", 2005200564, Australia, issued on 4/24/2008.

55 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 2,338,576, Canada, issued on 4/15/2008.

54 "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 2005201074, Australia, issued on 1/31/2008.

53 "Microchannel Apparatus and Process Using a Microchannel Apparatus", 2005200598, Australia, issued on 12/20/2007.

52 "Multilayered Catalyst and Method for Preparation Thereof", 2,338,815, Canada, issued on 12/18/2007.

51 "Methods of Making Pyrrolidones", MY-134290A, Malaysia, issued on 11/30/2007.

50 "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 0716461, Republic of Korea, issued on 5/3/2007.

49 "Active Micro-Channel Heat Exchanger", 2,295,031, Canada, issued on 1/30/2007.

48 "Catalyst, Method of Making, and Reactions Using the Catalyst", 0670954, Republic of Korea, issued on 1/11/2007.

47 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 0666394, Republic of Korea, issued on 1/3/2007.

46 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1102628, European Patent Convention, issued on 11/29/2006.

45 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 69934231.7, Germany, issued on 11/29/2006.

44 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1102628, Great Britain, issued on 11/29/2006.

43 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 1102628, France, issued on 11/29/2006.

42 "Microcombustors, Microreformers, and Methods for Combusting and for Reforming Fluids", 1446609, France, issued on 9/20/2006.

41 "Microcombustors, Microreformers, and Methods for Combusting and for Reforming Fluids", 1446609, European Patent Convention, issued on 9/20/2006.

40 "Microcombustors, Microreformers, and Methods for Combusting and for Reforming Fluids", 1446609, Great Britain, issued on 9/20/2006.

39 "Microcombustors, Microreformers, and Methods for Combusting and for Reforming Fluids", 160214879.0, Germany, issued on 9/20/2006.

36 "Active Micro-Channel Heat Exchanger", 0566006, Republic of Korea, issued on 3/23/2006.

37 "Catalyst, Method of Making, and Reactions Using the Catalyst", 1206508, 03106178.8, Hong Kong, issued on 1/12/2006.

38 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206508, Italy, issued on 11/30/2005.

35 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206508, Netherlands, issued on 11/30/2005.

34. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 60024462.8, Germany, issued on 11/30/2005.

33. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206508, Great Britain, issued on 11/30/2005.

32. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206508, European Patent Convention, issued on 11/30/2005.

31. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206508, France, issued on 11/30/2005.

30. "Multilayered Catalyst and Method for Preparation Thereof", 1100618, France, issued on 9/7/2005.

29. "Multilayered Catalyst and Method for Preparation Thereof", 1100618, Great Britain, issued on 9/7/2005.

28. "Multilayered Catalyst and Method for Preparation Thereof", 69927162.2, Germany, issued on 9/7/2005.

27. "Multilayered Catalyst and Method for Preparation Thereof", 1100618, European Patent Convention, issued on 9/7/2005.

26. "Multilayered Catalyst and Method for Preparation Thereof", 1100618, Denmark, issued on 9/7/2005.

25. "Multilayered Catalyst and Method for Preparation Thereof", 1100618, Netherlands, issued on 9/7/2005.

24. "Catalyst, Method of Making, and Reactions Using the Catalyst", 2257955, Russian Federation, issued on 8/10/2005.

23. "Catalyst, Method of Making, and Reactions Using the Catalyst", ZL01804202.3, P.R.China, issued on 7/20/2005.

22. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1206316, Netherlands, issued on 6/29/2005.

21. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", P60021086.3-08, Germany, issued on 6/29/2005.

20. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1206316, Great Britain, issued on 6/29/2005.

19. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1206316, France, issued on 6/29/2005.

18. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1206316, European Patent Convention, issued on 6/29/2005.

17. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 1206316, Belgium, issued on 6/29/2005.

16. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 779528, Australia, issued on 5/26/2005.

15. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 779487, Australia, issued on 5/26/2005.

14. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 778040, Australia, issued on 3/10/2005.

13. "Catalyst, Method of Making, and Reactions Using the Catalyst", 778052, Australia, issued on 3/32005.

12. "A Method and Catalyst Structure for Steam Reforming of a Hydrocarbon", 225718, Mexico, issued on 1/21/2005.

11. "A Catalyst and Method of Steam Reforming", 2003/6076, South Africa, issued on 11/24/2004.

10. "Apparatus And Methods For Separation/Purification Utilizing Rapidly Cycled Thermal Swing Sorption", 201,424, Taiwan, issued on 11/8/2004.

9. "A Catalyst and Method of Steam Reforming", 206,889, Taiwan, issued on 11/4/2004.

8. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206509, European Patent Convention, issued on 10/6/2004.

7. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 1206509, Great Britain, issued on 10/6/2004.

6. "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", P60014671.5-08, Germany, issued on 10/6/2004.

5. "Active Micro-Channel Heat Exchanger", 222613, Mexico, issued on 9/10/2004.

4 "Multilayered Catalyst and Method for Preparation Thereof", 218,981, Mexico, issued on 2/4/2004.

3 "Method And Apparatus For Obtaining Enhanced Production Rate Of Thermal Chemical Reactions", 218,982, Mexico, issued on 2/4/2004.

2 "Catalyst Structure And Method Of Fischer-Tropsch Sythesis", 2002/0853, South Africa, issued on 7/30/2003.

1. "A Chemical Reactor And Method For Gas Phase Reactant Catalytic Reactions", 2002/0864, South Africa, issued on 7/30/2003.

Selected Invited Presentations (since 2001)

Conferences

1. "Tailoring Metal-Oxide Interfaces for Catalytic Activity Enhancement", The 12th Singapore International Chemistry Conference, Singapore, Dec. 9-13, 2024 (keynote).
2. "Biomass-derived oxygenates conversion: Active sites in oxygen elimination and C-C bond formation", Sydney Sustainability Symposium, Sydney, Australia, Nov. 18-20, 2024 (keynote).
3. "Complete Oxidation of Hydrocarbons on Single Atom Catalysts", 2024 CATL Exceptional Achievement Award: Symposium in honor of Abhaya Datye, ACS Fall 2024, August 18-22, 2024, Denver, Co (invited).
4. "NOx Reduction on Single Atom Catalysts", George A. Olah Award in Hydrocarbon or Petroleum Chemistry: Symposium in honor of Umit Ozkan, ACS Fall 2024, August 18-22, 2024, Denver, Co (invited).
5. "Single Atom Catalysts for Environmental Applications", Dionysios D. Dionysiou Memorial Symposium: Celebrating a Legacy of Innovation in Advanced Oxidation Processes for Water Treatment: Catalysis & Emerging Contaminants, ACS Fall 2024, August 18-22, 2024, Denver, Co (invited).
6. "Enhancing Activity Through Tailored Metal-Support Interactions", ACS Fall 2024, August 18-22, 2024, Denver, Co (keynote)
7. "Biomass-derived Oxygenates Conversion: Active Sites in Oxygen Elimination and C-C Bond Formation", ACS Fall 2024, August 18-22, 2024, Denver, Co (keynote)
8. "Towards biomass deoxygenatin", CRC-Elsevier Catalysis Symposium: Catalysis in A Changing Environment – Linking Fundamental Aspect to Engineering, Technical University of Munich, July 21-23, 2024 (invited)

9. "Dynamics of Thermally Stable Single Atom Catalysts", 18th International Congress on Catalysis, Lyon, France, July 14-19,2024 (invited)
10. "Thermally Stable Single-atom Catalysts for Catalytic Applications", Taiwan International Conference on Catalysis, Taipei, June 19-21, 2024 (plenary).
11. "Catalytic Upgrading of Biomass-derived Oxygenates", Singapore Catalysis Society Forum 2024, May 13, 2024 (plenary).
12. "Dynamics of Supported Metal Catalysts", 13th Natural Gas Conversion Symposium, Xiamen, China, April 21-24, 2024 (keynote)
13. "Unlocking Earth-Abundant Fe Catalysts in Biomass Conversion", symposium celebrating 20th anniversary of University of Kansas CEBC Center, ACS 2024 Spring Meeting, New Orleans, March 20, 2024 (invited).
14. "Harnessing Atom Trapping: Enabling Single-atom Catalysts for Catalytic Applications", Single atom catalysis symposium, ACS 2024 Spring Meeting, New Orleans, March 17, 2024 (Keynote).
15. "Harnessing Atom Trapping: Enabling Single-atom Catalysts for Catalytic Applications", 9th Asia-Pacific Congress on Catalysis (APCAT-9), Hangzhou, China, Oct. 30-Nov.3, 2023 (plenary).
16. "Single-Atom Catalysts with Exceptional Thermal Stability for Catalytic Applications", The 4th International Symposium on Catalytic Science and Technology in Sustainable Energy and Environment (EECAT2023), Beijing, October 16-18, 2023 (plenary).
17. "Harnessing Atom Trapping: Enable Single-Atom Catalysts for Catalytic Applications", ITICAT-2023, pre-conference of Europacat, Helsinki, Finland, Aug. 24-26, 2023 (plenary).
18. "Improving Hydrogenation Selectivity of Biomass-derived Phenolics with Homogeneous-like Ligands on Pd-based Heterogeneous Catalysts", Symposium on Conversion of Biomass and Waste Carbon Sources to Fuels and Products, Catalysis Science and Technology Division, ACS Fall Meeting, Aug. 13-17, 2023 (keynote).
19. "Driving Sustainability in Chemical Transformations with Earth-Abundant Fe and Single Atom Catalysts", 15th Global Chinese Chemical Engineering Symposium (GCCES-2023), Aug. 4-9, 2023, Hong Kong (plenary).
20. "Thermally stable single atom catalysts", 7th International Conference on Catalysis and Chemical Engineering February 20-22, 2023, Las Vegas, NV (plenary).
21. "Thermally Stable and Highly Active Single Rh Atom Catalysts (Rh1/ceria) for NO Reduction", Symposium in Honor of Norbert Kruse's Birthday, 2022 AIChE Fall Meeting, Phoenix, AZ, Nov. 13, 2022 (invited).
22. "Earth abundant Fe-based catalysts for hydrodeoxygenation", 2022 TSRC Catalysis workshop on theory and practice, Telluride, Co, July 25-29, 2022 (invited).
23. "Thermally stable single atom catalysts", 27th North American Catalysis Society Meeting, New York City, May 22-27, 2022 (keynote).
24. "Thermally Stable Single Atom Catalysts", Michigan Catalysis Society, Nov. 1, 2021 (invited, virtual).
25. "Biomass upgrading using earth abundant Fe-based catalysts", Catalysis Club of Philadelphia, Oct. 25, 2021 (invited, virtual).
26. "Single atom catalysts for automotive aftertreatment", New York Catalysis Club, Oct. 21, 2020 (invited, virtual).

27. "Greatly Reduced Vehicle PGM Content Using Engineered, Highly Dispersed Precious Metal Catalysts", Panelist presented in Panel Discussion: Utilization of Platinum Group Metals in Emissions Control Catalysts, 2020 CLEERS Workshop, Sept 14-19,2020 (invited, virtual).
28. "Low temperature methane oxidation", invited presentation to The Advanced Combustion and Emission Control (ACEC) Technical Team, May 14, 2020 (invited, virtual).
29. "Conversion of biomass-derived C2 and C3 oxygenates to fuels and chemicals", The 2nd International Symposium on Biomass Utilization Technologies, Hangzhou, China Nov. 22-24, 2019 (plenary).
30. "Innovative Catalytic Materials of Industrial Relevance", 2019 AIChE Annual Fall Meeting, Orlando, Nov. 13, 2019 (invited).
31. "Synthesis of High Metal Loading Thermally Stable Pt/CeO2 Single Atom Catalysts and Activation of O2 for Low Temperature CO Oxidation", Symposium on Advances in Catalysis with Ceria & Other Reducible Oxides, 2019 ACS Fall Meeting Aug 25, 2019, San Diego (keynote).
32. "Aldolization (C-C Coupling) of Biomass-Derived C2 and C3 Oxygenates", Symposium on catalytic conversion of biomass-derived oxygenates, 2019 ACS Fall Meeting, Aug. 26, 2019, San Diego (keynote).
33. "Opportunities and challenges with new energy sources", The 11th Global Chinese Chemical Engineers Symposium, Chengdu, China, Aug. 2-4, 2019 (plenary).
34. "Mechanistic Understanding of Methanol Carbonylation: Interfacing Homogeneous and Heterogeneous Catalysis via Carbon Supported Ir-La", 12th Natural Gas Conversion Symposium, San Antonio, June 5, 2019 (invited).
35. "Robust supported metal catalysts", ENFL Distinguished Research Award: Symposium in Honor of Anne Gaffney, 257th ACS National Meeting in Orlando, April 4, 2019 (invited).
36. "Single Facet Dominated Anatase Titania Model Catalysts to Elucidate the Active Sites for O Elimination and C-C Bond Formation", 257th ACS National Meeting in Orlando, April 2, 2019 (keynote).
37. "Earth-abundant Fe Catalysts for Selective Hydrodeoxygenation", 257th ACS National Meeting in Orlando, April 1, 2019 (keynote).
38. "Tailoring the activity of Pt/CeO2 catalysts via high temperature synthesis", symposium In honor of Sheng Dai's ACS National Award in Separation, 257th ACS National Meeting in Orlando, March 31, 2019 (invited).
39. "Tailoring the activity of Pt/CeO2 catalysts via high temperature synthesis", symposium celebrating Chuck Mims' 73rd birthday, CSChE2018, Oct. 28-31, 2018, Toronto, Canada (invited).
40. "Mechanistic understanding of methanol carbonylation: Interfacing homogeneous and heterogeneous catalysis via carbon supported Ir-La", 256th ACS National Meeting in Boston, MA, August 22, 2018 (keynote).
41. "Mechanistic understanding of C-C bond formation and O removal over Lewis acid-base pairs", 256th ACS National Meeting in Boston, MA, August 22, 2018 (keynote).
42. "Tailoring the activity of Pt/CeO2 catalysts via high temperature synthesis", 256th ACS National Meeting in Boston, MA, August 21, 2018 (keynote).
43. "Single-facet dominant anatase TiO2 (101) and (001) model catalysts to elucidate the active sites for alkanol dehydration", 256th ACS National Meeting in Boston, MA, August 20, 2018 (keynote).
44. "Stabilization of supported metal catalysts – atomically dispersed Pt/CeO2 for CO oxidation", Catalysis Workshop, Berkshires, MA, USA, Aug. 14-17, 2018 (invited).

45. "Earth abundant Fe based catalysts for hydrodeoxygenation of biomass-derived phenolics", Green Chemistry Gordon Research Conference, Barcelona, Spain, July 29-Aug. 3, 2018 (invited).
46. "Understanding and Design of Metal Based Catalysts", 2018 ACS Spring Meeting, Symposium in honor of Yong Wang's I&EC Division Fellow Award, New Orleans, March 18, 2018.
47. "Stabilization and Activation of Single Atom Pt/CeO2 Catalysts for Low Temperature CO Oxidation", US DOE Advanced Engine Crosscut Meeting, Detroit, US, Jan. 11, 2018 (invited).
48. "Highly Stable and Active Supported Metal Catalysts for CO Oxidation", SUCE 2017 (Sino-US Chemical Engineering Conference), Beijing, China, Oct. 18, 2017 (keynote).
49. "Low Temperature Emission Abatement to Enable Advanced Engines", 18th National Congress of Catalysis, Tianjin, China, Oct. 17, 2017 (keynote).
50. "Hydrothermally Stable Pt/CeO2 Catalysts for Low Temperature CO Oxidation", 2017 Europacat, Florence, Italy, Aug. 28, 2017 (invited).
51. "Single Facet Nano-shaped Materials as Model Catalysts for Alcohol Conversion", 2017 ACS Fall Meeting, DC, Aug. 21, 2017 (keynote).
52. "Cascade Aldolization and Self-deoxygenation over ZnxZryOz Mixed Oxides", 2017 ACS Energy & Fuels Storch Award Symposium in honor of Umit S. Ozkan, DC, Aug. 20, 2017 (invited).
53. "Low Temperature Emission Abatement to Enable Advanced Engines", 2017 MCARE – Materials Challenges in Alternative and Renewable Energy, Jeju, Korea, Feb. 20-24, 2017 (Keynote).
54. "Catalytic Conversion of Biomass-derived Oxygenates to Olefins for Fuel and Chemical Production", 3rd Solar Fuels I-CORE Workshop, Sept. 12-15, 2016, Nahsholim, Israel (keynote).
55. "Thermochemical conversion of biomass to fuels/chemicals", 252nd ACS National Meeting, Symposium for Catalysts and Catalytic Technologies for Conversion of Biomass and Its Derivatives of Division of Catalysis Science and Technology, Philadelphia, Aug.22, 2016 (keynote).
56. "Fundamental Understanding of Acid-Base Catalysis for the Upgrading of Biomass-derived Feedstocks", 252nd ACS National Meeting, Biomass symposium of Division of Energy and Fuels, Philadelphia, Aug.21, 2016 (keynote).
57. "Conversion of oxygenates on early transition metal oxides", 252nd ACS National Meeting, Mixed Oxide Catalysts Symposium of Division of Catalysis Science and Technology, Philadelphia, Aug. 21, 2016 (keynote).
58. "Fundamental Understanding of ZnO Doped ZrO2 Surface for C-C Bond Formation and Deoxygenation of Biomass-derived Oxygenates", Post 16th ICC Symposium on Conversion of Energy Molecules, Xiamen University, July 11-12, 2016 (keynote).
59. "Mechanistic Understanding of Fe-based Catalysts for Hydrodeoxygenation of Biomass-derived Phenolics", 16th International Congress of Catalysis, Beijing, China, July 2-9, 2016 (invited).
60. "Synergistic Catalysis of Fe Based Bimetallic Catalysts for Hydrodeoxygenation of Lignin Derived Compounds", Gordon Research Conference, June 22-26, 2016 (keynote).
61. "Fundamental Understanding of ZnO Doped ZrO2 Surface for C-C Bond Formation and Deoxygenation of Biomass-derived Oxygenates", 251st ACS National Meeting, Mixed Metal Oxide Symposium of Division of Catalysis Science and Technology, San Diego, March 14, 2016 (keynote).
62. "Rational Design of ZnxZryOz Catalysts for the Conversion of Ethanol to Isobutene with Improved Selectivity and Stability", 251st ACS National Meeting, I&EC: Industrial & Engineering Fellow: Symposium in honor of Bala Subramaniam, San Diego, March 13, 2016 (invited).

63. "Synergistic catalysis of Fe based bimetallic catalysts for hydrodeoxygenation of lignin derived compounds", Sustainable Conversion of Lignin to Value-Added Products and Green Chemicals Symposium, Pacifichem 2015, Honolulu, Hawaii, Dec.15-20, 2015 (keynote).
64. "Innovation in catalysis and reaction engineering for the conversion of biomass intermediates to fuels", 5th Asia-Pacific Forum on Renewable Energy, Jeju, Korea, Nov.4-7, 2015 (keynote).
65. "Innovations in catalysts and reaction engineering for thermal chemical conversion of biomass-derived intermediates to chemicals and fuels", 65th Canadian Chemical Engineering Conference, Calgary, AB, Oct. 4-7, 2015 (keynote).
66. "Bimetallic Pt-M catalysts for aqueous phase reforming of glycerol", Symposium on innovative chemistry & electrocatalysts for low-carbon energy & fuels: discovery to application, 250th ACS Fall meeting, Boston, MA, Aug. 16-20, 2015 (keynote).
67. "Rational design of ZnxZryOz catalyst for direct conversion of biomass-derived oxygenates to olefins", Catalysis by Mixed Oxides symposium, 250th ACS Fall meeting, Boston, MA, Aug. 16-20, 2015 (keynote).
68. "Molecular active sites in heterogeneous Ir-La/C catalyzed carbonylation of methanol to acetates", E.V.Murphree Award in Industrial & Engineering Chemistry: Symposium in Honor of Joseph R. Zoeller, 2015 ACS Spring Meeting, Denver, March 25, 2015 (invited).
69. "Role of HZSM-5 in converting syngas derived alcohols and oxygenates to hydrocarbon fuels", Biofuels for powering the world symposium, 248th ACS meeting, San Francisco, Aug. 12, 2014 (keynote).
70. "Hydrodeoxygenation of phenolics via noble metal promoted Fe catalysts: a combined experimental and theoretical investigation", Catalysis for biomass conversion symposium, 248th ACS Meeting, San Francisco, Aug. 12, 2014 (keynote).
71. "Mechanistic insights on Pd-Fe bimetallic catalysts for hydrodeoxygenation of lignin-derived compounds", joint Japan-China workshop in catalysis, Jan. 6, 2014 (invited).
72. "Thermal-chemical conversion of biomass to fuels", 3rd Sino-US Advanced Biofuels Forum, Beijing, China, Dec. 9-10, 2013 (invited).
73. "Conversion of biomass derivatives to fuels/chemicals", 7th Sino-US Chemical Engineering Conference, Beijing, China, Oct. 14-18, 2013 (keynote).
74. "Carbon supported bimetallic Pd-Fe catalysts for vapor-phase hydrodeoxygenation of guaiacol", ACS Fall Meeting, Indianapolis, Sept. 8-12, 2013 (keynote).
75. "Conversion of biomass derivatives to fuels and chemicals", ACS Fall Meeting, Indianapolis, Sept. 8-12, 2013 (keynote).
76. "Thermochemical conversion of biomass intermediates to fuels/chemicals", Symposium in honor of Anne Gaffney as a recipient of the ACS Industrial Chemistry Award, 2013 ACS Spring Meeting, New Orleans, April 7-11, 2013 (invited).
77. "Thermochemical conversion of carbon source intermediates: syngas to fuels", 2012 Asia-Pacific Forum on Renewable Energy, Jeju, Korea, Nov. 26-29, 2012 (keynote).
78. "Ethanol conversion on ZrO2: the roles of Lewis and Bronsted sits", 2012 AIChE Fall Meeting, Oct. 28-Nov.1, 2012 (invited).
79. "Hydrodeoxygenation of biomass-derived compounds to biofuels", 2012 AIChE Fall Meeting, Symposium in honor of Prof. Enrique Iglesia, Pittsburgh, Oct. 28-Nov. 1, 2012 (invited).
80. "Plasma treated Ni/SiO_2 methanation catalysts", 2012 International Symposium on Plasma for Catalysis and Energy Materials", Tianjin, China, Sept. 22-24, 2012 (plenary).

81. "Vapor phase hydrodeoxygenation of biomass derived compounds to biofuels", 2012 ACS Fall meeting, symposium honoring Umit Ozkan, Philadelphia Aug. 22, 2012 (invited).
82. "Thermochemical conversion of biomass intermediates to fuels/chemicals", 2012 spring symposium of Catalysis Club of Chicago, Naperville, IL, May 15, 2012 (plenary).
83. "Hydrogen production from biomass", DOE H2 Production Expert Panel, DC., May 11-12, 2012 (invited).
84. "Nanostructured catalysts for energy conversion applications", Symposium on Materials for Catalysis in Energy, 2012 MRS Spring Meeting, San Francisco, April 12, 2012 (keynote).
85. "Investigation of active sites for ethanol conversion", Gabor A. Somorjai Award for Creative Research in Catalysis and the George A. Olah Award in Hydrocarbon or Petroleum Chemistry: Symposium in Honor of Enrique Iglesia and James A. Dumesic, 2012 ACS Spring Meeting, San Diego, March 28, 2012 (invited).
86. "Thermochemical conversion of biomass intermediates to fuels/chemicals", Symposium on Fuels, Chemicals, Materials, and Energy from Biomass, Coal, Natural Gas, and Other Natural Resources, 2012 ACS Spring Meeting, San Diego, March 26, 2012 (keynote).
87. "Metal oxide promoted catalysts for clean energy conversion", Symposium on Catalysis for Clean Energy Technologies, 2012 ACS Spring Meeting, San Diego, March 28, 2012 (keynote).
88. "Conversion of bio-derived intermediates to fuels/chemicals", 2011 Washington Future Energy Conference, Seattle, Oct. 18-19, 2011 (invited).
89. "Conversion of bio-ethanol to fuels and chemicals", Symposium in honor of Chunshan Song's award, ACS Fall Meeting, Denver, Aug. 29, 2011 (invited).
90. "Aqueous phase conversion of biomass to hydrogen", Symposium of Challenges in Environmental Catalysis, Pacifichem, Honolulu, Dec. 17, 2010 (invited).
91. "Roles of Pt-Re catalysts in biomass conversion", ACS Fall Meeting, Boston, Aug. 22-26, 2010 (Keynote).
92. "Direct conversion of ethanol to isobutene", ACS Fall Meeting, Boston, Aug. 22-26, 2010 (Keynote).
93. "Conversion of Biomass to Fuels and Chemicals", ORCAS 2010 Conference, San Juan Islands, Sept 19-22, 2010 (Keynote).
94. "Overview of biomass conversion", WTIA Program, Seattle, June 3, 2010 (first WSU presenter invited to speak at a WTIA program).
95. "Biomass conversion to fuels and chemicals", Korean Catalysis Society Conference, Pushan, June 2010 (plenary).
96. "Perspective on biofuels from biomass", Annual EPSCoR Conference, Oklahoma City, OK, April 29-30, 2010 (plenary).
97. "Synthesis and fundamental understanding of catalytic materials for sustainable energy", 2010 ACS Spring Meeting, San Francisco, March 21-25, 2010 (keynote).
98. "Bimetallic catalysts for reforming of bio-derived liquids", 2010 ACS Spring Meeting, San Francisco, March 21-25, 2010 (keynote).
99. "Biomass conversion to fuels and chemicals", International Symposium on Sustainable Energy: Challenges and Opportunities (ISSE2010), Beijing, China, Feb. 7-8, 2010 (plenary).
100. "DOE perspective on biofuels from biomass", International Seminar for Bioenergy & Biofuels, Beijing, China, Dec, 3rd, 2009 (plenary).

101. "Microchannel enabled process intensification for distributed production of chemicals and fuels", 2009 AIChE meeting, Nashville, Tennessee, Nov.8-13, 2009 (invited).
102. "Collaborative initiatives of PNNL with China in clean energy conversion", 2009 AIChE meeting, Nashville, Tennessee, Nov.8-13, 2009 (invited).
103. "Preparation and characterization of nano-dispersed early transition metal oxide catalysts", The 5th Sino-US Joint Conference of Chemical Engineering, Beijing, China, Oct. 12-16, 2009 (keynote).
104. "Catalytic conversion of biomass to fuels and chemicals: hydrogen production from bio-derived liquids on bimetallic catalyst", The 5th Sino-US Joint Conference of Chemical Engineering, Beijing, China, Oct. 12-16, 2009 (invited).
105. "Bimetallic catalysts for hydrogen production from bio-derived liquids", 17th International Material Research Conference, Cancun, Mexico, Aug. 17-21, 2009 (Keynote).
106. "Biomass to fuels and chemicals", Chicago Catalysis Society Symposium, April 13, 2009 (keynote).
107. "Fuels and chemical production using microchannel reaction technologies", 2008 International Workshop on Process Intensification, Tokyo, Japan, Oct. 15-18, 2008 (Keynote).
108. "Overview of biomass conversion to fuels and chemicals", International Symposium on Catalysis for Ultra Clean Fuels, Dalian, China, July 21-24, 2008 (keynote).
109. "Structural and Functional Relationship of Early Transition Metal Oxides", 14th International Congress of Catalysis, Seoul, Korea, July 11, 2008 (invited).
110. "Bimetallic catalysts for steam reforming of alcohols", Nano Catalysis: Fundamentals and Applications, Dalian. China, July 9-11, 2008 (invited).
111. "Roles of catalysis in conserving fossil resources", International Material Research Society Meeting, Chongqing, China, June 9-12, 2008 (Keynote).
112. "Hydrogen production from bio-derived liquids", 2008 Purdue Hydrogen Symposium, Purdue University, April 23-25, 2008 (Keynote).
113. "Overview of biomass to hydrogen production", 2008 ACS Symposium on Hydrogen Production, New Orleans, March, 2008 (Keynote).
114. "Overview of catalytic conversion of biomass to fuels and chemicals", 4th Joint Japan-China Chemical Engineering Conference, Dec. 19-21, 2007 (plenary).
115. "Overview of biomass conversion to fuels and chemicals", Michigan Catalysis Society annual meeting, Oct. 16, 2007 (keynote).
116. "Catalytic processes for biomass conversion to fuels and chemicals: an overview", 2007 symposium on biomass conversion and environmental catalysis organized by Japan Science and Technology, Catalysis Research Center, Hokkaido University, July 13-14, Sapporo, Japan (plenary).
117. "Hydrogen Production via Bio-derived Liquids Reforming", U.S. Department of Energy Bio-Derived Liquids to Hydrogen Distributed Reforming Workshop, October 24, 2006, Baltimore, Maryland (invited).
118. "Alcohol Steam Reforming for Hydrogen Production", 2006 Annual Pacific Coast Catalysis Society Meeting, September 8, 2006 (keynote).
119. "Overview of Microreactor and Process Intensification", 2006 AIChE Spring Annual Meeting, Orlando, April, 2006 (keynote).
120. "Aqueous Phase Reforming of Biomass for Hydrogen Production", 2006 ACS Spring Meeting, Atlanta, March 26, 2006 (keynote).

121. "Hydrogen Production from Non-Nuclear Sources", Hydrogen Production Workshop organized by National Tsing Hua University, Taiwan, Dec.14, 2005 (keynote).
122. "Steam Reforming of Hydrocarbon Fuels for Hydrogen Production." Third China-US-Japan Chemical Engineering Conference, Beijing, China on October 13, 2005 (invited).
123. "Steam reforming of alcohols for hydrogen production," ACS 2005 Fall Meeting, Washington DC, DC on August 29, 2005 (keynote).
124. "Process Intensification of Gas-To-Liquids Fischer-Tropsch Synthesis Using Microchannel Reactors", 229th ACS George A.Olah Award Symposium in Honor of Enrique Iglesia, San Diego, CA, March 13-15, 2005 (invited).
125. "Characterization and activity of PdZn based catalysts for microchannel fuel processing applications", 1st Pacific Coast Catalysis Conference, Berkeley, CA, March 11., 2005 (invited).
126. "Steam Reforming Catalysts for Microchannel Reactors", ACS Microreaction Engineering and Process Intensification Symposium, New York City, Sept.8-9, 2003 (invited).
127. "Intensification of Fischer-Tropsch Synthesis Using Microchannel Reactors", Catcon2003, Houston, May 5-6, 2003 (invited).
128. "Fuel Processors Based on Microchannel Technology", 1st International Symposium on Ultracompact Chemical Process Systems, Seoul, Korea, Feb. 25-26, 2002 (keynote).
129. "Functionalization of Acidic Groups on MCM-41 Silica", 1st International Catalysis Workshop for Young Scientists, Beijing, China, Sept. 24-28, 2001 (keynote).

Universities/National Labs

1. "Catalysis: Advancing Affordable and Clean Energy", 2025 Distinguished Faculty Address, Washington State University, March 25, 2025.
2. "Catalysis: Advancing Affordable and Clean Energy", invited seminar at RIKEN Center for Sustainable Resource Science, Advanced Catalysis Research Group, Japan, March 12, 2025.
3. "Catalysis: Advancing Affordable and Clean Energy", invited seminar at BASE of Institute of Engineering, Tokyo University of Agriculture and Technology, March 10, 2025.
4. "Thermally Stable Single-atom Catalysts for Catalytic Processes", Seminar at Department of Chemistry, Colorado School of Mines, Golden, Colorado, Feb. 7, 2025.
5. "Challenges and Opportunities in Decarbonization", Opening Address at A*STAR Decarbonisation Ideation Workshop, Singapore, Dec. 13, 2024.
6. "Thermally Stable Single-atom Catalysts for Catalytic Processes", College of Engineering Distinguished Speaker Lecture Series 2024, Nanyang Technological University, Dec. 5, 2024.
7. "Dynamics of Supported Metal Catalysts", invited seminar at Chemical and Environmental Engineering Department, UC Riverside, CA, November 1, 2024.
8. "Decarbonization through Catalysis Innovations", invited seminar at the Institute of Sustainability for Chemicals, Energy and Environment, A@STAR, Singapore, October 15, 2024.
9. "Conversion of Biomass-derived Oxygenates to Fuels/Chemicals", Carbon Neutral Institute International Webinar, Ulsan National Institute of Science and Technology (UNIST), South Korea, September 12, 2024.
10. "Earth-abundant Fe Catalysts for the Conversion of Biomass", National Taiwan University of Science and Technoloy, June 19, 2024.
11. "Catalytic Upgrading of Biomass-derived Oxygenates", National Cheng Kung University, June 13, 2024.

12. "Harnessing Atom Trapping: Enable Single-atom Catalysts for Catalytic Applications", Distinguished Seminar Series at the Institute of Sustainability for Chemicals, Energy and Environment, A@STAR, Singapore, Feb. 27, 2024) (Distinguished Seminar).
13. "Earth-abundant Fe-based Catalysts for the Conversion of Biomass-derived Oxygenates", Seminar at the School of Material Science and Engineering, Nanyang Technical University, Singapore, Feb. 27, 2024.
14. "Thermally Stable Single-atom Catalysts for Catalytic Applications", Distinguished Seminar Series at the Department of Chemical and Biological Engineering, National University of Singapore, Feb. 26, 2024 (Distinguished Lectureship).
15. "Earth abundant Fe-based catalysts for biomass conversion", Cain Chemical Engineering Department, Louisiana State University, Jan. 27, 2023.
16. "Thermally stable single atom catalysts", Monash University, Clayton, Australia, Dec. 15, 2022.
17. "Thermally stable single atom catalysts", University of Sydney, Dec. 1, 2022.
18. "Earth abundant Fe based catalysts for hydrodeoxygenation of biomass-derived lignins" Platinum Seminar Series, Monash University, July 8, 2021 (virtual).
19. "Highly Active and Durable Single Atom Pt/CeO2 Catalysts for CO oxidation", Seoul National University, Seoul, Korea, Dec. 6, 2019.
20. "Conversion of Biomass-Derived C2 and C3 Oxygenates to Olefins", Korea Institute of Energy Research, Daejeon, Korea, Dec. 4, 2019.
21. "Highly Active and Durable Single Atom Pt/CeO2 Catalysts for CO oxidation", Monash University, July 12, 2019.
22. "Highly Active and Durable Single Atom Pt/CeO2 Catalysts for CO oxidation", China University of Petroleum, May 16, 2019.
23. "Highly Active and Durable Single Atom Pt/CeO2 Catalysts for CO oxidation", Beijing University of Technology, May 15, 2019.
24. "Highly Active and Durable Single Atom Pt/CeO2 Catalysts for CO oxidation", Hunan University, China, Dec. 3, 2018.
25. "Highly Active and Durable Single Atom Pt/CeO2 Catalysts for CO oxidation", Qingdao University of Science and Technology, China, Nov. 30, 2018.
26. "Single atom catalysis by atom trapping", Fuzhou University, Oct. 10, 2018.
27. "Single atom catalysis by atom trapping", 59th Chemical Engineering Lecture Series, Sichuan University, Oct. 8, 2018.
28. "Thermally Stable and Regenerable Single Atom Catalysts by Atom Trapping"， Fudan University, July 13, 2018.
29. "Thermally Stable and Regenerable Single Atom Catalysts by Atom Trapping"， Arizona State University, April 16, 2018.
30. "Earth-abundant Fe Catalysts for the Conversion of Biomass", Shanghai University of Engineering Technology, Shanghai, China, Dec. 1, 2017.
31. "Precious Metal Promoted Fe Catalysts for Hydrodeoxygenation of Phenolics", ShanXi Normal University, Xi'an, China, Oct. 13, 2017.
32. "Innovations in Catalysis and Reaction Engineering for Thermochemical Conversion of Biomass-derived Intermediates to Fuels/Chemicals", Central South University of Nationalities, Wuhan, China, May 25, 2017.

33. "Innovations in Catalysis and Reaction Engineering for Thermochemical Conversion of Biomass-derived Intermediates to Fuels/Chemicals", College of Chemistry, Zhejiang University, Dec. 16, 2016.
34. "Thermochemical Conversion of Biomass to Fuels/Chemicals", Southwest University of Petroleum, Sept. 30, 2016.
35. "Catalytic Conversion of Oxygenates on Early Transition Metal Oxides", Sichuan University, Sept. 28, 2016.
36. "Fundamental Understanding of Bimetallic and Acid-base Catalysis for the Upgrading of Biomass-derived Feedstocks", University of Delaware, Sept. 2, 2016.
37. "Conversion of Biomass to Fuels/Chemical: Status and Perspectives", Hong Kong University of Science and Technology, March 5, 2016.
38. "Upgrading of biomass-derived feedstocks", Oak Ridge National Laboratory, Oct. 23, 2015.
39. "Fundamentals of selective oxygen removal from biomass intermediates", Department of Chemistry, University of Tennessee, Knoxville, Oct. 22, 2015.
40. "Elucidation of the roles of support for selective oxidation of hydrocarbons on VOx catalysts", Free University of Brussels, Brussels, July 17, 2015.
41. "Synergistic catalysis between Fe and precious metals for hydrodeoxygenation of phenolics", Department of Chemistry, Fuzhou University, Fuzhou, China, March 16, 2015.
42. "Heterogenization of homogeneous Ir based catalysts for methanol carbonylation", School of Chemical Engineering, Sichuan University, Jan. 20, 2015.
43. "Catalysis in aqueous phase: reforming of glycerol", School of Chemical Engineering, Tianjin University, Oct. 8, 2014.
44. "Thermochemical conversion of carbon source intermediates: syngas to fuels", Dalian Institute of Chemical Physics, Dalian, Aug. 23, 2014.
45. "Synergistic effects between Pd and Fe for selective hydrodeoxygenation of lignin-derived compounds", School of Chemical Engineering, Tianjin University, July 16, 2014.
46. "Vox/CeO2 catalysts for oxidative dehydrogenation (ODH) of methanol – effects of CeO2 facets", School of Chemical Engineering, Tianjin University, July 15, 2014.
47. "Recent catalysis research at Wang Group", College of Chemical Engineering, Beijing University of Chemical Technology, Beijing, July 14, 2014.
48. "Innovations in catalysis and reaction engineering for thermal chemical conversion of biomass-derived intermediates to fuels/chemicals", College of Life Sciences and Technology, Beijing University of Chemical Technology, Beijing, July 14, 2014.
49. "Recent catalysis research at Wang Group", School of Chemical Engineering, Sichuan University, July 2, 2014.
50. "Innovations in catalysis and reaction engineering for thermal chemical conversions of biomass-derived intermediates to chemicals", Provost Bold Aspiration Lecture Series, University of Kansas, Feb. 17, 2014.
51. "Catalytic conversion of biomass intermediates to fuels and chemicals", Leibnitz of Catalysis, Rostock, Germany, Aug.30, 2013.
52. "Biomass derivatives to fuels and chemicals", Xiamen University, Xiamen, China, April 27, 2013.
53. "Conversion of biomass derivatives to fuels and chemicals", East China University of Science and Technology, Shanghai, China, April 24, 2013.

54. "Catalyst design for biomass conversion to fuels and chemicals", PNNL, Dec. 4, 2012.
55. "Overview of the conversion of biomass intermediates to fuels/chemicals", Tsinghua University, June 21, 2012.
56. "Biomass conversion to fuels/chemicals", Peking University, Beijing, China, June 12, 2012.
57. "Nanostructured catalysts: application for renewable biomass conversion and PEM fuel cells", Xiamen University, China, March 19, 2012.
58. "Thermochemical conversion of biomass intermediates to fuels/chemicals", Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, March 17, 2012.
59. "Ethanol steam reforming: active sites for Co based catalysts", Tianjin University, March 10, 2012.
60. "One step conversion of bio-ethanol to isobutene), Tianjin University, Aug. 15, 2011.
61. "Nanostructured catalysts: applications for renewable biomass conversion and PEM fuel cells", Sichuan University, Chengdu, China, Aug. 11, 2011.
62. "Biomass conversion to fuels and chemicals", Dept. of Chemical Engineering, University of Oklahoma, April 29, 2010.
63. "Hydrogen production from bio-derived liquids", Dept. of Chemical Engineering, University Pennsylvania, Philadelphia, March 31, 2010.
64. "Overview of biomass conversion to fuels and chemicals", Department of Material Engineering, University of Washington, June 1, 2009.
65. "Overview of thermochemical conversion of biomass to fuels", Voiland School of Chemical Engineering and Bioengineering, Washington State University, Feb.9, 2009.
66. "Catalysis in biomass conversion", Technical University of Munich, Munich, Germany, Oct. 30, 2008.
67. "Steam reforming for hydrogen production on bimetallic catalysts", ChE Department, Sichuan University, June 16, 2008.
68. "Catalytic conversion of biomass to fuels and chemicals", ChE Department, University of Minnesota, May 23, 2008.
69. "Alcohol steam reforming for hydrogen production", Tsinghua University, April 26, 2007, Beijing, China.
70. "Fundamental understanding of bimetallic catalysts for alcohol steam reforming", Tianjin University, April 24, 2007, Tianjin, China.
71. "Hydrogen production from alcohol steam reforming", Dalian Institute of Chemical Physics, April 19, 2007, Dalian, China.
72. "Bimetallic catalysts for alcohol steam reforming", Fudan University, April 16, 2007, Shanghai, China
73. "Bimetallic steam reforming catalysts for hydrogen production", Argonne National Laboratory, March 23, 2007.
74. "Challenges in Hydrogen Production", Korea University, Nov. 7, 2006.
75. "Steam reforming catalysts in microchannel reactors for hydrogen production", Seoul National University, Nov. 6, 2006.
76. "Process Miniaturization Using Microchannel Reactors", Oak Ridge National Laboratory, May 19, 2006.

77. "Process Intensification Using Microchannel Reactors", Sichuan University, China, April 30, 2006.
78. "Overview of Hydrogen Production", 2006 Green Chemistry Lecture, Tianjin University, China, April 28, 2006.
79. "Overview of Catalysis Research at PNNL", Dalian University of Technology, Dalian, China, April 27, 2006.
80. "Opportunities in Process Intensification Using Microchannel Reactor Technology", invited to 2006 DICP Symposium, Dalian Institute of Physical Chemistry, Dalian, China, April 21, 2006.
81. "Process Intensification Using Microchannel Technology – Link of Catalysis and Reaction Engineering", Washington State University, Pullman, Dec.5, 2005.
82. "Catalysis Research Overview at PNNL", Dalian Institute of Chemical Physics, Dalian, China, Oct. 14, 2005.
83. "Catalysis at PNNL: The Newly Established Institute for Interfacial Catalysis." Invited seminar at the Institute of Coal Chemistry, Taiyuan, China on October 9, 2005.
84. "Process Intensifications – Opportunities with Microchannel Reaction Technology", Brigham Young University, Provo, UT, February 5, 2004.
85. "Process Intensification Using Microchannel Reactors", University of New Mexico, Albuerqueque, NM, Oct. 7, 2003.
86. "Some Aspects on Catalysis and Reaction Engineering Research at PNNL", Sandia National Laboratory, Albuquerque, NM, Oct.6, 2003.
87. "Process Intensification Using Microchannel Reactors", The University of Kansas, Lawrence, April 30, 2003.
88. "Microchannel Fuel Processors for Manportable and Subwatt Power Generations", Korean Institute of Science and Technology, Feb. 26, 2002.
89. "Microchannel Catalytic Rectors for Fuel Cell Fuel Processing Applications", Dept of Chem. Eng., University of California at Berkeley, March 9, 2001.

Industries

1. "Unveiling Water's Dual Impact on Catalyst Behavior: Enhancer and Inhibitor", Scientific Design, New Jersey, Nov. 9, 2023.
2. "Addressing Key Catalysis Barriers in Cost-Effective Aftertreatment Technologies", BASF seminar series, Iselin, NJ, June 27, 2023.
3. "Addressing Key Catalysis Barriers in Cost-Effective Aftertreatment Technologies", John Deere seminar series, Waterloo, Iowa, June 7, 2023.
4. "Driving Sustainability in Chemical Transformations with Earth-Abundant Fe and Single Atom Catalysts", the 2023 Invitational Lecture Series jointly organized by UOP LLC Technical Community Organization (TCO) and Honeywell, April 4, 2023, Des Plaines, IL.
5. "Low temperature methane oxidation", invited presentation to The Advanced Combustion and Emission Control (ACEC) Technical Team, May 14, 2020.
6. "Transition Metal Oxide and Bimetallic Catalysts: From Fundamental to Applications", USSABIC, Houston, Feb. 14, 2017.
7. "Selective hydrogenation: current status, challenges and future direction", Nike, Beaverton, Oregon, Aug. 28, 2015.
8. "Conversion of bio-ethanol to isobutene", ADM, Decatur, IL, September, 2011.

9. "Overview of PNNL's activities in catalytic conversion of biomass to fuels and chemicals", Lummus Technology, Bloomfield, NJ, Feb. 17, 2008.
10. "Overview of catalytic conversion of biomass to fuels and chemicals", ConocoPhillips, Bartlesville, OK, Jan. 15, 2008.
11. "Catalytic conversion of biomass to fuels and chemicals", Eastman Corporate Seminar series, Kingsport, TN, Jan. 8, 2008.

Books Edited

1. Bo Zhang and Y.Wang, *Biomass Processing, Conversion, and Biorefinery,* Nova Science Publishers, Inc., ISBN: 978-1-62618-346-9, 2013.

1. Y.Wang and J.Holladay, *Microreactor Technology and Process Intensification*, ACS publisher, vol 914, 2005.

Special Journal Issues Edited

6. Guest editor of a special issue of *Catalysis Today* on Catalysts and Energy Materials for a Low Carbon Economy, issue 233, 2014
5. Guest editor of a special issue of *Catalysis Today* on Catalysis for Biomass Conversion, issue 237, 2014
4. Guest editor of a special issue of *Catalysis Today* on Catalysis Chemicals and fuels from renewables, 2010
2. Guest editor of a special issue of *Catalysis Today* on Catalysis and Chemistry of Chemical and Fuel Synthesis, 2008
2. Guest editor of a special issue of *Catalysis Today* on Compact and Novel Reactors, 2006
1. Guest editor of a special issue of *Journal of Power Sources* on Hydrogen Production, 2006

Graduate Students/Postdocs Supervised (20 PhD students graduated, 32 postdocs trained, 7 MS students graduated)

Ning Han, Postdoc (University of Toronto, 2024)

Junrui Li, Postdoc (Faculty of Clark Atlanta University, 2023)

Rui Zhang, PhD (NTU, 2023)

Carlos Eduardo Garcia Vargas, PhD (Cormetech, 2023)

Wenda Hu, PhD (WSU, 2023)

Anthony Savoy, PhD (Micron, 2023)

Weixin Huang, Postdoc (Faculty of University of North Dakota, 2022)

Austin Winkelman, PhD (PNNL, 2022)

Dong Jiang, Postdoc (Dow Chemical, 2022)

Junming Sun, Postdoc (Clariant, 2022)

Berlin Suddeth, PhD (2022)

Zihao Zhang, Postdoc (Faculty of University of Tennessee, 2021)

Yixiao Li, Postdoc (BASF, 2021)
Houqian (Frank) Li, PhD (Faculty of New Mexico State University, 2021)
Shuoxun (Ashley) Wang, Postdoc (Boehringer Ingelheim, 2020)
Jianghao Zhang, PhD (Chinese Academy of Sciences, 2020)
Nick Kaylor, Postdoc (Southwest Research Institute, 2019)
Nick Jaegers, PhD (Faculty of University of New Mexico, 2019)
Xavier Isidro, Pereira-Hernandez, PhD (PNNL, 2019)
Jinshu Tian, PhD (Faculty of Zhejiang University of Technology, 2019)
Hannah Kim, MS (WSU, 2019)
Bo Peng, Postdoc (Sinopec, 2018)
Fan Lin, Postdoc (PNNL, 2018)
Dongmin Yun, Postdoc (SK Innovation, 2018)
Mingwu Tan, Postdoc (a*STAR, 2018)
Yan Wang, PhD (National University of Singapore, 2018)
Zizwe Chase, PhD (Faculty of University of Illinois at Chicago, 2018)
Lei Nie, Postdoc (Faculty of Tianjin University of Technology, 2018)
Yingwen Cheng, Postdoc (Faculty of University of Tennessee, 2017)
James Song, MS (WSU, 2017)
Rebecca A. L. Baylon, PhD (Alturas Analytics Inc., 2016)
Yongchun Hong, PhD (University of California, Berkeley, 2016)
Mahfuzur Rahman, MS (WSU, 2016)
Yuan Chen, Postdoc (Fuji, 2016)
Jamie Holladay, PhD (PNNL, 2015)
Ning Yu, MS (University of California, Riverside, 2015)
Stephen Davidson, PhD (PNNL, 2015)
Yan Li, PhD (Agilent, 2015)
Zhehao Wei, PhD (Johnson Matthey, 2015)
Weizhen Li, Postdoc (DICP, 2015)
Changjun Liu, Postdoc (Faculty of Sichuan University, 2013)
Oscar Marin Flores, Postdoc (WSU, 2013)
Karthi Ramasamy, PhD (PNNL, 2013)
Colin Smith, MS (PNNL, 2013)
Prashant Daggolu, Postdoc (Cummins, 2012)

Dachuan Shi, Postdoc (ConocoPhillips, 2012)

Sehkyu Park, Postdoc (Faculty of Kwangwoon University, 2012)

Feng Gao, Research assistant professor (PNNL, 2011)

Yilin Wang, Postdoc (PNNL, 2011)

Vanessa Lebarbier, Postdoc (PNNL, 2010)

Lyon Zhang, Postdoc (ConocoPhillips, 2010)

Yuyan Shao, Postdoc (PNNL, 2009)

Kake Zhu, Postdoc (Faculty of ECUST, 2008)

José E. Herrera, Postdoc (Faculty of Western University, 2007)

Hyun-Seog Roh, Postdoc (Faculty of Yonsei University, 2007)

Alex Platon, Postdoc (ConocoPhillips, 2006)

Ja Hun Kawk, Postdoc (Faculty of UNIST, 2005)

Robert Dagle, MS (PNNL, 2005)

Robert Rozmiarek, MS (Virent, 2004)

Saemin Choi, Postdoc (CEO of NX Fuels Inc, 1999)