Stanford

# Wendy Mao

Professor of Earth and Planetary Sciences and of Photon Science

Earth & Planetary Sciences

## Bio

### ACADEMIC APPOINTMENTS

- Professor, Earth & Planetary Sciences
- Professor, Photon Science Directorate
- Principal Investigator, Stanford Institute for Materials and Energy Sciences
- Member, Stanford PULSE Institute

### ADMINISTRATIVE APPOINTMENTS

- Chair, Earth and Planetary Sciences, Stanford University, (2023- present)
- Professor, Stanford University, (2019- present)
- Associate Professor, Stanford University, (2014-2019)
- Assistant Professor of Geophysics (by courtesy), Stanford University, (2009- present)
- Assistant Professor, Stanford University, (2007-2014)
- J. R. Oppenheimer Post-doctoral Fellow, Los Alamos National Laboratory, (2005-2007)

### HONORS AND AWARDS

- Fellow, American Geophysical Union (2021)
- Fellow, Geochemical Society (2021)
- Award Recipient, Mineralogical Society of America (2013)
- NSF CAREER Award, National Science Foundation (2011)
- Fellow, Frederick E. Terman Fellowship (2009 - Present)
- COMPRES Distinguished Lecturer, Stanford University (2008-2009)
- Mineral and Rocks Physics Group Student Research Award, University of Chicago (2006)
- Rosalind Franklin Young Investigator Award, University of Chicago (2006)
- Fellow, J. R. Oppenheimer Fellowship (2005 - 2007)
- Phi Beta Kappa, Massachusetts Institute of Technology (1998)

### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Advisory Group on Women at SLAC, SLAC National Accelerator Laboratory (2015 - present)
- CSEDI Steering Committee, NSF (2015 - present)
- Chair, GES Graduate Admissions Committee, Stanford University (2015 - present)

- DIF Advisory Committee, Stanford University (2015 - present)
- GES Communications Committee, Stanford University (2014 - present)
- Co-chair of Extreme Physics and Chemistry Directorate, Deep Carbon Observatory (2013 - present)
- GES Graduate Admissions Committee, Stanford University (2012 - present)
- Photon Science Integration Committee, SLAC National Accelerator Laboratory (2012 - 2013)
- Scientific Steering Committee for the Extreme Physics and Chemistry Directorate, Deep Carbon Observatory (2011 - present)
- LCLS Users' Executive Committee, SLAC National Accelerator Laboratory (2011 - 2014)
- Associate Editor, American Mineralogist (2010 - present)
- GES representative on SES Educational Outreach Committee, Stanford University (2010 - present)
- Pre-Majors Advisor, Stanford University (2010 - present)
- SNAP Instrument Design Team - Spallation Neutron Source, ORNL, Oak Ridge National Laboratory (2010 - present)
- Chair, Award Committee, Rosalind Frankin Young Investigator Asard (2010 - 2010)
- COMPRES Facilities Committee, Consortium for Materials Properties Research in Earth Sciences (2009 - present)
- Member of APS Users Organization Steering Committee, Advanced Photon Source, Argonne National Laboratory (2009 - present)
- GES Dept Seminar Coordinator (w/ Maher), Stanford University (2009 - 2011)
- Search Committee for Geochronology, Petrology, Geodynamics position, Stanford University (2008 - 2009)
- GES Long Range Planning Committee, Stanford University (2007 - 2008)
- West Coast High Pressure Facilities Review Committee, Advanced Light Source, Lawrence Berkeley National Laboratory (2006 - present)

### PROFESSIONAL EDUCATION

- Ph.D., University of Chicago , Geophysical Sciences (2005)
- B.S., Massachusetts Institute of Technology , Materials Science and Engineering (1998)

### LINKS

- Research Group Site: https://sites.stanford.edu/eel/

## Research & Scholarship

### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

Pressure induces dramatic changes in materials. I study the behavior of materials under compression which often leads to the discovery of novel phases and new phenomena. This research has a wide variety of applications including improving our understanding the interiors of Earth and other planetary bodies, providing insight into the condensation and evolution of volatiles in planetary systems, and providing guidance for developing new materials for energy related applications like hydrogen fuel storage and advanced batteries.

Teaching

I teach classes on understanding the Earth's interior, mineralogy, and a freshman seminar on diamonds.

## Teaching

### COURSES

**2025-26**

- Chemistry of the Earth and Planets: EARTHSYS 2, EPS 2 (Aut)

- Survey of research in the Earth & Planetary Sciences: EPS 304 (Win)

**2024-25**

- Chemistry of the Earth and Planets: EARTHSYS 2, EPS 2 (Aut)
- Survey of research in the Earth & Planetary Sciences: EPS 304 (Win)

**2023-24**

- Chemistry of the Earth and Planets: EARTHSYS 2, EPS 2 (Aut)
- Survey of research in the Earth & Planetary Sciences: EPS 304 (Aut)

**2022-23**

- Chemistry of the Earth and Planets: EARTHSYS 2, GEOLSCI 2 (Aut)

### STANFORD ADVISEES

**Doctoral Dissertation Reader (AC)**

Hannah Bartels

**Postdoctoral Faculty Sponsor**

Mengnan Wang, Xin Zhang, Yanyao Zhang

**Doctoral Dissertation Advisor (AC)**

Cindy Wang

**Doctoral (Program)**

Amanda Chen

## Publications

### PUBLICATIONS

- **Making the most of metastability.** *Science (New York, N.Y.)*
  Mao, W. L., Lin, Y.
  2022; 377 (6608): 814-815

- **Preservation of high-pressure volatiles in nanostructured diamond capsules.** *Nature*
  Zeng, Z., Wen, J., Lou, H., Zhang, X., Yang, L., Tan, L., Cheng, B., Zuo, X., Yang, W., Mao, W. L., Mao, H., Zeng, Q.
  2022; 608 (7923): 513-517

- **Ultrafast structural response of shock-compressed plagioclase** *METEORITICS & PLANETARY SCIENCE*
  Gleason, A. E., Park, S., Rittman, D. R., Ravasio, A., Langenhorst, F., Bolis, R. M., Granados, E., Hok, S., Kroll, T., Sikorski, M., Weng, T., Lee, H., Nagler, et al
  2022

- **Engineering Bright and Mechanosensitive Alkaline-Earth Rare-Earth Upconverting Nanoparticles.** *The journal of physical chemistry letters*
  McLellan, C. A., Siefe, C., Casar, J. R., Peng, C. S., Fischer, S., Lay, A., Parakh, A., Ke, F., Gu, X. W., Mao, W., Chu, S., Goodman, M. B., Dionne, et al
  2022: 1547-1553

- **Femtosecond Visualization of hcp-Iron Strength and Plasticity under Shock Compression.** *Physical review letters*
  Merkel, S., Hok, S., Bolme, C., Rittman, D., Ramos, K. J., Morrow, B., Lee, H. J., Nagler, B., Galtier, E., Granados, E., Hashim, A., Mao, W. L., Gleason, et al
  2021; 127 (20): 205501

- **Pressure-induced suppression of Jahn-Teller distortions and enhanced electronic properties in high-entropy oxide (Mg0.2Ni0.2Co0.2Zn0.2Cu0.2)O** *APPLIED PHYSICS LETTERS*
  Yan, J., Zhang, L., Liu, J., Li, N., Tamura, N., Chen, B., Lin, Y., Mao, W. L., Zhang, H.

2021; 119 (15)

- **Sub-10-nm graphene nanoribbons with atomically smooth edges from squashed carbon nanotubes** *NATURE ELECTRONICS*
  Chen, C., Lin, Y., Zhou, W., Gong, M., He, Z., Shi, F., Li, X., Wu, J., Lam, K., Wang, J., Yang, F., Zeng, Q., Guo, et al
  2021
- **Characteristics and implications of podiform-chromite hosted silicate inclusions in the Zedang ophiolite, Southern Tibet** *LITHOS*
  Guo, G., Mao, W. L., Zhang, R. Y., Liou, J. G., Ernst, W. G., Yang, J., Liu, X., Xu, X., Zhang, Y., Wu, B.
  2021; 396
- **Ultrafast X-ray Diffraction Study of a Shock-Compressed Iron Meteorite above 100 GPa** *MINERALS*
  Tecklenburg, S., Colina-Ruiz, R., Hok, S., Bolme, C., Galtier, E., Granados, E., Hashim, A., Lee, H., Merkel, S., Morrow, B., Nagler, B., Ramos, K., Rittman, et al
  2021; 11 (6)
- **Mineralogy of the deep lower mantle in the presence of H2O.** *National science review*
  Hu, Q., Liu, J., Chen, J., Yan, B., Meng, Y., Prakapenka, V. B., Mao, W. L., Mao, H. K.
  2021; 8 (4): nwaa098
- **Evidence for oxygenation of Fe-Mg oxides at mid-mantle conditions and the rise of deep oxygen.** *National science review*
  Liu, J., Wang, C., Lv, C., Su, X., Liu, Y., Tang, R., Chen, J., Hu, Q., Mao, H. K., Mao, W. L.
  2021; 8 (4): nwaa096
- **Probing the Electronic Band Gap of Solid Hydrogen by Inelastic X-Ray Scattering up to 90GPa.** *Physical review letters*
  Li, B., Ding, Y., Kim, D. Y., Wang, L., Weng, T., Yang, W., Yu, Z., Ji, C., Wang, J., Shu, J., Chen, J., Yang, K., Xiao, et al
  2021; 126 (3): 036402
- **Pressure-induced excimer formation and fluorescence enhancement of an anthracene derivative** *JOURNAL OF MATERIALS CHEMISTRY C*
  Dai, Y., Liu, H., Geng, T., Ke, F., Niu, S., Wang, K., Qi, Y., Zou, B., Yang, B., Mao, W. L., Lin, Y.
  2021; 9 (3): 934–38
- **Polyamorphism in a solute-lean Al-Ce metallic glass** *JOURNAL OF APPLIED PHYSICS*
  Yin, Z., Lou, H., Sheng, H., Zeng, Z., Mao, W. L., Zeng, Q.
  2021; 129 (2)
- **Preserving a robust CsPbI3 perovskite phase via pressure-directed octahedral tilt.** *Nature communications*
  Ke, F. n., Wang, C. n., Jia, C. n., Wolf, N. R., Yan, J. n., Niu, S. n., Devereaux, T. P., Karunadasa, H. I., Mao, W. L., Lin, Y. n.
  2021; 12 (1): 461
- **Revealing Local Disorder in a Silver-Bismuth Halide Perovskite upon Compression.** *The journal of physical chemistry letters*
  Girdzis, S. P., Lin, Y., Leppert, L., Slavney, A. H., Park, S., Chapman, K. W., Karunadasa, H. I., Mao, W. L.
  2020: 532–36
- **Synthesis of Atomically Thin Hexagonal Diamond with Compression.** *Nano letters*
  Ke, F., Zhang, L., Chen, Y., Yin, K., Wang, C., Tzeng, Y., Lin, Y., Dong, H., Liu, Z., Tse, J. S., Mao, W. L., Wu, J., Chen, et al
  2020
- **Origin of Plasticity in Nanostructured Silicon.** *Physical review letters*
  Zeng, Z., Zeng, Q., Ge, M., Chen, B., Lou, H., Chen, X., Yan, J., Yang, W., Mao, H. K., Yang, D., Mao, W. L.
  2020; 124 (18): 185701
- **Origin of Plasticity in Nanostructured Silicon** *PHYSICAL REVIEW LETTERS*
  Zeng, Z., Zeng, Q., Ge, M., Chen, B., Lou, H., Chen, X., Yan, J., Yang, W., Mao, H., Yang, D., Mao, W. L.
  2020; 124 (18)
- **Key problems of the four-dimensional Earth system** *MATTER AND RADIATION AT EXTREMES*
  Mao, H., Mao, W. L.
  2020; 5 (3)
- **Crystallography of low Z material at ultrahigh pressure: Case study on solid hydrogen** *MATTER AND RADIATION AT EXTREMES*
  Ji, C., Li, B., Liu, W., Smith, J. S., Bjorling, A., Majumdar, A., Luo, W., Ahuja, R., Shu, J., Wang, J., Sinogeikin, S., Meng, Y., Prakapenka, et al

2020; 5 (3)

- **Facile diamond synthesis from lower diamondoids.** *Science advances*
  Park, S. n., Abate, I. I., Liu, J. n., Wang, C. n., Dahl, J. E., Carlson, R. M., Yang, L. n., Prakapenka, V. B., Greenberg, E. n., Devereaux, T. P., Jia, C. n., Ewing, R. C., Mao, et al
  2020; 6 (8): eaay9405

- **Diamondoids Under Pressure** *CARBON IN EARTH'S INTERIOR*
  Park, S., Lin, Y., Mao, W. L.
  edited by Manning, C. E., Lin, J. F., Mao, W. L.
  2020; 249: 341-349

- **Nitrogen in black phosphorus structure.** *Science advances*
  Ji, C. n., Adeleke, A. A., Yang, L. n., Wan, B. n., Gou, H. n., Yao, Y. n., Li, B. n., Meng, Y. n., Smith, J. S., Prakapenka, V. B., Liu, W. n., Shen, G. n., Mao, et al
  2020; 6 (23): eaba9206

- **In situ X-ray diffraction of silicate liquids and glasses under dynamic and static compression to megabar pressures.** *Proceedings of the National Academy of Sciences of the United States of America*
  Morard, G. n., Hernandez, J. A., Guarguaglini, M. n., Bolis, R. n., Benuzzi-Mounaix, A. n., Vinci, T. n., Fiquet, G. n., Baron, M. A., Shim, S. H., Ko, B. n., Gleason, A. E., Mao, W. L., Alonso-Mori, et al
  2020

- **Tuning Emission and Electron-Phonon Coupling in Lead-Free Halide Double Perovskite Cs2AgBiCl6 under Pressure** *ACS ENERGY LETTERS*
  Zhang, L., Fang, Y., Sui, L., Yan, J., Wang, K., Yuan, K., Mao, W. L., Zou, B.
  2019; 4 (12): 2975–82

- **Ultrahigh-pressure isostructural electronic transitions in hydrogen.** *Nature*
  Ji, C., Li, B., Liu, W., Smith, J. S., Majumdar, A., Luo, W., Ahuja, R., Shu, J., Wang, J., Sinogeikin, S., Meng, Y., Prakapenka, V. B., Greenberg, et al
  2019; 573 (7775): 558–62

- **Pressure-Induced Emission (PIE) and Phase Transition of a Two-dimensional Halide Double Perovskite (BA)4AgBiBr8 (BA = CH3(CH2)3NH3+).** *Angewandte Chemie (International ed. in English)*
  Fang, Y., Zhang, L., Wu, L., Yan, J., Lin, Y., Wang, K., Mao, W. L., Zou, B.
  2019

- **Halide perovskites under pressure**
  Jaffe, A., Lin, Y., Mao, W., Karunadasa, H.
  AMER CHEMICAL SOC.2019

- **Electronic spin transition in FeO2: Evidence for Fe(II) with peroxide O-2(2-)** *PHYSICAL REVIEW B*
  Jang, B., Liu, J., Hu, Q., Haule, K., Mao, H., Mao, W. L., Kim, D., Shim, J.
  2019; 100 (1)

- **Applications for Nanoscale X-ray Imaging at High Pressure** *ENGINEERING*
  Mao, W. L., Lin, Y., Liu, Y., Liu, J.
  2019; 5 (3): 479–89

- **Structure-Controlled Oxygen Concentration in Fe2O3 and FeO2** *INORGANIC CHEMISTRY*
  Zhu, S., Liu, J., Hu, Q., Mao, W. L., Meng, Y., Zhang, D., Mao, H., Zhu, Q.
  2019; 58 (9): 5476–82

- **Anomalous behavior of nonequilibrium excitations in UO2** *PHYSICAL REVIEW B*
  Rittman, D. R., Teitelbaum, S. W., Reis, D. A., Mao, W. L., Ewing, R. C.
  2019; 99 (13)

- **Tuning Optical and Electronic Properties in Low-Toxicity Organic-Inorganic Hybrid (CH3NH3)(3)Bi2I9 under High Pressure** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Zhang, L., Liu, C., Lin, Y., Wang, K., Ke, F., Liu, C., Mao, W. L., Zou, B.
  2019; 10 (8): 1676–83

- **Phase transformations of Al-bearing high-entropy alloys AlxCoCrFeNi (x=0, 0.1, 0.3, 0.75, 1.5) at high pressure** *APPLIED PHYSICS LETTERS*
  Wang, C., Tracy, C. L., Park, S., Liu, J., Ke, F., Zhang, F., Yang, T., Xia, S., Li, C., Wang, Y., Zhang, Y., Mao, W. L., Ewing, et al
  2019; 114 (9)

- **Altered chemistry of oxygen and iron under deep Earth conditions** *NATURE COMMUNICATIONS*
  Liu, J., Hu, Q., Bi, W., Yang, L., Xiao, Y., Chow, P., Meng, Y., Prakapenka, V. B., Mao, H., Mao, W. L.
  2019; 10

- **Diffusion-controlled alloying of single-phase multi-principal transition metal carbides with high toughness and low thermal diffusivity** *APPLIED PHYSICS LETTERS*
  Peng, C., Gao, X., Wang, M., Wu, L., Tang, H., Li, X., Zhang, Q., Ren, Y., Zhang, F., Wang, Y., Zhang, B., Gao, B., Zou, et al
  2019; 114 (1)

- **High Compression-Induced Conductivity in a Layered Cu-Br Perovskite.** *Angewandte Chemie (International ed. in English)*
  Jaffe, A. n., Mack, S. A., Lin, Y. n., Mao, W. n., Neaton, J. B., Karunadasa, H. n.
  2019

- **Superconducting transition temperatures in the electronic and magnetic phase diagrams of Sr<sub>2</sub>VFeAsO<sub>3-delta</sub>, a superconductor.** *Journal of physics. Condensed matter : an Institute of Physics journal*
  Tojo, Y., Shibuya, T., Nakamura, T., Shoji, K., Fujioka, H., Matoba, M., Yasui, S., Itoh, M., Iimura, S., Hiramatsu, H., Hosono, H., Hirai, S., Mao, et al
  2018

- **The effect of nickel on the strength of iron nickel alloys: Implications for the Earth's inner core** *PHYSICS OF THE EARTH AND PLANETARY INTERIORS*
  Reagan, M. M., Gleason, A. E., Liu, J., Krawczynski, M. J., Van Orman, J. A., Mao, W. L.
  2018; 283: 43–47

- **Mechanosensitive upconverting nanoparticles for visualizing mechanical forces in vivo**
  Lay, A., Siefe, C., Fischer, S., Mehlenbacher, R., Das, A., Nekimken, A., Ke, F., Mao, W., Pruitt, B., Cohen, B., Alivisatos, P., Goodman, M., Dionne, et al
  AMER CHEMICAL SOC.2018

- **Revealing the formation mechanism of ultrahard nanotwinned diamond from onion carbon** *CARBON*
  Tang, H., Yuan, X., Yu, P., Hu, Q., Wang, M., Yao, Y., Wu, L., Zou, Q., Ke, Y., Zhao, Y., Wang, L., Li, X., Yang, et al
  2018; 129: 159–67

- **Radiation-induced disorder in compressed lanthanide zirconates** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Park, S., Tracy, C. L., Zhang, F., Park, C., Trautmann, C., Tkachev, S. N., Lang, M., Maoah, W. L., Ewing, R. C.
  2018; 20 (9): 6187–97

- **Sterically controlled mechanochemistry under hydrostatic pressure** *NATURE*
  Yan, H., Yang, F., Pan, D., Lin, Y., Hohman, J., Solis-Ibarra, D., Li, F., Dahl, J. E. P., Carlson, R. M. K., Tkachenko, B. A., Fokin, A. A., Schreiner, P. R., Galli, et al
  2018; 554 (7693): 505-+

- **A(2)TiO(5) (A = Dy, Gd, Er, Yb) at High Pressure** *INORGANIC CHEMISTRY*
  Park, S., Rittman, D. R., Tracy, C. L., Chapman, K. W., Zhang, F., Park, C., Tkachev, S. N., O'Quinn, E., Shamblin, J., Lang, M., Mao, W. L., Ewing, R. C.
  2018; 57 (4): 2269–77

- **Swift-heavy ion irradiation response and annealing behavior of A(2)TiO(5) (A = Nd, Gd, and Yb)** *JOURNAL OF SOLID STATE CHEMISTRY*
  Park, S., Tracy, C. L., Zhang, F., Palomares, R. I., Park, C., Trautmann, C., Lang, M., Mao, W. L., Ewing, R. C.
  2018; 258: 108–16

- **Phase transformation pathways of ultrafast-laser-irradiated Ln(2)O(3) (Ln = Er-Lu)** *PHYSICAL REVIEW B*
  Rittman, D. R., Tracy, C. L., Chen, C., Solomon, J. M., Asta, M., Mao, W. L., Yalisove, S. M., Ewing, R. C.
  2018; 97 (2)

- **Bright, Mechanosensitive Upconversion with Cubic-Phase Heteroepitaxial Core-Shell Nanoparticles.** *Nano letters*
  Lay, A. n., Siefe, C. n., Fischer, S. n., Mehlenbacher, R. D., Ke, F. n., Mao, W. L., Alivisatos, A. P., Goodman, M. B., Dionne, J. A.

2018

- **Lanthanide stannate pyrochlores (Ln(2)Sn(2)O(7); Ln = Nd, Gd, Er) at high pressure** *JOURNAL OF PHYSICS-CONDENSED MATTER*
  Turner, K. M., Tracy, C. L., Mao, W. L., Ewing, R. C.
  2017; 29 (50)
- **Lanthanide stannate pyrochlores (Ln2Sn2O7; Ln = Nd, Gd, Er) at high pressure.** *Journal of physics. Condensed matter : an Institute of Physics journal*
  Turner, K. M., Tracy, C. L., Mao, W. L., Ewing, R. C.
  2017; 29 (50): 504005
- **Hydrogen-bearing iron peroxide and the origin of ultralow-velocity zones** *NATURE*
  Liu, J., Hu, Q., Kim, D., Wu, Z., Wang, W., Xiao, Y., Chow, P., Meng, Y., Prakapenka, V. B., Mao, H., Mao, W. L.
  2017; 551 (7681): 494-+
- **Lanthanide stannate pyrochlores (Ln<sub>2</sub>Sn<sub>2</sub>O<sub>7</sub>; Ln = Nd, Gd, Er) at high pressure.** *Journal of physics. Condensed matter : an Institute of Physics journal*
  Turner, K. M., Tracy, C. L., Mao, W. L., Ewing, R. C.
  2017
- **When water meets iron at Earth's core-mantle boundary** *NATIONAL SCIENCE REVIEW*
  Mao, H., Hu, Q., Yang, L., Liu, J., Kim, D., Meng, Y., Zhang, L., Prakapenka, V. B., Yang, W., Mao, W. L.
  2017; 4 (6): 870–78
- **Hydrogen-Bond Symmetrization Breakdown and Dehydrogenation Mechanism of FeO2H at High Pressure.** *Journal of the American Chemical Society*
  Zhu, S. C., Hu, Q., Mao, W. L., Mao, H. K., Sheng, H.
  2017; 139 (35): 12129-12132
- **Synthesis of quenchable amorphous diamond** *NATURE COMMUNICATIONS*
  Zeng, Z., Yang, L., Zeng, Q., Lou, H., Sheng, H., Wen, J., Miller, D. J., Meng, Y., Yang, W., Mao, W. L., Mao, H.
  2017; 8: 322
- **Pressure-induced structural modifications of rare-earth hafnate pyrochlore.** *Journal of physics. Condensed matter : an Institute of Physics journal*
  Turner, K. M., Rittman, D. R., Heymach, R. A., Tracy, C. L., Turner, M. L., Fuentes, A. F., Mao, W. L., Ewing, R. C.
  2017; 29 (25): 255401-?
- **High pressure synthesis of a hexagonal close-packed phase of the high-entropy alloy CrMnFeCoNi** *NATURE COMMUNICATIONS*
  Tracy, C. L., Park, S., Rittman, D. R., Zinkle, S. J., Bei, H., Lang, M., Ewing, R. C., Mao, W. L.
  2017; 8
- **Strain engineered pyrochlore at high pressure.** *Scientific reports*
  Rittman, D. R., Turner, K. M., Park, S., Fuentes, A. F., Park, C., Ewing, R. C., Mao, W. L.
  2017; 7 (1): 2236-?
- **The structure and unconventional dihydrogen bonding of a pressure-stabilized hydrogen-rich (NH3BH3)(H-2)(x) (x=1.5) compound** *JOURNAL OF MATERIALS CHEMISTRY A*
  Lin, Y., Welchman, E., Thonhauser, T., Mao, W. L.
  2017; 5 (15): 7111-7117
- **Pressure-Induced Metallization of the Halide Perovskite (CH3NH3)PbI3** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Jaffe, A., Lin, Y., Mao, W. L., Karunadasa, H. I.
  2017; 139 (12): 4330-4333
- **Dehydrogenation of goethite in Earth's deep lower mantle.** *Proceedings of the National Academy of Sciences of the United States of America*
  Hu, Q., Kim, D. Y., Liu, J., Meng, Y., Yang, L., Zhang, D., Mao, W. L., Mao, H.
  2017; 114 (7): 1498-1501
- **High-pressure behavior of A(2)B(2)O(7) pyrochlore (A=Eu, Dy; B=Ti, Zr)** *JOURNAL OF APPLIED PHYSICS*
  Rittman, D. R., Turner, K. M., Park, S., Fuentes, A. F., Yan, J., Ewing, R. C., Mao, W. L.

2017; 121 (4)

- **Dynamic Optical Tuning of Interlayer Interactions in the Transition Metal Dichalcogenides.** *Nano letters*
  Mannebach, E. M., Nyby, C. n., Ernst, F. n., Zhou, Y. n., Tolsma, J. n., Li, Y. n., Sher, M. J., Tung, I. C., Zhou, H. n., Zhang, Q. n., Seyler, K. L., Clark, G. n., Lin, et al
  2017; 17 (12): 7761–66
- **High-pressure compressibility and vibrational properties of (Ca,Mn)CO3** *AMERICAN MINERALOGIST*
  Liu, J., Caracas, R., Fan, D., Bobocioiu, E., Zhang, D., Mao, W. L.
  2016; 101 (12): 2723-2730
- **Effects of Molecular Geometry on the Properties of Compressed Diamondoid Crystals** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Yang, F., Lin, Y., Baldini, M., Dahl, J. E., Carlson, R. M., Mao, W. L.
  2016; 7 (22): 4641-4647
- **Substantial tensile ductility in sputtered Zr-Ni-Al nano-sized metallic glass** *ACTA MATERIALIA*
  Liontas, R., Jafary-Zadeh, M., Zeng, Q., Zhang, Y., Mao, W. L., Greer, J. R.
  2016; 118: 270-285
- **Pressure tuning the lattice and optical response of silver sulfide** *APPLIED PHYSICS LETTERS*
  Zhao, Z., Wei, H., Mao, W. L.
  2016; 108 (26)
- **High-pressure behavior of the polymorphs of FeOOH** *AMERICAN MINERALOGIST*
  Reagan, M. M., Gleason, A. E., Daemen, L., Xiao, Y., Mao, W. L.
  2016; 101 (5-6): 1483-1488
- **Pressure-dependent isotopic composition of iron alloys** *SCIENCE*
  Shahar, A., Schauble, E. A., Caracas, R., Gleason, A. E., Reagan, M. M., Xiao, Y., Shu, J., Mao, W.
  2016; 352 (6285): 580-582
- **High-Pressure Single-Crystal Structures of 3D Lead-Halide Hybrid Perovskites and Pressure Effects on their Electronic and Optical Properties.** *ACS central science*
  Jaffe, A., Lin, Y., Beavers, C. M., Voss, J., Mao, W. L., Karunadasa, H. I.
  2016; 2 (4): 201-209
- **In situ measurement of lithiation-induced stress in silicon nanoparticles using micro-Raman spectroscopy** *NANO ENERGY*
  Zeng, Z., Liu, N., Zeng, Q., Lee, S. W., Mao, W. L., Cui, Y.
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