CURRICULUM VITAE

Jingyue (Jimmy) Liu, Ph.D.
Professor, Department of Physics
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EDUCATION:

Ph.D. (1990) Condensed Matter Physics, Arizona State University, Tempe, USA

B.S. (1982) Metal Physics, University of Science & Technology Beijing, Beijing, China

POSITIONS HELD AND RESPONSIBILITIES:

2011- Professor, Department of Physics, Arizona State University

2011- Senior Scholar, The Global Institute of Sustainability, Arizona State University

2012- Director, Professional Science Master's in Nanoscience Program, Arizona State University

2014- Chair, Steering Committee of the John M. Cowley Center for HREM, Arizona State University

2006-11 Professor, Department of Physics & Astronomy, University of Missouri-St. Louis

2006-11 Professor, Department of Chemistry & Biochemistry, University of Missouri-St. Louis

2006-11 Director, Center for Nanoscience, University of Missouri-St. Louis

2004-06 Senior Science Fellow and Senior Research Manager, Monsanto Company, St. Louis

2000-04 Science Fellow and Group Leader, Monsanto Company, St. Louis

1994-00 Research Specialist and Group Leader, Monsanto Company, St. Louis

1992-94 Research Scientist, Center for Solid State Science, Arizona State University

1990-92 Postdoctoral Research Associate, Center for Solid State Science, Arizona State University

MAJOR AWARDS, HONORS & PROFESSIONAL SERVICES:

2012 Elected Fellow of the Microscopy Society of America

2005 "Above and Beyond Award" for "significant technical breakthrough in developing and commercializing a Monsanto proprietary non-noble metal nanocatalyst". Monsanto Company

2003 Appointed as Senior Science Fellow of Monsanto Company for "extremely productive research contributions, superior scientific expertise and strategic leadership in broad technical areas, sustained high level of performance, and significant economic impact on Monsanto businesses". Monsanto Company

2002 Inducted to the Monsanto's Hall of Fame of Science and Technology for "significant contribution to development of industrial catalysts". Monsanto Company

2002 Prestigious Monsanto Edgar M. Queeny Award for advancing the science of industrial catalysis, significantly reducing the cost of manufacturing Monsanto products, and having had substantial economic impact on Monsanto; Citation: "discovery, development and commercialization of Monsanto's proprietary bimetallic bifunctional catalyst technology for the production of

glyphosate". The Edgar M. Queeny Award is the highest award that can be bestowed to an outstanding scientist of Monsanto

2001 "Above and Beyond Award" for "extraordinary performance and significant breakthrough contributions to developing Monsanto Catalyst Technologies"

2000 Appointed as Science Fellow of Monsanto Corporate Research for "sustained record of significant technical achievements of value to Monsanto, superior strategic technical leadership, and significant influence across Monsanto business units"

2000 Outstanding Performance Award for significant contribution to achieving key Monsanto business goals, Office of Science & Technology, Monsanto Company

1999 Monsanto Excellence Award for discovering, developing, and commercializing a proprietary industrial catalyst that significantly reduces the amount of waste products in manufacturing Monsanto products, Monsanto Company

1999 Outstanding Performance Award for discovering and developing an industrially important catalyst for manufacturing Monsanto products, Monsanto Company

1998 Second Prize in Physical Sciences, 57th Annual Meeting of the Microscopy Society of America, for outstanding contribution to the development of high-resolution secondary electron microscopy

1997 "Reach Award", Monsanto Corporate Research; citation: "in recognition of outstanding contributions in developing novel SEM imaging technology and applying it in glyphosate research studies"

1996 "Reach Award", Monsanto Corporate Research; citation: "in recognition of outstanding contributions to the successful commercial scale-up of the Monsanto new DEA/DSIDA catalyst"

1994 Young Scientist Award, *13th International Congress for Electron Microscopy,* Paris, France, for developing high-resolution surface spectroscopy and microscopy techniques

1993 Scholarship Award, *International Union of Crystallography*

1990 Presidential Award, *12th International Congress for Electron Microscopy,* Seattle, USA, for contribution to the development of atomic resolution high-angle annular dark-field electron microscopy and application of this technique to the study of quantum-well structures

1987 Dean's List of Outstanding Scholars, Arizona State University

1986 Dean's List of Outstanding Scholars, Arizona State University

REFEREE FOR:

Science, Nature, Nature Chemistry, Nature Nanotechnology, Nature Materials, Journal of the American Chemical Society, Nano Letters, ACS Nano, ACS Catalysis, ChemCatChem, Applied Physics Letter, J. Applied Physics, J. Catalysis, Catalysis Letter, J. Electron Microscopy, Microscopy and Microanalysis, Surface Science, Ultramicroscopy, J. Nanomaterials, J. Nanotechnology, Nanoscale, Chemical Sciences, etc.; NSF Grant Proposals & Panels, DOE basic energy sciences proposals, Petroleum Research Fund, Lenard Wood Institute Research Fund, Foundation for Research, Science and Technology of New Zealand, etc.

MEMBERSHIP IN SCIENTIFIC SOCIETIES:

American **C**hemical **S**ociety
American **P**hysical **S**ociety
North **A**merican **C**atalysis **S**ociety
Microscopy **S**ociety of **A**merica
Materials **R**esearch **S**ociety

RESEARCH INTERESTS:

Energy conversion and storage; single atom and cluster catalysis, nanocatalysis and heterogeneous catalysis; surface structure and surface chemical reactions; nanophase metal oxides, electrochromic displays, biosensors, and smart devices; electrocatalysis, green hydrogen and fuel cells; metal oxide nanostructures and solar cells; porous materials and batteries/supercapacitors; theory and application

of advanced electron spectroscopy, diffraction, and imaging techniques; nanoscience, nanotechnology and nanobiotechnology.

LIST OF PATENTS AND DISCLOSURES

1 Functional nanoglues for stable metal single-atom and cluster catalysts. J Liu and X Li - US2021016256A1.

2 Highly active metal oxide supported atomically dispersed platinum group metal catalysts. United States Patent Application 20200391185.

3 Functional nanoglues for stable metal single-atom and cluster catalysts. U.S. Patent Application No. 62/876,437, filed on Jul. 19, 2019.

4 Highly active metal oxide supported atomically dispersed platinum group metal catalysts, Y Lou, J Liu - US Patent App. 16/898,173, 2020.

5 Deeply reduced oxidation catalyst and its use in preparing N-(phosphonomethyl) glycine compounds. USP 7,067,693, June 27, 2006.

6 Deeply reduced oxidation catalyst and its use for catalyzing liquid phase oxidation reactions. USP 6,603,039, August 5, 2003.

7 Deeply reduced oxidation catalyst and its use for catalyzing liquid phase oxidation reactions. USP 6,417,133, July 9, 2002.

8 Oxidation catalyst and its use for catalyzing liquid phase oxidation reactions. WO 2006031938 A3, Jun 8, 2006.

9 Oxidation catalyst and its use for catalyzing liquid phase oxidation reactions. US 20100130774 A1, May 27, 2010.

10 Deeply reduced oxidation catalyst and its use for catalyzing liquid phase oxidation reactions. CA 2610653 C, May 29, 2012

LIST OF PUBLICATIONS

Book Chapters

8 "Widening the Impact: Informal, Introductory, and Industry Nanochallenges", P. Fraundorf and Jingyue Liu, Book Chapter in *Nanoscale Science and Engineering Education*, edited by Aldrin E. Sweeney and Sudipta Seal. (Publisher: American Scientific Publishers, 2008).

7 "Advanced Electron Microscopy in Developing Nanostructured Heterogeneous Catalysts", Jingyue Liu, Book Chapter in *Nanotechnology in Catalysis*, edited by B Zhou, S. Hermans and G. A. Somorjai. (Publisher: Kluwer Academic/Plenum Publishers, 2005).

6 "High Resolution Scanning Electron Microscopy", Jingyue Liu, Book Chapter in *Microscopy for Nanotechnology*, edited by N Yao and Z. L. Wang. (Publisher: Kluwer Academic/Plenum Publishers, 2005).

5 "Nanophase Metal Oxide Materials for Electrochromic Displays", Jingyue Liu and J. P. Coleman, book chapter in: *Handbook of Nanophase and Nanostructured Materials: Synthesis / Characterization / Materials Systems and Applications I / Materials Systems and Applications II*, edited by Zhong Lin Wang, Yi Liu, and Ze Zhang (Publisher: Kluwer Academic/Plenum Publishers, 2003).

4 "Scanning Transmission Electron Microscopy of Nanoparticles", Jingyue Liu, book chapter in "*Characterization of Nanophase Materials*", edited by Z. L. Wang (Wiley-VCH, Weinheim, 1999).

3 "Scanning Electron and Auger Microscopy of Surfaces and Small Particles", J. A. Venables and Jingyue Liu, chapter in: "*Encyclopedia of Surface and Colloid Science"*, edited by Arthur T. Hubbard (Publisher: Marcel Dekker, Inc., New York, 2002)

2 "Atomic-scale Characterization of Metal-support Interactions in Supported Metal Catalysts", K, Sun, J. Liu, N. K. Nag, and N. D. Browning, book chapter in: *Recent Developments in Materials Science*, (Publisher: Research Signpost, 2003)

1 "Atomic Scale Studies of Heterogeneous Catalysts", R. F. Klie, K. Sun, M. M. Disko, J. Liu, and N. D. Browning, book chapter in: Dekker *Encyclopedia of Nanoscience and Nanotechnology*, (Publisher: Marcel Dekker, 2004)

Publications in Refereed Journals and Proceedings

2021

341 Functional CeOx nanoglues for efficient and robust atomically dispersed catalysts, Jingyue Liu, Xu Li, Xavier Isidro Pereira Hernandez, Chia-Yu Fang, Yizhen Chen, Jie Zeng, Yong Wang and Bruce Gates, https://doi.org/10.21203/rs.3.rs-604924/v1

340 Pt_1–O_4 as active sites boosting CO oxidation *via* a non-classical Mars–van Krevelen mechanism, Yang Lou, Yongping Zheng, Wenyi Guo and Jingyue Liu, *Catal. Sci. Technol.* **11**, 3578-3588 (2021). https://doi.org/10.1039/D1CY00115A

339 Advances and Applications of Atomic-Resolution Scanning Transmission Electron Microscopy (review paper), J Liu, *Microscopy and Microanalysis* **27** (5), 943 – 995 (2021). https://doi.org/10.1017/S1431927621012125

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338 Dual Metal Active Sites in an Ir_1/FeO_x Single-Atom Catalyst: A Redox Mechanism for the Water-Gas Shift Reaction, JX Liang, J Lin, J Liu, X Wang, T Zhang, J Li, *Angewandte Chemie International Edition* **59** (31), 12868-12875 (2020). https://doi.org/10.1002/anie.201914867

337 Identification of Active Sites on High-Performance Pt/Al_2O_3 Catalyst for Cryogenic CO Oxidation, Yang Chen, Yingxin Feng, Lin Li, Jingyue Liu, Xiaoli Pan, Wei Liu, Fenfei Wei, Yitao Cui, Botao Qiao, Xiucheng Sun, Xiaoyu Li, Jian Lin, Sen Lin, Xiaodong Wang, Tao Zhang, *ACS Catalysis* **10** (15), 8815-8824 (2020). https://doi.org/10.1021/acscatal.0c02253

336 Identification of active area as active center for CO oxidation over single Au atom catalyst, Yang Lou, Yafeng Cai, Wende Hu, Li Wang, Qiguang Dai, Wangcheng Zhan, Yanglong Guo, P Hu, Xiao-Ming Cao, Jingyue Liu, Yun Guo, *ACS Catalysis* **10** (11), 6094-6101 (2020). https://doi.org/10.1021/acscatal.0c01303

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334 Activating low-temperature diesel oxidation by single-atom Pt on TiO_2 nanowire array, Son Hoang, Yanbing Guo, Andrew J Binder, Wenxiang Tang, Sibo Wang, Jingyue Jimmy Liu, Huan Tran, Xingxu Lu, Yu Wang, Yong Ding, Eleni A Kyriakidou, Ji Yang, Todd J Toops, Thomas R Pauly, Rampi Ramprasad, Pu-Xian Gao, *Nature communications* **11** (1), 1-10 (2020). https://doi.org/10.1038/s41467-020-14816-w

333 A new trick for an old support: Stabilizing gold single atoms on $LaFeO_3$ perovskite, Chengcheng Tian, Haiyan Zhang, Xiang Zhu, Bo Lin, Xiaofei Liu, Hao Chen, Yafen Zhang, David R Mullins,

Carter W Abney, Mohsen Shakouri, Roman Chernikov, Yongfeng Hu, Felipe Polo-Garzon, Zili Wu, Victor Fung, De-en Jiang, Xiaoming Liu, Miaofang Chi, Jingyue Liu Jimmy, Sheng Dai, *Applied Catalysis B: Environmental* **261**, 118178 (2020). https://doi.org/10.1016/j.apcatb.2019.118178

332 Kinetically Controlled Synthesis of Pd–Cu Janus Nanocrystals with Enriched Surface Structures and Enhanced Catalytic Activities toward CO2 Reduction, Zhiheng Lyu, Shangqian Zhu, Lang Xu, Zitao Chen, Yu Zhang, Minghao Xie, Tiehuai Li, Shan Zhou, Jingyue Liu, Miaofang Chi, Minhua Shao, Manos Mavrikakis, Younan Xia, *J. Am. Chem. Soc.* **143** (1), 149–162 (2021). https://doi.org/10.1021/jacs.0c05408

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330 Facile Synthesis of Pd−Cu Bimetallic Twin Nanocubes and a Mechanistic Understanding of the Shape Evolution, Yifeng Shi, Zhiheng Lyu, Jingyue Liu, Emily Chase, Younan Xia, *ChemNanoMat* **6**, 386-391 (2020). https://doi.org/10.1002/cnma.201900653

329 EELS Analysis of Ce Valence State of SiO2 Supported CeO2 Nanoparticles, CeOx Nanoclusters and Ce Single Atoms, Jia Xu, Xu Li, Xianchun Liu, Jingyue Liu, *Microscopy and Microanalysis* **26** (S2), 728-730 (2020). https://doi.org/10.1017/S1431927620015652

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2019

327 Pocketlike Active Site of Rh_1/MoS_2 Single-Atom Catalyst for Selective Crotonaldehyde Hydrogenation, Yang Lou, Yongping Zheng, Xu Li, Na Ta, Jia Xu, Yifan Nie, Kyeongjae Cho, Jingyue Liu*, *J. Am. Chem. Soc.* **141**, 19289-19295 (2019) (https://doi.org/10.1021/jacs.9b06628)

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325 Geometric effect of Au nanoclusters on room temperature CO oxidation, Yafeng Cai, Yun Guo, Jingyue Liu*, *Chem. Commun.* 2020, https://doi.org/10.1039/C9CC08381B

324 Facile Synthesis of Pd-Cu Bimetallic Twin Nanocubes and a Mechanistic Understanding of the Shape Evolution, Yifeng Shi, Zhiheng Lyu, Jingyue Liu, Emily Chase, Younan Xia, *ChemNanoCat* 09 December 2019 https://doi.org/10.1002/cnma.201900653

323 Superior activity of Rh_1/ZnO single-atom catalyst for CO oxidation, B Han, R Lang, H Tang, J Xu, XK Gu, B Qiao, JJ Liu*, *Chinese Journal of Catalysis* **40**, 1847-1853 (2019)

322 Ir_1Zn_n Bimetallic Site for Efficient Production of Hydrogen from Methanol, L Tan, L Nguyen, S Zhang, Y Tang, J Liu, FF Tao, *ACS Sustainable Chemistry & Engineering* **7**, 18793-18800 (2019) (https://doi.org/10.1021/acssuschemeng.9b03247)

321 Nanocarbon-Edge-Anchored High-Density Pt Atoms for 3-nitrostyrene Hydrogenation: Strong Metal-Carbon Interaction, Y Lou, H Wu, J Liu*, *iScience* **13**, 190-198 (2019)

320 Ultrathin, Polycrystalline, Two-Dimensional Co_3O_4 for Low-Temperature CO Oxidation, Y Cai, J

Xu, Y Guo, J Liu*, *ACS Catalysis* **9**, 2558-2567 (2019)

319 Structure of the catalytically active copper–ceria interfacial perimeter, Aling Chen, Xiaojuan Yu, Yan Zhou, Shu Miao, Yong Li, Sebastian Kuld, Jens Sehested, Jingyue Liu, Toshihiro Aoki, Song Hong, Matteo Farnesi Camellone, Stefano Fabris, Jing Ning, Chuanchuan Jin, Chengwu Yang, Alexei Nefedov, Christof Wöll, Yuemin Wang, Wenjie Shen, *Nature Catalysis* **2**, 334–341 (2019)

318 Large-Scale and Highly Selective CO_2 Electrocatalytic Reduction on Nickel Single-Atom Catalyst, Tingting Zheng, Kun Jiang, Na Ta, Yongfeng Hu, Jie Zeng, Jingyue Liu, HaotianWang, *Joule* **3**, 265-278 (2019)

317 Probing the Active Sites of ZnO Nanowire Supported Ir Species for CO Oxidation, Jia Xu, Yafeng Cai, Xu Li, Jingyue Liu*, *Microscopy and Microanalysis* **25** (S2), 2204-2205 (2019)

316 Challenges in Determining Structure of Supported Subnano Metal Clusters, Jingyue Liu*, *Microscopy and Microanalysis* **25** (S2), 1640-1641 (2019)

315 Two-dimensional Polycrystalline Co_3O_4 Supported High-Number-Density Metal Single Atoms and Clusters, J Xu, D Wang, Y Cai, J Liu*, *Microscopy and Microanalysis* **25** (S2), 2210-2211 (2019)

314 Synthesis of Ultrathin-Wall Mesoporous Cu_2O Nanotubes for Low-Temperature Carbon Monoxide Oxidation, Y Yu, N Ta, J Liu*, *Microscopy and Microanalysis* **25** (S2), 2244-2245 (2019)

313 Synthesis of Na@ nanoFAU zeolite catalyst and catalysis for production of formic acid on in Na@ nanoFAU, Y. Li, N. Khivantsev, Y. Tang, L. Nguyen, J. Liu, M. Yu, F. Tao, *Catalysis Letters* **149**, 1965-1974 (2019)

2018

312 Geometrical Structure of the Gold–Iron (III) Oxide Interfacial Perimeter for CO Oxidation, X Wei, B Shao, Y Zhou, Y Li, C Jin, J Liu*, W Shen, *Angewandte Chemie* **130**, 11459-11463 (2018)

311 A Rationally Designed Route to the One-Pot Synthesis of Right Bipyramidal Nanocrystals of Copper, Z Lyu, M Xie, KD Gilroy, ZD Hood, M Zhao, S Zhou, J Liu, Y Xia, *Chemistry of Materials* **30**, 6469-6477 (2018)

310 Highly crystalline Nb-doped TiO2 nanospindles as superior electron transporting materials for high-performance planar structured perovskite solar cells, Yinhua Lv, Bing Cai, Qingshan Ma, Zenghua Wang, Jingyue(Jimmy) Liu* and Wen-Hua Zhang, *RSC Adv*. **8**, 20982-20989 (2018)

309 Facile Fabrication of SnO_2 Nanorod Arrays Films as Electron Transporting Layer for Perovskite Solar Cells, Y Lv, P Wang, B Cai, Q Ma, X Zheng, Y Wu, Q Jiang, J Liu*, WH Zhang, *Solar RRL* **2**, 1800133 (2018)

308 High performance perovskite solar cells using TiO_2 nanospindles as ultrathin mesoporous layer, Y Lv, B Cai, Y Wu, S Wang, Q Jiang, Q Ma, JJ Liu, WH Zhang, *Journal of Energy Chemistry* **27**, 951-956 (2018)

307 Three dimensional carbon-bubble foams with hierarchical pores for ultra-long cycling life supercapacitors, B Wang, W Zhang, L Wang, J Wei, X Bai, J Liu, G Zhang, H Duan, *Nanotechnology* **29**, 275706 (2018)

306 Stability investigation of a high number density Pt_1/Fe_2O_3 single-atom catalyst under different gas environments by HAADF-STEM, S Duan, R Wang, J Liu*, *Nanotechnology* **29**, 204002 (2018)

305 Syntheses, Plasmonic Properties, and Catalytic Applications of Ag–Rh Core-Frame Nanocubes and Rh Nanoboxes with Highly Porous Walls, Y Zhang, J Ahn, J Liu, D Qin, *Chemistry of Materials* **30**, 2151-2159 (2018)

304 Hollow carbon anchored highly dispersed Pd species for selective hydrogenation of 3-nitrostyrene: metal-carbon interaction, Y Lou, J Xu, H Wu, J Liu*, *Chemical Communications* **54**, 13248-13251 (2018)

303 Anchoring and Localizing Single Metal Atoms for Better Catalysis, Jingyue (Jimmy) Liu*, Jia Xu, Yang Lou, Yafeng Cai and Xu Li, *Microscopy & Microanalysis* **24**, Supplement S1, 20-21 (2018)

302 Anchoring Pt Single Atoms on CeO_x Nanoclusters for CO Oxidation, Xu Li, Jia Xu, Jie Zeng, Jingyue Liu*, *Microscopy & Microanalysis* **24**, Supplement S1, 1660-1661 (2018)

301 Two-Dimensional Polycrystalline ZnO Hierarchical Structures as Single-atom Catalyst Supports, Yafeng Cai, Jia Xu, Yun Guo and Jingyue Liu*, *Microscopy & Microanalysis* **24**, Supplement S1, 1604-1605 (2018)

300 Site Selective Growth of Noble Metal Atoms on Two-dimensional MoS_2 Nanosheets, Jia Xu, Xu Li and Jingyue Liu*, *Microscopy & Microanalysis* **24**, Supplement S1, 1562-1563 (2018)

299 Identifying size effects of Pt as single-atoms and nanoparticles supported on FeO_x for water gas shift reaction, Yang Chen, Jian Lin, Lin Li, Botao Qiao, Jingyue Liu, Yang Su, Xiaodong Wang, *ACS Catalysis* **8**, 859–868 (2018)

298 Manipulation of Pt-Ni tetrahexahedral nanoframes ssing a gaseous etching method, Yiliang Luan, Lihua Zhang, Chenyu Wang, Jingyue Liu, Jiye Fang, *MRS Advances* **3**, 943-948 (2018)

2017

297 Preface to the special issue of the international symposium on single-atom catalysis (ISSAC-2016), Jun Li, Jingyue Liu, Tao Zhang, *Chinese Journal of Catalysis* **38**, 1431-1431 (2017)

296 One-pot synthesis of penta-twinned palladium nanowires and their enhanced electrocatalytic properties, Hongwen Huang, Aleksey Ruditskiy, Sang-Il Choi, Lei Zhang, **Jingyue Liu**, Zhizhen Ye, Younan Xia, *ACS Applied Materials & Interfaces* **9**, 31203-31212 (2017)

295 Aberration-corrected scanning transmission electron microscopy in single-atom catalysis: Probing the catalytically active centers, **Jingyue Jimmy Liu***, *Chinese Journal of Catalysis* **38**, 1460-1472 (2017)---Invited Perspective

294 Probing the catalytic behavior of ZnO nanowire supported Pd_1 single-atom catalyst for selected reactions, Jia Xu, Yian Song, Honglu Wu, **Jingyue Liu***, *Chinese Journal of Catalysis* **38**, 1549-1557 (2017)

293 More active Ir subnanometer clusters than single-atoms for catalytic oxidation of CO at low temperature, Jian Lin, Yang Chen, Yanliang Zhou, Lin Li, Botao Qiao, Aiqin Wang, **Jingyue Liu**, Xiaodong Wang, Tao Zhang, *AIChE Journal* **63**, 4003-4012 (2017)

292 Catalysis on singly dispersed Rh atoms anchored on an inert support, Shiran Zhang, Yan Tang, Luan Nguyen, Ya-Fan Zhao, Zili Wu, Tian-Wei Goh, **Jimmy Jingyue Liu**, Yuanyuan Li, Tong Zhu, Wenyu Huang, Anatoly I Frenkel, Jun Li, Franklin Feng Tao, *ACS Catal.* **8**, 110-121 (2017)

291 Remarkable effect of alkalis on the chemoselective hydrogenation of functionalized nitroarenes over high-loading Pt/FeO_x catalysts, Haisheng Wei, Yujing Ren, Aiqin Wang, Xiaoyan Liu, Xin Liu, Leilei Zhang, Shu Miao, Lin Li, **Jingyue Liu**, Junhu Wang, Guofu Wang, Dangsheng Su, Tao Zhang, *Chem. Sci.* **8**, 5126-5131 (2017)

290 CO oxidation on metal oxide supported single Pt atoms: The role of the support, Yang Lou, **Jingyue Liu**, *Ind. Eng. Chem. Res.* **56**, 6916–6925 (2017)

289 Stable and solubilized active Au atom clusters or selective epoxidation of cis-cyclooctene with molecular oxygen, Linping Qian, Zhen Wang, Evgeny V. Beletskiy, **Jingyue Liu**, Haroldo J. dos

Santos, Tiehu Li, Maria do C. Rangel, Mayfair C. Kung, Harold H. Kung, *Nat. Commun.* **8**, #14881 (2017)

288 A highly active Pt–Fe/γ-Al_2O_3 catalyst for preferential oxidation of CO in excess of H_2 with a wide operation temperature window, Yang Lou, **Jingyue Liu**, *Chem. Commun*. **53**, 9020-9023 (2017)

287 Toward the design of a hierarchical perovskite support: Ultra-sintering-resistant gold nanocatalysts for CO oxidation, Chengcheng Tian, Xiang Zhu, Carter W. Abney, Xiaofei Liu, Guo Shiou Foo, Zili Wu, Meijun Li, Harry M. Meyer, Suree Brown, Shannon M. Mahurin, Sujuan Wu, Shi-Ze Yang, **Jingyue Liu**, Sheng Dai, *ACS Catal*. **7**, 3388−3393 (2017)

286 Observing the overgrowth of a second metal on silver cubic seeds in solution by surface-enhanced Raman scattering oxidation, Yun Zhang, **Jingyue Liu**, Jaewan Ahn, Ting-Hui Xiao, Zhi-Yuan Li, and Dong Qin, *ACS Nano* **11**, 5080–5086 (2017)

285 High-indexed Pt_3Ni alloy tetrahexahedral nanoframes evolved through preferential CO etching, Chenyu Wang, Lihua Zhang, Hongzhou Yang, Jinfong Pan, **Jingyue Liu**, Charles Dotse, Yiliang Luan, Rui Gao, Cuikun Lin, Jun Zhang, James P. Kilcrease, Xiaodong Wen, Shouzhong Zou, and Jiye Fang, *Nano Lett*. **17**, 2204–2210 (2017)

284 Pt_1/CeO_2-ZnO nanowire single-atom catalysts for water-gas shift reaction, Jia Xu, Yian Song, **Jingyue Liu**, *Microscopy and Microanalysis* **23**(S1), 1856-1857 (2017)

283 The stability of high metal-loading Pt_1/Fe_2O_3 single-atom catalyst under different gas environment, **Jingyue Liu**, Sibin Duan, Rongming Wang, *Microscopy and Microanalysis* **23**(S1), 1898-1899 (2017)

282 STEM-EELS evaluation of the dependence of localized surface plasmon linewidth on the size of Au nanoparticles, Jiake Wei, Jia Xu, Xuedong Bai, **Jingyue Liu**, *Microscopy and Microanalysis* **23**(S1), 1554-1555 (2017)

281 Facet selective growth of iridium chains/wires of single-atom width on the {1010} surfaces of ZnO nanowires, Jia Xu, Yian Song, Honglu Wu, **Jingyue Liu**, *Microscopy and Microanalysis* **23**(S1), 484-485 (2017)

280 Development of two-dimensional polycrystalline Co_3O_4 hierarchical structures and Pt_1/2D-Co_3O_4 single-atom catalysts, **Jingyue Liu***, Yafeng Cai, Yun Guo, *Microscopy and Microanalysis* **23**(S1), 1868-1869 (2017)

2016

279 Catalysis by supported single metal atoms, **J Liu***, *ACS Catalysis* **7**, 34-59 (2016)---Invited Perspective

278 Atomic scale observation of oxygen delivery during silver-oxygen nanoparticle catalyzed oxidation of carbon nanotubes, Y Yue, D Yuchi, P Guan, J Xu, L Guo, **J Liu***, *Nature Communications* **7**, #12251 (2016)

277 Radially aligned porous carbon nanotube arrays on carbon fibers: A hierarchical 3D carbon nanostructure for high-performance capacitive energy storage, G Zhang, Y Song, H Zhang, J Xu, H Duan, **J Liu***, *Advanced Functional Materials* **26**, 3012-3020 (2016)

276 Facet-selective epitaxial growth of δ-Bi_2O_3 on ZnO nanowires, Jia Xu and **Jingyue Liu***, *Chemistry of Materials* **28**, 8141-8148 (2016)

275 Strong metal–support interactions between gold nanoparticles and nonoxides, H Tang, J Wei, F Liu, B Qiao, X Pan, L Li, **J Liu**, J Wang, T Zhang, *Journal of American Chemical Society* **138**, 56-59 (2016)

274 Pt-based icosahedral nanocages: using a combination of {111} facets, twin defects, and ultrathin walls to greatly enhance their activity toward oxygen reduction, X Wang, L Figueroa-Cosme, X Yang, M Luo, **J Liu**, Z Xie, Y Xia, *Nano letters* **16**, 1467-1471 (2016)

273 Catalytically active Rh sub-nanoclusters on TiO_2 for CO oxidation at cryogenic temperatures, Hongling Guan, Jian Lin, Botao Qiao, Xiaofeng Yang, Lin Li, Shu Miao, **Jingyue Liu**, Aiqin Wang, Xiaodong Wang, Tao Zhang, *Angewandte Chemie International Edition* **55**, 2820-2824 (2016)

272 Ultrastable hydroxyapatite/titanium-dioxide-supported gold nanocatalyst with strong metal–support interaction for carbon monoxide oxidation, Hailian Tang, Fei Liu, Jiake Wei, Botao Qiao, Kunfeng Zhao, Yang Su, Changzi Jin, Lin Li, **Jingyue (Jimmy) Liu**, Junhu Wang, Tao Zhang, *Angewandte Chemie International Edition* **55**, 10606-10611 (2016)

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