Xiaolin Zheng
Professor of Mechanical Engineering, of Energy Science Engineering, Senior Fellow at the Precourt Institute for Energy and Professor, by courtesy, of Materials Science and Engineering
Curriculum Vitae available Online

CONTACT INFORMATION
• Administrative Contact
  Tasha Jackson - Thermosciences Group Administrator
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Bio

BIO
Professor Zheng received her Ph.D. in Mechanical & Aerospace Engineering from Princeton University (2006), B.S. in Thermal Engineering from Tsinghua University (2000). Prior to joining Stanford in 2007, Professor Zheng did her postdoctoral work in the Department of Chemistry and Chemical Biology at Harvard University. Professor Zheng is a member of MRS, ACS and combustion institute. Professor Zheng received the TR35 Award from the MIT Technology Review (2013), one of the 100 Leading Global Thinkers by the Foreign Policy Magazine (2013), 3M Nontenured Faculty Grant Award (2013), the Presidential Early Career Award (PECASE) from the white house (2009), Young Investigator Awards from the ONR (2008), DARPA (2008), Terman Fellowship from Stanford (2007), and Bernard Lewis Fellowship from the Combustion Institute (2004).

ACADEMIC APPOINTMENTS
• Professor, Mechanical Engineering
• Professor, Energy Science & Engineering
• Senior Fellow, Precourt Institute for Energy
• Professor (By courtesy), Materials Science and Engineering
• Member, Bio-X
• Affiliate, Precourt Institute for Energy
• Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS
• Professor, Mechanical Engineering, (2020- present)
• Associate Professor, Mechanical Engineering, (2014-2020)
• Assistant Professor, Mechanical Engineering, (2007-2014)

HONORS AND AWARDS
• Presidential Early Career Award for Scientists and Engineers, Presidential Early Career Awards (2009)
• Young Investigator Program, ONR (2008)
• Young Faculty Award, DARPA (2008)
• Terman Faculty Award, Stanford University (2007)
• Bernard Lewis Fellowship, The Combustion Institute (2004)
• Amelia Earhart Fellowship, Zonta International Foundation (2003)
• One of the Pioneers on the TR35 Global list, MIT Technology Review (2013)
• 3M Nontenured Faculty Grant Award, 3M (2013)

PROFESSIONAL EDUCATION
• BS, Tsinghua University, Thermal Engineering (2000)
• PhD, Princeton, Mechanical and Aerospace Engineering (2006)

LINKS
• Research group website: https://zhenglab.stanford.edu/

Teaching

COURSES
2023-24
• ESE Master's Graduate Seminar: ENERGY 351 (Aut)
• ESE PhD Graduate Seminar: ENERGY 352 (Aut)
• Energy Systems I: Thermodynamics: ME 370A (Aut)
• Fundamentals of Energy Processes: EE 293B, ENERGY 201B (Win)
• Hydrogen Economy: ENERGY 205 (Win)
• Thermofluids, Energy, and Propulsion Research Seminar: ME 390A (Spr)

2022-23
• Energy Systems I: Thermodynamics: ME 370A (Aut)
• Engineering Thermodynamics: ME 30 (Win)
• Hydrogen Economy: ENERGY 205 (Win)

2021-22
• Energy Systems I: Thermodynamics: ME 370A (Aut)
• Engineering Thermodynamics: ME 30 (Win)
• Hydrogen Economy: ENERGY 205 (Win)

2020-21
• Energy Systems I: Thermodynamics: ME 370A (Aut)
• Hydrogen Economy: ENERGY 205 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)
Vivek Boddapati Venkata, Sihe Zhang

Postdoctoral Faculty Sponsor
Sung Soon Kim
Doctoral Dissertation Advisor (AC)
Jihyun Baek, Kiran Hamkins, Andy Huynh, Dongjae Kong, Yuzhe Li, Adam Potter

Master's Program Advisor
Matt Foutter, Kunlin Ma, Lucas Ray, Pin-Hsuan Tseng, Atharva Wadhokar

Doctoral Dissertation Co-Advisor (AC)
Sara Ha

Doctoral (Program)
Jillian Anderson, Qi Jiang, Naman Mishra

Postdoctoral Research Mentor
Sangwook Park

Publications

PUBLICATIONS

• Hyperbolic Polaritonic Rulers Based on van der Waals #-MoO3 Waveguides and Resonators. ACS nano
  Yu, S. J., Yao, H., Hu, G., Jiang, Y., Zheng, X., Fan, S., Heinz, T. F., Fan, J. A.
  2023

• Synergistic effects of mixing and strain in high entropy spinel oxides for oxygen evolution reaction. Nature communications
  Baek, J., Hossain, M. D., Mukherjee, P., Lee, J., Winther, K. T., Leem, J., Jiang, Y., Chueh, W. C., Bajdich, M., Zheng, X.
  2023; 14 (1): 5936

• Exfoliated Magnesium Diboride (MgB2) Nanosheets as Solid Fuels. Nano letters
  Jiang, Y., Ka, D., Huynh, A. H., Baek, J., Ning, R., Yu, S. J., Zheng, X.
  2023

• Recent advances in defect-engineered molybdenum sulfides for catalytic applications. Materials horizons
  Zhao, Y., Zheng, X., Gao, P., Li, H.
  2023

• Enhanced H2O2 Upeycling into Hydroxyl Radicals with GO/ Ni:FeOOH-Coated Silicone Nanowire Photocatalysts for Wastewater Treatment. Nano letters
  Ning, R., Kim, S., Sun, E., Jiang, Y., Baek, J., Li, Y., Robinson, A., Vallez, L., Zheng, X.
  2023

• Organic Upgrading through Photoelectrochemical Reactions: Toward Higher Profits. Small methods
  Liu, T. K., Jang, G. Y., Kim, S., Zhang, K., Zheng, X., Park, J. H.
  2023: e2303315

• Data-Driven Approach to Tailoring Mechanical Properties of a Soft Material ADVANCED FUNCTIONAL MATERIALS
  Leem, J., Jiang, Y., Robinson, A., Xia, Y., Zheng, X.
  2023

• Machine Learning Assisted Analysis of Electrochemical H2O2 Production ACS APPLIED ENERGY MATERIALS
  Leem, J., Vallez, L., Gill, T., Zheng, X.
  2023; 6 (7): 3953-3959

• Do we need perfect mixing between fuel and oxidizer to maximize the energy release rate of energetic nanocomposites? APPLIED PHYSICS LETTERS
  Wang, H., Jiang, Y., Wang, Y., Kline, D. J., Zheng, X., Zachariah, M. R.
  2023; 122 (1)

• Hydrogen-substituted graphdiyne-assisted ultrafast sparking synthesis of metastable nanomaterials. Nature nanotechnology
  Zheng, X., Gao, X., Vila, R. A., Jiang, Y., Wang, J., Xu, R., Zhang, R., Xiao, X., Zhang, P., Greenburg, L. C., Yang, Y., Xin, H. L., Zheng, et al
• Author Correction: Discovery of LaAlO3 as an efficient catalyst for two-electron water electrolysis towards hydrogen peroxide. *Nature communications*
  Baek, J., Jin, Q., Johnson, N. S., Jiang, Y., Ning, R., Mehta, A., Siahrostami, S., Zheng, X.
  2022; 13 (1): 7685

• Discovery of LaAlO3 as an efficient catalyst for two-electron water electrolysis towards hydrogen peroxide. *Nature communications*
  Baek, J., Jin, Q., Johnson, N. S., Jiang, Y., Ning, R., Mehta, A., Siahrostami, S., Zheng, X.
  2022; 13 (1): 7256

• Crystal Reconstruction of Mo:BiVO4: Improved Charge Transport for Efficient Solar Water Splitting *ADVANCED FUNCTIONAL MATERIALS*
  Jeong, Y., Seo, D., Baek, J., Kang, M., Kim, B., Kim, S., Zheng, X., Cho, I.
  2022

• Perfluoroalkyl-Functionalized Graphene Oxide as a Multifunctional Additive for Promoting the Energetic Performance of Aluminum. *ACS nano*
  Jiang, Y., Wang, H., Baek, J., Ka, D., Huynh, A. H., Wang, Y., Zachariah, M. R., Zheng, X.
  2022

• Ignition and combustion of Perfluoroalkyl-functionalized aluminum nanoparticles and nanothermite *COMBUSTION AND FLAME*
  Jiang, Y., Wang, Y., Baek, J., Wang, H., Gottfried, J. L., Wu, C., Shi, X., Zachariah, M. R., Zheng, X.
  2022; 242

• Efficient and Stable Acidic Water Oxidation Enabled by Low-Concentration, High-Valence Iridium Sites *ACS ENERGY LETTERS*
  Shi, X., Peng, H., Hershbach, T. P., Jiang, Y., Zeng, Y., Baek, J., Winther, K. T., Sokaras, D., Zheng, X., Bajdich, M.
  2022

• Effect of Fluoroalkylsilane Surface Functionalization on Boron Combustion. *ACS applied materials & interfaces*
  Baek, J., Jiang, Y., Demko, A. R., Jimenez-Thomas, A. R., Vallez, L., Ka, D., Xia, Y., Zheng, X.
  2022

• Local Structure of Sulfur Vacancies on the Basal Plane of Monolayer MoS2. *ACS nano*
  Garcia-Esparza, A. T., Park, S., Abroshan, H., Paredes Mellone, O. A., Vinson, J., Abraham, B., Kim, T. R., Nordlund, D., Gallo, A., Alonso-Mori, R., Zheng, X., Sokaras, D.
  2022

• Ultrahigh-Quality Infrared Polaritonic Resonators Based on Bottom-Up-Synthesized van der Waals Nanoribbons. *ACS nano*
  Yu, S., Jiang, Y., Roberts, J. A., Huber, M. A., Yao, H., Shi, X., Bechtel, H. A., Gilbert Corder, S. N., Heinz, T. F., Zheng, X., Fan, J. A.
  1800

• Ultrahigh-quality van der Waals hyperbolic polariton resonators
  Yu, S., Jiang, Y., Roberts, J. A., Huber, M. A., Yao, H., Shi, X., Bechtel, H. A., Corder, S. G., Heinz, T. F., Zheng, X., Fan, J. A., Chang-Hasnain, C. J., Fan, et al
  SPIE-INT SOC OPTICAL ENGINEERING 2022

• Enhancing Electrochemical Water Oxidation toward H2O2 via Carbonaceous Electrolyte Engineering *ACS APPLIED ENERGY MATERIALS*
  Gill, T., Vallez, L., Zheng, X.
  2021; 4 (11): 12429-12435

• Probing boron thermite energy release at rapid heating rates *COMBUSTION AND FLAME*
  Gottfried, J. L., Wainwright, E. R., Huang, S., Jiang, Y., Zheng, X.
  2021; 231

• The Role of Bicarbonate-Based Electrolytes in H2O2 Production through Two-Electron Water Oxidation *ACS ENERGY LETTERS*
  Gill, T., Vallez, L., Zheng, X.
  2021; 6 (8): 2854-2862

• High thermoelectric figure of merit of porous Si nanowires from 300 to 700K. *Nature communications*
  Yang, L., Huh, D., Ning, R., Rapp, V., Zeng, Y., Liu, Y., Ju, S., Tao, Y., Jiang, Y., Beak, J., Leem, J., Kaur, S., Lee, et al
  2021; 12 (1): 3926

• Enhancing Mechanical and Combustion Performance of Boron/Polymer Composites via Boron Particle Functionalization. *ACS applied materials & interfaces*
Jiang, Y., Dincer Yilmaz, N. E., Barker, K. P., Baek, J., Xia, Y., Zheng, X.
2021

**Operando Study of Thermal Oxidation of Monolayer MoS2.** *Advanced science (Weinheim, Baden-Württemberg, Germany)*
Park, S., Garcia-Esparza, A. T., Abroshan, H., Abraham, B., Vinson, J., Gallo, A., Nordlund, D., Park, J., Kim, T. R., Vallez, L., Alonso-Mori, R., Sokaras, D., Zheng, et al
2021; 8 (9): 2002768

**Operando Study of Thermal Oxidation of Monolayer MoS2** *ADVANCED SCIENCE*
Park, S., Garcia-Esparza, A. T., Abroshan, H., Abraham, B., Vinson, J., Gallo, A., Nordlund, D., Park, J., Kim, T., Vallez, L., Alonso-Mori, R., Sokaras, D., Zheng, et al
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**Electrochemical Synthesis of H2O2 by Two-Electron Water Oxidation Reaction** *CHEM*
Shi, X., Back, S., Gill, T., Siahrostami, S., Zheng, X.
2021; 7 (1): 38–63

**Ultrahigh Doping of Graphene Using Flame-Deposited MoO3** *IEEE ELECTRON DEVICE LETTERS*
Vaziri, S., Chen, V., Cai, L., Jiang, Y., Chen, M. E., Grady, R. W., Zheng, X., Pop, E.
2020; 41 (10): 1592–95

**Enhancing combustion performance of nano-Al/PVDF composites with beta-PVDF** *COMBUSTION AND FLAME*
Huang, S., Hong, S., Su, Y., Jiang, Y., Fukushima, S., Gill, T., Yilmaz, N., Tiwari, S., Nomura, K., Kalia, R. K., Nakano, A., Shimojo, F., Vashishta, et al
2020; 219: 467–77

**Comparing Methods for Quantifying Electrochemically Accumulated H2O2** *CHEMISTRY OF MATERIALS*
Gill, T., Zheng, X.
2020; 32 (15): 6285–94

**Effect of Adventitious Carbon on Pit Formation of Monolayer MoS2.** *Advanced materials (Deerfield Beach, Fla.)*
Park, S., Siahrostami, S., Park, J., Mostaghimi, A. H., Kim, T. R., Vallez, L., Gill, T. M., Park, W., Goodson, K. E., Sinclair, R., Zheng, X.
2020: e2003020

**On-demand production of hydrogen by reacting porous silicon nanowires with water** *NANO RESEARCH*
Ning, R., Jiang, Y., Zeng, Y., Gong, H., Zhao, J., Weisse, J., Shi, X., Gill, T. M., Zheng, X.
2020

**Synergistically Chemical and Thermal Coupling between Graphene Oxide and Graphene Fluoride for Enhancing Aluminum Combustion.** *ACS applied materials & interfaces*
Jiang, Y. n., Deng, S. n., Hong, S. n., Tiwari, S. n., Chen, H. n., Nomura, K. I., Kalia, R. K., Nakano, A. n., Vashishta, P. n., Zachariah, M. R., Zheng, X. n.
2020

**Experimental effective metal oxides to enhance boron combustion** *COMBUSTION AND FLAME*
Huang, S., Deng, S., Jiang, Y., Zheng, X.
2019; 205: 278–85

**Modified Micro-Emulsion Synthesis of Highly Dispersed Al/PVDF Composites with Enhanced Combustion Properties** *ADVANCED ENGINEERING MATERIALS*
Huang, S., Pan, M., Deng, S., Jiang, Y., Zhao, J., Levy-Wendt, B., Tang, S. Y., Zheng, X.
2019; 21 (5)

**ZnO As an Active and Selective Catalyst for Electrochemical Water Oxidation to Hydrogen Peroxide** *ACS CATALYSIS*
Kelly, S. R., Shi, X., Back, S., Vallez, L., Park, S., Siahrostami, S., Zheng, X., Norskov, J. K.
2019; 9 (5): 4593–99

**Enhancing Electrocatalytic Water Splitting by Strain Engineering** *ADVANCED MATERIALS*
You, B., Tang, M. T., Tsai, C., Abild-Pedersen, F., Zheng, X., Li, H.
2019; 31 (17)

**A Zn: BiVO4/ Mo: BiVO4 homojunction as an efficient photoanode for photoelectrochemical water splitting** *JOURNAL OF MATERIALS CHEMISTRY A*
Lee, J., Buek, J., Gill, T., Shi, X., Lee, S., Cho, I., Jung, H., Zheng, X.
• Boosting the solar water oxidation performance of a BiVO4 photoanode by crystallographic orientation control (vol 11, pg 1299, 2018) ENERGY & ENVIRONMENTAL SCIENCE
Han, H., Shin, S., Kim, D., Park, I., Kim, J., Huang, P., Lee, J., Cho, I., Zheng, X.
2019; 12 (4): 1427

• Rapid Flame-Annealed CuFe2O4 as Efficient Photocathode for Photoelectrochemical Hydrogen Production ACS SUSTAINABLE CHEMISTRY & ENGINEERING
Park, S., Baek, J., Zhang, L., Lee, J., Stone, K. H., Cho, I., Guo, J., Jung, H., Zheng, X.
2019; 7 (6): 5867–74

• Epitaxial growth of WO3 nanoneedles achieved using a facile flame surface treatment process engineering of hole transport and water oxidation reactivity (vol 6, pg 19542, 2018) JOURNAL OF MATERIALS CHEMISTRY A
Shi, X., Cai, L., Choi, I., Ma, M., Zhang, K., Zhao, J., Kim, J., Kim, J., Zheng, X., Park, J.
2019; 7 (10): 5832

• Selective and Efficient Gd-Doped BiVO4 Photoanode for Two-Electron Water Oxidation to H2O2 ACS ENERGY LETTERS
Baek, J., Gill, T., Abroshan, H., Park, S., Shi, X., Norskov, J., Jung, H., Siahrostami, S., Zheng, X.
2019; 4 (3): 720–28

• Enhancing Electrocatalytic Water Splitting by Strain Engineering. Advanced materials (Deerfield Beach, Fla.)
You, B., Tang, M. T., Tsai, C., Abild-Pedersen, F., Zheng, X., Li, H.
2019; e1807001

• CaSnO3: An Electrocatalyst for Two-Electron Water Oxidation Reaction to Form H2O2 ACS ENERGY LETTERS
Park, S., Abroshan, H., Shi, X., Jung, H., Siahrostami, S., Zheng, X.
2019; 4 (1): 352–57

• Enhancing Catalytic Activity of MoS2 Basal Plane S-Vacancy by Co Cluster Addition ACS ENERGY LETTERS
Park, S., Park, J., Abroshan, H., Zhang, L., Kim, J., Zhang, J., Guo, J., Siahrostami, S., Zheng, X.
2018; 3 (11): 2685–93

• Epitaxial growth of WO3 nanoneedles achieved using a facile flame surface treatment process engineering of hole transport and water oxidation reactivity JOURNAL OF MATERIALS CHEMISTRY A
Shi, X., Cai, L., Choi, I., Ma, M., Zhang, K., Zhao, J., Kim, J., Kim, J., Zheng, X., Park, J.
2018; 6 (40): 19542–46

• Resolving Hysteresis in Perovskite Solar Cells with Rapid Flame-Processed Cobalt-Doped TiO2 ADVANCED ENERGY MATERIALS
Kim, J., Chai, S., Ji, Y., Levy-Wendt, B., Kim, S., Yi, Y., Heinz, T. F., Norskov, J. K., Park, J., Zheng, X.
2018; 8 (29)

• Tuning the morphological, ignition and combustion properties of micron-Al/CuO thermites through different synthesis approaches COMBUSTION AND FLAME
Deng, S., Jiang, Y., Huang, S., Shi, X., Zhao, J., Zheng, X.
2018; 195: 303–10

• Activating basal plane of MoS2 for hydrogen evolution reaction through sulfur vacancy, doping and strain Zheng, X.
AMER CHEMICAL SOC.2018

• Light-Driven BiVO4-C Fuel Cell with Simultaneous Production of H2O2 ADVANCED ENERGY MATERIALS
Shi, X., Zhang, Y., Siahrostami, S., Zheng, X.
2018; 8 (23)

• Rapid flame doping of Co to WS2 for efficient hydrogen evolution ENERGY & ENVIRONMENTAL SCIENCE
Shi, X., Fields, M., Park, J., McEnaney, J. M., Yan, H., Zhang, Y., Tsai, C., Jaramillo, T. F., Sinclair, R., Norskov, J. K., Zheng, X.
2018; 11 (8): 2270–77

• Wafer-re recyclable, environment-friendly transfer printing for large-scale thin-film nanoelectronics PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA
Wie, D., Zhang, Y., Kim, M., Kim, B., Park, S., Kim, Y., Irazoqui, P. P., Zheng, X., Xu, B., Lee, C. 2018; 115 (31): E7236–E7244

- Flame-Engraved Nickel-Iron Layered Double Hydroxide Nanosheets for Boosting Oxygen Evolution Reactivity  SMALL METHODS
  Zhou, D., Xiong, X., Cai, Z., Han, N., Jia, Y., Xie, Q., Duan, X., Xie, T., Zheng, X., Sun, X., Duan, X. 2018; 2 (7)

- Enabling silicon photoanodes for efficient solar water splitting by electroless-deposited nickel  NANO RESEARCH
  Zhao, J., Gill, T., Zheng, X. 2018; 11 (6): 3499–3508

- Boosting the solar water oxidation performance of a BiVO4 photoanode by crystallographic orientation control  ENERGY & ENVIRONMENTAL SCIENCE
  Han, H., Shin, S., Kim, D., Park, I., Kim, J., Huang, P., Lee, J., Cho, I., Zheng, X. 2018; 11 (5): 1299–1306

- Rapid Formation of a Disordered Layer on Monoclinic BiVO4: Co-Catalyst-Free Photoelectrochemical Solar Water Splitting  CHEMSUSCHEM
  Kim, J., Cho, Y., Jeong, M., Levy-Wendt, B., Shin, D., Yi, Y., Wang, D., Zheng, X., Park, J. 2018; 11 (5): 933–40

- Thermoplasmonic Ignition of Metal Nanoparticles  NANO LETTERS
  Mutlu, M., Kang, J., Raza, S., Schoen, D., Zheng, X., Kik, P. G., Brongersma, M. L. 2018; 18 (3): 1699–1706

- Enhancing Mo:BiVO4 Solar Water Splitting with Patterned Au Nanospheres by Plasmon-Induced Energy Transfer  ADVANCED ENERGY MATERIALS
  Kim, J., Shi, X., Jeong, M., Park, J., Han, H., Kim, S., Guo, Y., Heinz, T. F., Fan, S., Lee, C., Park, J., Zheng, X. 2018; 8 (5)

- Conformal Electroless Nickel Plating on Silicon Wafers, Convex & Concave Pyramids, and Ultralong Nanowires.  ACS applied materials & interfaces
  Gill, T. n., Zhao, J. n., Berenschot, E. J., Tas, N. n., Zheng, X. n. 2018

- Energetic Performance of Optically Activated Aluminum/Graphene Oxide Composites.  ACS nano
  Jiang, Y. n., Deng, S. n., Hong, S. n., Zhao, J. n., Huang, S. n., Wu, C. C., Gottfried, J. L., Nomura, K. I., Li, Y. n., Tiwari, S. n., Kalia, R. K., Vashishta, P. n., Nakano, et al 2018

- Sub-Thermionic Steep Switching in Hole-Doped WSe2 Transistors
  McClellan, C. J., Yalon, E., Cai, L., Suryavanshi, S., Zheng, X., Pop, E., IEEE
  IEEE.2018

- Ultrafast Flame Annealing of TiO2 Paste for Fabricating Dye-Sensitized and Perovskite Solar Cells with Enhanced Efficiency  SMALL
  Kim, J., Chai, S., Cho, Y., Cai, L., Kim, S., Park, S., Park, J., Zheng, X. 2017; 13 (42)

- Understanding activity trends in electrochemical water oxidation to form hydrogen peroxide  NATURE COMMUNICATIONS
  Shi, X., Siahrostami, S., Li, G., Zhang, Y., Chakthranont, P., Studt, F., Jaramillo, T. F., Zheng, X., Norskov, J. K. 2017; 8: 701

- Electroless Deposition and Ignition Properties of Si/Fe2O3 Core/Shell Nanothermites.  ACS omega
  Huang, S., Deng, S., Jiang, Y., Zhao, J., Zheng, X. 2017; 2 (7): 3596-3600

- Three-Dimensional Hetero-Integration of Faceted GaN on Si Pillars for Efficient Light Energy Conversion Devices.  ACS nano
  Kim, D. R., Lee, C. H., Cho, I. S., Jang, H., Jeon, M. S., Zheng, X. 2017
• Methanol Photo-Oxidation on Rutile TiO2 Nanowires: Probing Reaction Pathways on Complex Materials *JOURNAL OF PHYSICAL CHEMISTRY C*
  Crampton, A. S., Cai, L., Janvelyan, N., Zheng, X., Friend, C. M.
  2017; 121 (18): 9910-9919

• Electrochemical generation of sulfur vacancies in the basal plane of MoS2 for hydrogen evolution *NATURE COMMUNICATIONS*
  Tsai, C., Li, H., Park, S., Park, J., Han, H. S., Norskov, J. K., Zheng, X., Abild-Pedersen, F.
  2017; 8

• Enhancing ignition and combustion of micron-sized aluminum by adding porous silicon *PROCEEDINGS OF THE COMBUSTION INSTITUTE*
  Parimi, V. S., Huang, S., Zheng, X.
  2017; 36 (2): 2317-2324

• Facile Thermal and Optical Ignition of Silicon Nanoparticles and Micron Particles. *Nano letters*
  Huang, S. n., Parimi, V. S., Deng, S. n., Lingamneni, S. n., Zheng, X. n.
  2017; 17 (10): 5925–30

• Tuning properties of MoS2 by mechanical strain
  Li, H., Park, S., Zheng, X., IEEE
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• Sulfur-Modulated Tin Sites Enable Highly Selective Electrochemical Reduction of CO2 to Formate *Joule*
  Zheng, X., De luna, P., de Arquer, F., Zhang, B., Becknell, N., Cui, Y., Du, X., Yang, P., Sargent, E.
  2017

• Molybdenum disulfide catalyzed tungsten oxide for on-chip acetone sensing *APPLIED PHYSICS LETTERS*
  Li, H., Ahn, S. H., Park, S., Cai, L., Zhao, J., He, J., Zhou, M., Park, J., Zheng, X.
  2016; 109 (13)

• One-Step Hydrothermal Deposition of Ni:FeOOH onto Photoanodes for Enhanced Water Oxidation *ACS ENERGY LETTERS*
  Cai, L., Zhao, J., Li, H., Park, J., Cho, I. S., Han, H. S., Zheng, X.
  2016; 1 (3): 624-632

• High-Performance Ultrathin BiVO4 Photoanode on Textured Polydimethylsiloxane Substrates for Solar Water Splitting *ACS ENERGY LETTERS*
  Zhao, J., Guo, Y., Cai, L., Li, H., Wang, K. X., Cho, I. S., Lee, C. H., Fan, S., Zheng, X.
  2016; 1 (1): 68-75

• Kinetic Study of Hydrogen Evolution Reaction over Strained MoS2 with Sulfur Vacancies Using Scanning Electrochemical Microscopy *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Li, H., Du, M., Mleczko, M. J., Koh, A. L., Nishi, Y., Pop, E., Bard, A. J., Zheng, X.
  2016; 138 (15): 5123-5129

• Quasi-ballistic Electronic Thermal Conduction in Metal Inverse Opals. *Nano letters*
  Barako, M. T., Sood, A., Zhang, C., Wang, J., Kodama, T., Asheghi, M., Zheng, X., Braun, P. V., Goodson, K. E.
  2016; 16 (4): 2754-2761

• Enhancing Low-Bias Performance of Hematite Photoanodes for Solar Water Splitting by Simultaneous Reduction of Bulk, Interface, and Surface Recombination Pathways *ADVANCED ENERGY MATERIALS*
  Cho, I. S., Han, H. S., Logar, M., Park, J., Zheng, X.
  2016; 6 (4)

• Activating and optimizing MoS2 basal planes for hydrogen evolution through the formation of strained sulphur vacancies *NATURE MATERIALS*
  Li, H., Tsai, C., Koh, A. L., Cai, L., Contrysman, A. W., Fragapane, A. H., Zhao, J., Han, H. S., Manoharan, H. C., Abild-Pedersen, F., Norskov, J. K., Zheng, X.
  2016; 15 (1): 48-?

• General Characterization Methods for Photoelectrochemical Cells for Solar Water Splitting *CHEMSUSCHEM*
  Shi, X., Cai, L., Ma, M., Zheng, X., Park, J. H.
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• Highly Efficient Solar Water Splitting from Transferred TiO2 Nanotube Arrays. *Nano letters*
  Cho, I. S., Choi, J., Zhang, K., Kim, S. J., Jeong, M. J., Cai, L., Park, T., Zheng, X., Park, J. H.
Bridging combustion and nanotechnology
Zheng, X.
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Enhancing Catalytic CO Oxidation over Co3O4 Nanowires by Substituting Co2+ with Cu2+ ACS CATALYSIS
Zhou, M., Cai, L., Bajdich, M., Garcia-Melchor, M., Li, H., He, J., Wilcox, J., Wu, W., Vojvodic, A., Zheng, X.
2015; 5 (8): 4485-4491

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