

CURRICULUM VITAE

Dr. ZHOU, Xuan

ORCID: 0000-0002-4143-0248

Assistant Professor, Department of Physics and Astronomy

The University of Texas at San Antonio (UTSA)

One UTSA Circle, AET 3.374, San Antonio, TX 78249

(217) 418-5745 xuan.zhou@utsa.edu

Lab website: <https://sciences.utsa.edu/labs/xuan-zhou/index.html>

PROFESSIONAL PREPARATION

- 2016-2022 **Postdoctoral Researcher**, Shock Waves, Department of Chemistry
University of Illinois at Urbana-Champaign, Urbana, Illinois, United States
Advisor: Dr. Dana D. Dlott
- 2014-2016 **Postdoctoral Researcher**, Electrochemistry, Department of Chemistry
University of Illinois at Urbana-Champaign, Urbana, Illinois, United States
Advisor: Dr. Joaquin Rodriguez Lopez
- 2014 **Ph.D.**, Optics and Nanotechnology
Université de Technologie de Troyes, Troyes, Aube, France
Advisor: Dr. Renaud Bachelot
- 2010 **M.S.**, Mechanics and Physics, Specialty in Optics and Nanotechnology
Université de Technologie de Troyes, Troyes, Aube, France
Advisor: Dr. Renaud Bachelot
- 2009 **B.S.**, Materials Physics, Department of Physics
Xi'an Jiaotong University, Xi'an, Shaanxi, China

APPOINTMENTS AND POSITIONS

- 2022-present **Assistant Professor**, Department of Physics and Astronomy,
The University of Texas at San Antonio, San Antonio, Texas, United States
- 2023-present **Assistant Professor** (joint), Department of Mechanical Engineering,
The University of Texas at San Antonio, San Antonio, Texas, United States

MENTORING & TEACHING

- 2022-present Mentoring of graduate students and undergraduate students at the UTSA
- 2022-present Teaching Undergraduate and Graduate Courses
PHY 3443 – *Modern Optics*
PHY 1943 – *Physics for Scientists and Engineers I*
PHY 7983 – *Current Topics in Physics*
PHY 4913 & 6953 – *Independent Studies*
PHY 7013 – *Research Seminars*
- 2015 University of Illinois at Urbana-Champaign, Graduate course
CHEM 588 – *Physical Methods in Materials Chemistry*
- 2014 Mentoring of undergraduate students at the *Université de Technologie de Troyes*

PROFESSIONAL ACTIVITIES AND SERVICES

- 2025 Proposal reviewer, National Science Foundation, Division of Materials Research
- 2025-present Proposal reviewer, Center for Nanoscale Materials, Argonne National Laboratory

2024-present Proposal Reviewer for UTSA Seed Grant
2017-present Reviewer for: *JACS*; *ACS Nano*; *Nano Letters*, *Applied Physics Letters*; *ACS Applied Materials & Interfaces*; *The Journal of Physical Chemistry Letters*; *The Journal of Physical Chemistry*; *Dyes and Pigments*; *Sensors & Actuators: B. Chemical*; *Journal of Applied Physics*; etc.

PROFESSIONAL MEMBERSHIPS

2025-present The International Society for Optics and Photonics (SPIE), Member
2023-present American Chemical Society (ACS), Member
2017-present American Physical Society (APS), Member
2012-2014 American Association for the Advancement of Science (AAAS), Member

SELECTED PUBLICATIONS

* Corresponding author; §UTSA students

1. K. Johnson[§], S. Gumber, O. Prezhdo, X. Zhou*. Pressure-Tuned Plasmonic Propagation on a Silver Nanowire. 2025. In Preparation.
2. K. Johnson[§], K. Mikolaichik[§], D. Gosztola, R. Schaller, G. Wiederrecht, X. Zhou*. Pressure-Induced Stacking of Rhodamine 6G molecules. *J. Phys. Chem. C* 2025, Just accepted, DOI assigned: <https://doi.org/10.1021/acs.jpcc.5c07019>
3. K. Johnson[§], O. Soppera, X. Zhou*. Exploring Plasmonic Hybrid System under High Pressures. *SPIE Optics and Photonics*. 2025. ([link](#))
4. M. Bhowmick, D. Sellan, K. Johnson[§], K. Mikolaichik[§], X. Zhou, A. Das, C. Ramkumar, B. A. Magill, N. W.G. Smith, G. A. Khodaparast. Probing Structural Alterations in Shock Compressed GaAs. *AIP Advances* 2025, 15, 035203. ([link](#))
5. M. Murchland, S. Elasar, G. Viner, X. Zhou, M. Gillis, C. Almquist, B. Cymes, M. Bhowmick, C.L. McLeod, M.P.S. Krekeler. The Effect of Shock Compression on the Crystal Structure of Cryptomelane (K-OMS-2). *Dyn. Behav. Mater* 2024, 10 (3), 223-236. ([link](#))
6. M. Chen, S. Marguet, A. Issa, S. Jradi, C. Couteau, C. Fiorini-Debuisschert, L. Douillard, O. Soppera, D. Ge, J. Plain, X. Zhou, C. Dang, J. Béal, S. Kostcheev, R. Déturche, T. Xu, B. Wei, R. Bachelot. Approaches for positioning the active medium in hybrid nanoplasmonics. Focus on plasmon-assisted photopolymerization. *ACS Photonics* 2024, 11 (10), 3933-3953. ([link](#))
7. N. R. Jenkins, X. Zhou, M. Bhowmick, C. L. McLeod, M. P.S. Krekeler. Investigation into the stability of synthetic goethite after dynamic shock compression. *Phys. Chem. Miner.* 2024, 51 (22). ([link](#))
8. D Sellan, X Zhou, L Salvati III, SK Valluri, DD Dlott. Seeing inside shocked plastic-bonded explosives. *AIP Conference Proceedings* 2023, 2844, 260002. ([link](#))
9. M. Bhowmick, B. Ullrich, M. Murchland, X. Zhou, C. Ramkumar. Substrate and Excitation Intensity Dependence of Saturable Absorption in Perovskite Quantum Dot Films. *Nanomaterials* 2023, 13 (5), 871. ([link](#))
10. M. Bhowmick, J. Fryman, X. Zhou, C. Ramkumar. Probing Shock-Induced Structural Changes in GaSb. *Optics Lett.* 2023, 48 (2), 307-310. ([link](#))

11. D. Sellan, **X. Zhou**, L. Salvati, S. K. Valluri, D. D. Dlott. In Operando Measurements of High Explosives. *J. Chem. Phys.* 2022, 157 (22). ([link](#))
12. S. Roy, B. P. Johnson, **X. Zhou**, Y. T. Nguyen, D. D. Dlott, H. S. Udaykumar. Hot Spot Ignition and Growth from Tandem Micro-Scale Simulations and Experiments on Plastic-Bonded Explosives. *J. App. Phys.* 2022, 131 (20). ([link](#))
13. B. P. Johnson, **X. Zhou**, D. D. Dlott. Shock Pressure Dependence of Hot Spots in a Model Plastic-Bonded Explosive. *J. Phys. Chem. A* 2022, 126 (1), 145-154. ([link](#))
14. B. P. Johnson, **X. Zhou**, H. Ihara, D. D. Dlott. Observing Hot Spot Formation in Individual Explosive Crystals under Shock Compression. *J. Phys. Chem. A* 2020, 124, 4646-4653. ([link](#))
15. **X. Zhou**, Y.R. Miao, K.S. Suslick, D.D. Dlott. Absorption of shock wave in the crystal films of metal-organic framework. *AIP Conference Proceedings* 2020, 2272 (1), 110018. ([link](#))
16. **X. Zhou**, Y.-R. Miao, K. S. Suslick, D. D. Dlott. Mechanochemistry of Metal-Organic Frameworks Under Pressure and Shock. *Acc. Chem. Res.* 2020, 53, 2806-2815. ([link](#))
This article was selected as the front cover for Acc. Chem. Res. Issue of Dec. 15, 2020.
17. **X. Zhou**, Y.-R. Miao, W. Shaw, K. S. Suslick and D. D. Dlott. Shock Wave Energy Absorption in Metal-Organic Framework. *J. Am. Chem. Soc.* 2019, 141, 2220-2223. ([link](#))
18. J. Hui, S. Pakhira, R. Bhargava, Z. J. Barton, **X. Zhou**, A. J. Chinderle, J. L. Mendoza-Cortes, J. Rodriguez-Lopez. Modulating Electrocatalysis on Graphene Heterostructures: Physically Impermeable Yet Electronically Transparent Electrodes. *ACS Nano* 2018, 12, 2980-2990. ([link](#))
19. **X. Zhou**, Y.-R. Miao, K. Banlusan, W. L. Shaw, A. H. Strachan, K. S. Suslick, D. D. Dlott. Shock wave dissipation by metal organic framework. *AIP Conference Proceedings* 2018, 1979 (1), 150043. ([link](#))
20. J. Hui, **X. Zhou**, R. Bhargava, A. Chinderle, J. Zhang, J. Rodriguez-Lopez. Kinetic Modulation of Outer-Sphere Electron Transfer Reactions on Graphene Electrode with a Sub-Surface Metal Substrate. *Electrochimica Acta* 2016, 211, 1016-1023. ([link](#))
21. X. Zhou, Z.T. Gossage, B.H. Simpson, J. Hui, Z.J. Barton, J. Rodríguez-López. Electrochemical Imaging of Photoanodic Water Oxidation Enhancements on TiO₂ Thin Films Modified by Subsurface Aluminum Nanodimers. *ACS Nano* 2016, 10(10), 9346-9352. ([link](#))
22. **X. Zhou**, J. Wenger, F. N. Viscomi, L. Le Cunff, J. Béal, S. Kochtcheev, X. Yang, G. P. Wiederrecht, G. Colas des Francs, A. S. Bisht, S. Jradi, R. Caputo, H. V. Demir, R. D. Schaller, J. Plain, A. Vial, X. W. Sun, R. Bachelot. Two-Color Single Hybrid Plasmonic Nano-Emitters with Real Time Switchable Dominant Emission Wavelength. *Nano Lett.* 2015, 15, 7458-7466. ([link](#))
23. **X. Zhou**, C. Deeb, S. Kochtcheev, G. P. Wiederrecht, P.-M. Adam, J. Béal, J. Plain, D. Gosztola, J. Grand, N. Félidj, H. Wang, A. Vial, R. Bachelot. Selective Functionalization of the Nanogap of a Plasmonic Dimer. *ACS Photonics* 2015, 2, 121-129. ([link](#))
24. **X. Zhou**, O. Soppera, J. Plain, S. Jradi, X. W. Sun, H. V. Demir, X. Yang, C. Deeb, S. K. Gray, G. P. Wiederrecht, R. Bachelot. Plasmon-Based Photopolymerization: Near-Field

Probing, Advanced Photonic Nanostructures and Nanophotochemistry. *J. Opt.* 2014, 104, 114002. ([link](#))

This publication was highlighted in the Journal of Optics Editorial “Recognizing recent advances in photonics: the JOPT Highlights of 2014” ([link](#))

25. X. Zhou, C. Deeb, R. Vincent, T. Lerond, P.-M. Adam, J. Plain, G. P. Wiederrecht, F. Charra, C. Fiorini, G. Colas des Francs, O. Soppera, R. Bachelot. Polarization-Dependent Fluorescence from Anisotropic Gold/ Polymer Hybrid Nano-Emitter. *Appl. Phys. Lett.* 2014, 104, 023114. ([link](#))
26. Claire Deeb, Xuan Zhou, Jérôme Plain, Gary P Wiederrecht, Renaud Bachelot, Milo Russell, Prashant K Jain. Size dependence of the plasmonic near-field measured via single-nanoparticle photoimaging. *J. Phys. Chem. C* 2013, 117 (20), 10669-10676. ([link](#))
27. Claire Deeb, Xuan Zhou, Ryan Miller, Stephen K Gray, Sylvie Marguet, Jerome Plain, Gary P Wiederrecht, Renaud Bachelot. Mapping the electromagnetic near-field enhancements of gold nanocubes. *J. Phys. Chem. C* 2012, 116 (46), 24734-24740. ([link](#))
28. Claire Deeb, Xuan Zhou, Davy Gérard, Alexandre Bouhelier, Prashant K Jain, Jérôme Plain, Olivier Soppera, Pascal Royer, Renaud Bachelot. Off-resonant optical excitation of gold nanorods: nanoscale imprint of polarization surface charge distribution. *J. Phys. Chem. Lett.* 2011, 2(1) 7-11. ([link](#))

INVITED SEMINARS AND TALKS

1. **Chicago/DOE Alliance Center (CDAC) Webinar**, University of Illinois Chicago. *Plasmonic Hybrid Systems under High Pressures*, (online) 2025
2. **SPIE Optics and Photonics**, *Exploring Plasmonic Materials and Hybrid Systems under Extreme Pressures* (San Diego, CA), 2025
3. **Argonne National Laboratory**, Center for Nanomaterials, Research Seminar: *Plasmonic Materials and Fluorescent Molecules at High Pressures* (Lemont, IL), 2024.
4. **UTSA** Department of Chemical Engineering, Research Seminar: *Material Microstructures under High Pressure and Shock* (San Antonio, TX), 2023.
5. **UTSA** Department of Mechanical Engineering, Research Seminar: *Material Microstructures under High Pressure and Shock* (San Antonio, TX), 2022.
6. **UTSA** Department of Physics and Astronomy, Research Seminar: *Hybrid Plasmonics: From Fundamental Research to Practical Applications* (San Antonio, TX), 2022.
7. **APS March Meeting: Shock Compression of Metal-Organic Frameworks** (Chicago, IL), 2022.
8. **University of Utah**, *Material Microstructures under Shock Compression* (virtual seminar), 2021.
9. **Clarkson University**, *Shock Wave Energy Attenuation in Metal-Organic Framework* (virtual seminar), 2020.
10. **Silk Road International Spring Symposium for Distinguished Young Scholars**. Xi'an Jiaotong University, *Shock Wave Energy Attenuation in Metal-Organic Framework* (Xi'an, China), 2018.
11. **Xi'an University of Technology**, *Shock Wave Energy Attenuation in Metal-Organic Framework* (Xi'an, China), 2018.

12. **University of Electronic Science and Technology of China**, *Shock Wave Energy Attenuation in Metal-Organic Framework* (Chengdu, China), 2018.