

"When possible, please acknowledge the School of Chemical Sciences NMR Lab and Staff contributions in your publications and presentations that rely significantly on NMR data. For details, see "[Acknowledgement and Co-Authorship Guidelines](#)"

NMR Staff Publications List (as of July 5, 2023):

2023 (6)

1. Chen, A., **Zhu, L.**, and **Arai Y.** pH specific phosphorus mineralization affected by dissolved Ca. *Chemosphere*. **2023**, 330, 138761. <https://doi.org/10.1016/j.chemosphere.2023.138761>
2. Ayikpoe, R., **Zhu, L.**, Chen J., Ting, C and **van der Donk, W.A.**, A remarkable enzymatic transformation during the biosynthesis of a new RiPP natural product. *ACS Central Science*. **2023**, 9, 1008-1018. <https://pubs.acs.org/doi/pdf/10.1021/acscentsci.3c00160>
3. Bown, L., Hirota, R., Goettge, M., Cui, J., Krist, D., **Zhu, L.**, Giurgiu, C., **van der Donk, W.A.**, Ju, K. and **Metcalf, W.**, A novel pathway for biosynthesis of the herbicidal phosphonate natural product phosphonothrixin is widespread in actinobacteria. *Journal of Bacteriology*. **2023**, 205(5) e00485-22. <https://journals.asm.org/doi/10.1128/jb.00485-22>
4. Ren, H., Dommaraju, S., Huang, C., Cui, H., Pan, Y., Nesic, M., **Zhu, L.**, **Sarlah, D.**, **Mitchell, D.**, and **Zhao, H.**, Genome mining unveils class of ribosomal peptides with two amino termini. *Nature Communication*. **2023**, 14, 1624. <https://doi.org/10.1038/s41467-023-37287-1>
5. Kretsch, A., Gadgil, M., DiCaprio, A., Barrett, S., Kille, B., Si, Y., **Zhu, L.**, **Mitchell, D.**, Peptidase Activation by a Leader Peptide-Bound RiPP Recognition Element. *Biochemistry*. **2023**, 62, 956-967. <https://pubs.acs.org/doi/pdf/10.1021/acs.biochem.2c00700>
6. Sarkisian, R; **Zhu, L.**; **van der Donk, W.A.**, *Syn*-Elimination of Glutamylated Threonine in Lanthipeptide Biosynthesis. *Chemical Communications* **2023**, <https://doi.org/10.1039/D2CC06345J>

2022 (6):

1. Ayikpoe, R.; Shi, C.; Battiste, A.; Eslami, S.; Ramesh, S.; Simon, M.; Bothwell, I.; Lee, H.; Rice, A.; Ren, H.; Tian, Q.; Harris, L.; Sarkisian, R.; **Zhu, L.**; Frerk, A.; Precord, T.; **van der Donk, W. A.**; **Mitchell, D.**; **Zhao, H.**, A Scalable Platform to Discover Antimicrobials of Ribosomal Origin. *Nature Communications* **2022**, 13, 6135. <https://doi.org/10.1038/s41467-022-33890-w>
2. Pei, Z.; **Zhu, L.**; Sarkisian, R.; **van der Donk, W. A.**; **Nair, S. K.**, Class V Lanthipeptide Cyclase Directs the Biosynthesis of a Stapled Peptide Natural Product. *Journal of the American Chemical Society*. **2022**, 144(38), 17549-17557. <https://pubs.acs.org/doi/pdf/10.1021/jacs.2c06808>
3. Chen, A.; **Zhu, L.**; **Arai, Y.**, Solution NMR investigation of phytic acid adsorption mechanisms at the calcite-water interface. *Science of The Total Environment* **2022**, 840, 156700. <https://doi.org/10.1016/j.scitotenv.2022.156700>
4. Cogan, D. P.; Bhushan, A.; Reyes, R.; **Zhu, L.**; Piel, J.; **Nair, S. K.**, Structure and mechanism for iterative amide *N*-methylation in the biosynthesis of channel-forming peptide cytotoxins. *Proceedings of the National Academy of Sciences* **2022**, 119 (13), e2116578119. <https://doi.org/10.1073/pnas.2116578119>
5. Sun, Y.; Neary, W. J.; Burke, Z. P.; Qian, H.; **Zhu, L.**; **Moore, J. S.**, Mechanically Triggered Carbon Monoxide Release with Turn-On Aggregation-Induced Emission. *Journal of the American Chemical Society* **2022**, 144 (3), 1125-1129. <https://doi.org/10.1021/jacs.1c12108>

- Xiong, T. M.; Garcia, E. S.; Chen, J.; **Zhu, L.**; Alzona, A. J.; **Zimmerman, S. C.**, Enzyme-like catalysis by single chain nanoparticles that use transition metal cofactors. *Chemical Communications* **2022**, 58 (7), 985-988. <https://doi.org/10.1039/D1CC05578J>

2021 (5):

- Xia, Y.; Song, Z.; Tan, Z.; Xue, T.; Wei, S.; **Zhu, L.**; Yang, Y.; Fu, H.; Jiang, Y.; Lin, Y.; Lu, Y.; Ferguson, A. L.; **Cheng, J.**, Accelerated polymerization of N-carboxyanhydrides catalyzed by crown ether. *Nature Communications* **2021**, 12 (1), 732. <https://dx.doi.org/10.1038/s41467-020-20724-w>
- Mosiman, D. S.; **Sutrisno, A.**; Fu, R.; **Mariñas, B. J.**, Internalization of Fluoride in Hydroxyapatite Nanoparticles. *Environmental Science & Technology* **2021**, 55 (4), 2639-2651. <https://doi.org/10.1021/acs.est.0c07398>
- Samuel, D. M.; **Sutrisno, A.**; **Kriven, W. M.**, Relative importance of Al(V) and reinforcement to the flexural strength of geopolymer composites. *Journal of the American Ceramic Society* **2021**, 104 (7), 3452-3460. <https://doi.org/10.1111/jace.17656>
- Daniels, P. N.; Lee, H.; Splain, R. A.; Ting, C. P.; **Zhu, L.**; Zhao, X.; Moore, B. S.; **van der Donk, W. A.**, A biosynthetic pathway to aromatic amines that uses glycyl-tRNA as nitrogen donor. *Nature Chemistry* **2021**. In Press. <https://doi.org/10.1038/s41557-021-00802-2>.
- Zhang, F.; Woods, T. J.; **Zhu, L.**; **Rauchfuss, T. B.**, Inhibition of [FeFe]-hydrogenase by formaldehyde: proposed mechanism and reactivity of FeFe alkyl complexes. *Chemical Science* **2021**, 12 (47), 15673-15681. <https://doi.org/10.1039/D1SC05803G>.

2020 (8):

- Harris, L. A.; Saint-Vincent, P. M. B.; Guo, X.; Hudson, G. A.; DiCaprio, A. J.; **Zhu, L.**; **Mitchell, D. A.**, Reactivity-Based Screening for Citrulline-Containing Natural Products Reveals a Family of Bacterial Peptidyl Arginine Deiminases. *ACS Chemical Biology* **2020**, 15 (12), 3167-3175. <https://dx.doi.org/10.1021/acscchembio.0c00685>
- Liu, S.; Zhang, Z.; Gray, D.; **Zhu, L.**; Abelson, J. R.; **Girolami, G. S.**, Platinum ω -Alkenyl Compounds as Chemical Vapor Deposition Precursors: Synthesis and Characterization of Pt[CH₂CMe₂CH₂CH=CH₂]₂ and the Impact of Ligand Design on the Deposition Process. *Chemistry of Materials* **2020**, 32 (21), 9316-9334. <https://dx.doi.org/10.1021/acs.chemmater.0c03226>
- Vikram, A.; Zahid, A.; Bhargava, S. S.; Jang, H.; **Sutrisno, A.**; Khare, A.; Trefonas, P.; **Shim, M.**; **Kenis, P. J. A.**, Unraveling the Origin of Interfacial Oxidation of InP-Based Quantum Dots: Implications for Bioimaging and Optoelectronics. *ACS Applied Nano Materials* **2020**, 3 (12), 12325-12333. <https://dx.doi.org/10.1021/acsanm.0c02814>
- Bobeica, S. C.; **Zhu, L.**; Acedo, J. Z.; Tang, W.; **van der Donk, W. A.**, Structural determinants of macrocyclization in substrate-controlled lanthipeptide biosynthetic pathways. *Chemical Science* **2020**, 11 (47), 12854-12870. <https://dx.doi.org/10.1039/D0SC01651A>
- Alanagh, H. R.; Akbari, B.; Fathi, P.; Misra, S. K.; **Sutrisno, A.**; **Lam, F.**; **Pan, D.**, Biodegradable MRI Visible Drug Eluting Stent Reinforced by Metal Organic Frameworks. *Advanced Healthcare Materials* **2020**, 9 (14), 2000136. <https://dx.doi.org/10.1002/adhm.202000136>
- Vikram, A.; Zahid, A.; Bhargava, S. S.; Keating, L. P.; **Sutrisno, A.**; Khare, A.; Trefonas, P.; **Shim, M.**; **Kenis, P. J. A.**, Mechanistic Insights into Size-Focused Growth of Indium Phosphide Nanocrystals in the Presence of Trace Water. *Chemistry of Materials* **2020**, 32 (8), 3577-3584. <https://dx.doi.org/10.1021/acs.chemmater.0c00781>

- Rahman, I. R.; Acedo, J. Z.; Liu, X. R.; **Zhu, L.**; Arrington, J.; Gross, M. L.; **van der Donk, W. A.**, Substrate Recognition by the Class II Lanthipeptide Synthetase HalM2. *ACS Chemical Biology* **2020**, *15* (6), 1473-1486. <https://dx.doi.org/10.1021/acscchembio.0c00127>
- Bregante, D. T.; Tan, J. Z.; **Sutrisno, A.**; **Flaherty, D. W.**, Heteroatom substituted zeolite FAU with ultralow Al contents for liquid-phase oxidation catalysis. *Catalysis Science & Technology* **2020**, *10* (3), 635-647. <https://dx.doi.org/10.1039/C9CY01886G>

2019 (7):

- Wang, X.; Song, Z.; Tan, Z.; **Zhu, L.**; Xue, T.; Lv, S.; Fu, Z.; Zheng, X.; Ren, J.; **Cheng, J.**, Facile Synthesis of Helical Multiblock Copolypeptides: Minimal Side Reactions with Accelerated Polymerization of N-Carboxyanhydrides. *ACS Macro Letters* **2019**, *8* (11), 1517-1521. <https://dx.doi.org/10.1021/acsmacrolett.9b00784>
- Song, Z.; Fu, H.; Baumgartner, R.; **Zhu, L.**; Shih, K.-C.; Xia, Y.; Zheng, X.; Yin, L.; Chipot, C.; Lin, Y.; **Cheng, J.**, Enzyme-mimetic self-catalyzed polymerization of polypeptide helices. *Nature Communications* **2019**, *10* (1), 5470. <https://dx.doi.org/10.1038/s41467-019-13502-w>
- Sankar, K.; **Sutrisno, A.**; **Kriven, W. M.**, Slag-fly ash and slag-metakaolin binders: Part II—Properties of precursors and NMR study of poorly ordered phases. *Journal of the American Ceramic Society* **2019**, *102* (6), 3204-3227. <https://dx.doi.org/10.1111/jace.16224>
- Pogue, E. A.; **Sutrisno, A.**; Johnson, N. E.; Goetter, M. B.; Jiang, Z.; Johnson, N. E.; **Shoemaker, D. P.**; **Rockett, A. A.**, Phase stability and structural comparison of phases in the Cu-Zn-Sn-S system using solid-state NMR. *Solar Energy Materials and Solar Cells* **2019**, *190*, 37-48. <https://dx.doi.org/10.1016/j.solmat.2018.10.007>
- Muraglia, K. A.; Chorghade, R. S.; Kim, B. R.; Tang, X. X.; Shah, V. S.; Grillo, A. S.; Daniels, P. N.; Cioffi, A. G.; Karp, P. H.; **Zhu, L.**; Welsh, M. J.; **Burke, M. D.**, Small-molecule ion channels increase host defences in cystic fibrosis airway epithelia. *Nature* **2019**, *567* (7748), 405-408. <https://dx.doi.org/10.1038/s41586-019-1018-5>
- Muhammad, S. R.; Nugent, J. W.; Tokmic, K.; **Zhu, L.**; Mahmoud, J.; **Fout, A. R.**, Electronic Ligand Modifications on Cobalt Complexes and Their Application toward the Semi-Hydrogenation of Alkynes and Para-Hydrogenation of Alkenes. *Organometallics* **2019**, *38* (16), 3132-3138. <https://dx.doi.org/10.1021/acs.organomet.9b00337>
- Liu, S.; Gray, D.; **Zhu, L.**; **Girolami, G. S.**, Lithium–Olefin π -Complexes and the Mechanism of Carbolithiation: Synthesis, Solution Behavior, and Crystal Structure of (2,2-Dimethylpent-4-en-1-yl)lithium. *Organometallics* **2019**, *38* (9), 2199-2210. <https://dx.doi.org/10.1021/acs.organomet.9b00169>

2018 (8):

- Weir, W. B.; Fred, L. Y.; Pike, M.; Rubakhin, S. S.; Ludwig, T. J.; Shar, A. M.; **Zhu, L.**; Frederick, A.; Uzoaru, I.; Wang, L.; **Sweedler, J. V.**, Expired Epinephrine Maintains Chemical Concentration and Sterility. *Prehospital Emergency Care* **2018**, *22* (4), 414-418. <https://dx.doi.org/10.1080/10903127.2017.1402109>
- Tokmic, K.; Greer, R. B.; **Zhu, L.**; **Fout, A. R.**, ^{13}C NMR Signal Enhancement Using Parahydrogen-Induced Polarization Mediated by a Cobalt Hydrogenation Catalyst. *Journal of the American Chemical Society* **2018**, *140* (44), 14844-14850. <https://dx.doi.org/10.1021/jacs.8b08614>
- Pogue, E. A.; Paris, M.; **Sutrisno, A.**; Lafond, A.; Johnson, N.; **Shoemaker, D. P.**; **Rockett, A. A.**, Identifying Short-Range Disorder in Crystalline Bulk Cu_2SnS_3 Phases: A Solid-State Nuclear Magnetic Resonance

Spectroscopic Investigation. *Chemistry of Materials* **2018**, *30* (19), 6624-6635.
<https://dx.doi.org/10.1021/acs.chemmater.8b01182>

4. Chen, X.; **Sutrisno, A.**; **Struble, L. J.**, Effects of calcium on setting mechanism of metakaolin-based geopolymer. *Journal of the American Ceramic Society* **2018**, *101* (2), 957-968. <https://dx.doi.org/10.1111/jace.15249>
5. Bakir, M.; Meyer, J. L.; **Sutrisno, A.**; **Economy, J.**; **Jasiuk, I.**, Glass transition broadening via nanofiller-contiguous polymer network in aromatic thermosetting copolyester nanocomposites. *Journal of Polymer Science Part B: Polymer Physics* **2018**, *56* (24), 1595-1603. <https://dx.doi.org/10.1002/polb.24747>
6. Bakir, M.; Meyer, J. L.; **Sutrisno, A.**; **Economy, J.**; **Jasiuk, I.**, Aromatic thermosetting copolyester bionanocomposites as reconfigurable bone substitute materials: Interfacial interactions between reinforcement particles and polymer network. *Scientific Reports* **2018**, *8* (1), 14869. <https://dx.doi.org/10.1038/s41598-018-33131-5>
7. Bakir, M.; Meyer, J. L.; **Sutrisno, A.**; **Economy, J.**; **Jasiuk, I.**, Nanofiller-conjugated percolating conductive network modified polymerization reaction characteristics of aromatic thermosetting copolyester resin. *RSC Advances* **2018**, *8* (9), 4946-4954. <https://dx.doi.org/10.1039/C7RA12506B>
8. Bakir, M.; Elhebeary, M.; Meyer, J. L.; **Sutrisno, A.**; **Economy, J.**; **Jasiuk, I.**, Interfacial liquid crystalline mesophase domain on carbon nanofillers in aromatic thermosetting copolyester matrix. *Journal of Applied Polymer Science* **2018**, *135* (32), 46584. <https://dx.doi.org/10.1002/app.46584>

2017 (7):

1. Ye, Z.; de la Rama, L. P.; Efremov, M. Y.; **Sutrisno, A.**; **Allen, L. H.**, Critical Size for Bulk-to-Discrete Transition in 2D Aliphatic Layers: Abrupt Size Effect Observed via Calorimetry and Solid-State ¹³C NMR. *The Journal of Physical Chemistry C* **2017**, *121* (25), 13916-13929. <https://dx.doi.org/10.1021/acs.jpcc.7b03693>
2. Ye, Q.; **Zhu, L.**; Wang, X.; **Lu, Y.**, On the mechanisms of CO₂ absorption and desorption with phase transitional solvents. *International Journal of Greenhouse Gas Control* **2017**, *56*, 278-288. <https://dx.doi.org/10.1016/j.ijggc.2016.11.027>
3. Shin, M.; Wu, H.-L.; Narayanan, B.; See, K. A.; Assary, R. S.; **Zhu, L.**; Haasch, R. T.; Zhang, S.; Zhang, Z.; Curtiss, L. A.; **Gewirth, A. A.**, Effect of the Hydrofluoroether Cosolvent Structure in Acetonitrile-Based Solvate Electrolytes on the Li⁺ Solvation Structure and Li-S Battery Performance. *ACS Applied Materials & Interfaces* **2017**, *9* (45), 39357-39370. <https://dx.doi.org/10.1021/acsami.7b11566>
4. Pogue, E. A.; **Sutrisno, A.**; Johnson, N. E.; **Shoemaker, D. P.**; **Rockett, A. A.**, Oxygen-Induced Ordering in Bulk Polycrystalline Cu₂ZnSnS₄ by Sn Removal. *Inorganic Chemistry* **2017**, *56* (20), 12328-12336. <https://dx.doi.org/10.1021/acs.inorgchem.7b01777>
5. Misra, S. K.; Ostadhosseini, F.; Babu, R.; Kus, J.; Tankasala, D.; **Sutrisno, A.**; Walsh, K. A.; Bromfield, C. R.; **Pan, D.**, 3D-Printed Multidrug-Eluting Stent from Graphene-Nanoplatelet-Doped Biodegradable Polymer Composite. *Advanced Healthcare Materials* **2017**, *6* (11), 1700008. <https://dx.doi.org/10.1002/adhm.201700008>
6. Chen, X.; **Sutrisno, A.**; **Zhu, L.**; **Struble, L. J.**, Setting and nanostructural evolution of metakaolin geopolymer. *Journal of the American Ceramic Society* **2017**, *100* (5), 2285-2295. <https://dx.doi.org/10.1111/jace.14641>
7. Bakir, M.; Meyer, J. L.; Hussainova, I.; **Sutrisno, A.**; **Economy, J.**; **Jasiuk, I.**, Periodic Functionalization of Graphene-Layered Alumina Nanofibers with Aromatic Thermosetting Copolyester via Epitaxial Step-Growth Polymerization. *Macromolecular Chemistry and Physics* **2017**, *218* (24), 1700338.

2016 (6):

1. Wu, J.; Ma, S.; Sun, J.; Gold, J. I.; Tiwary, C.; Kim, B.; **Zhu, L.**; Chopra, N.; Odeh, I. N.; Vajtai, R.; Yu, A. Z.; Luo, R.; Lou, J.; Ding, G.; **Kenis, P. J. A.**; Ajayan, P. M., A metal-free electrocatalyst for carbon dioxide reduction to multi- carbon hydrocarbons and oxygenates. *Nature Communications* **2016**, *7* (1), 13869. <https://dx.doi.org/10.1038/ncomms13869>
2. Tokmic, K.; Markus, C. R.; **Zhu, L.**; **Fout, A. R.**, Well-Defined Cobalt(I) Dihydrogen Catalyst: Experimental Evidence for a Co(I)/Co(III) Redox Process in Olefin Hydrogenation. *Journal of the American Chemical Society* **2016**, *138* (36), 11907-11913. <https://dx.doi.org/10.1021/jacs.6b07066>
3. See, K. A.; Chapman, K. W.; **Zhu, L.**; Wiaderek, K. M.; Borkiewicz, O. J.; Barile, C. J.; Chupas, P. J.; **Gewirth, A. A.**, The Interplay of Al and Mg Speciation in Advanced Mg Battery Electrolyte Solutions. *Journal of the American Chemical Society* **2016**, *138* (1), 328-337. <https://dx.doi.org/10.1021/jacs.5b10987>
4. Ibrahim, A. D.; Entsminger, S. W.; **Zhu, L.**; **Fout, A. R.**, A Highly Chemoselective Cobalt Catalyst for the Hydrosilylation of Alkenes using Tertiary Silanes and Hydrosiloxanes. *ACS Catalysis* **2016**, *6* (6), 3589-3593. <https://dx.doi.org/10.1021/acscatal.6b01091>
5. Defnet, E.; **Zhu, L.**; **Schmidt, S. J.**, Characterization of sodium mobility, binding, and apparent viscosity in full-fat and reduced-fat model emulsion systems. *Journal of Food Measurement and Characterization* **2016**, *10* (3), 444- 452. <https://dx.doi.org/10.1007/s11694-016-9323-2>
6. Chénard, E.; **Sutrisno, A.**; **Zhu, L.**; Assary, R. S.; Kowalski, J. A.; Barton, J. L.; Bertke, J. A.; Gray, D. L.; Brushett, F. R.; Curtiss, L. A.; **Moore, J. S.**, Synthesis of Pyridine– and Pyrazine–BF₃ Complexes and Their Characterization in Solution and Solid State. *The Journal of Physical Chemistry C* **2016**, *120* (16), 8461-8471. <https://dx.doi.org/10.1021/acs.jpcc.6b00858>

2015 (2):

1. Metelev, M.; Tietz, Jonathan I.; Melby, Joel O.; Blair, Patricia M.; **Zhu, L.**; Livnat, I.; Severinov, K.; **Mitchell, Douglas A.**, Structure, Bioactivity, and Resistance Mechanism of Streptomycin, an Unusual Lasso Peptide from an Understudied Halophilic Actinomycete. *Chemistry & Biology* **2015**, *22* (2), 241-250. <https://dx.doi.org/10.1016/j.chembiol.2014.11.017>
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2014 (4):

1. Wang, W.; **Rauchfuss, T. B.**; **Zhu, L.**; Zampella, G., New Reactions of Terminal Hydrides on a Diiron Dithiolate. *Journal of the American Chemical Society* **2014**, *136* (15), 5773-5782. <https://dx.doi.org/10.1021/ja501366j>
2. Klonowski, P.; Goloboy, J. C.; Uribe-Romo, F. J.; Sun, F.; **Zhu, L.**; Gándara, F.; Wills, C.; Errington, R. J.; Yaghi, O. M.; **Klemperer, W. G.**, Synthesis and Characterization of the Platinum-Substituted Keggin Anion α -H₂SiPtW₁₁O₄₀–. *Inorganic Chemistry* **2014**, *53* (24), 13239-13246. <https://dx.doi.org/10.1021/ic502617k>
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2013 (1):

1. Huff, L. A.; Rapp, J. L.; **Zhu, L.**; **Gewirth, A. A.**, Identifying lithium–air battery discharge products through 6Li solid-state MAS and 1H–13C solution NMR spectroscopy. *Journal of Power Sources* **2013**, 235, 87-94. <https://dx.doi.org/10.1016/j.jpowsour.2013.01.158>