Vitalie Stavila
Publication list

1. Sun, L, B Liao, D Sheberla, D Kraemer, J Zhou, EA Stach, D Zakharov, V Stavila, AA Talin, Y Ge, MD Allendorf, G Chen, F Léonard, M Dinca. (2017). Joule, Volume 1, Issue 1, p168-177, 6 September 2017.
2. A. M. Ullman, J. W. Brown, M. E. Foster, F. Léonard, K. Leong, V. Stavila, M. D. Allendorf. Inorganic Chemistry 55 (15), 7233 (2016)
   "Transforming MOFs for Energy Applications Using the Guest@ MOF Concept"
3. K.J. Erickson, F. Léonard, V. Stavila, M.E. Foster, C.D. Spataru, R.E. Jones, B.M. Foley, P.E. Hopkins, M.D. Allendorf, and A.A. Talin. *Advanced Materials*, 27, 3453-3459.
   "Thin Film Thermoelectric Metal-Organic Framework with High Seebeck Coefficient and Low Thermal Conductivity"
4. M.D. Allendorf, M.E. Foster, F. Léonard, V. Stavila, P.L. Feng, F.P. Doty, K. Leong, E.Y. Ma, S.R. Johnston, A.A. Talin. *J. Phys. Chem. Lett.,* **2015**, 6 (7), pp 1182-1195.
   "Guest-Induced Emergent Properties in Metal−Organic Frameworks"
5. A.A. Talin, A. Centrone, A.C. Ford, M.E. Foster, V. Stavila, P. Haney, R.A. Kinney, V. Szalai, F. El Gabaly, H.P. Yoon, F. Leonard, M.D. Allendorf, *Science,* **2014**, *343,* 66–69.
   "Tunable Electrical Conductivity in Metal-Organic Framework Thin-Film Devices"
6. N. Verdal, J.-H. Her, V. Stavila, A.V. Soloninin, O.A. Babanova, A.V. Skripov, T.J. Udovic, J.J. Rush, *Journal of Solid State Chemistry,* **2014**, *212,* 81-91.
   "Complex high-temperature phase transitions in $Li_2B_{12}H_{12}$ and $Na_2B_{12}H_{12}$"
7. T.J. Udovic, M. Matsuo, A. Unemoto, N. Verdal, V. Stavila, A.V. Skripov, J.J. Rush, H. Takamure, S. Orimo, *Chemical Communications,* **2014**, 50, 3750-3752.
   "Sodium superionic conduction in $Na_2B_{12}H_{12}$"
8. N. Sun, P. Ramakrishnan, A. Socha, K.M. Holtman, D.J. Yelle, T. Morgan, V. Stavila, J. Pelton, H. Blanch, B.A. Simmons, A. George, *Green Chemistry* **2014**, *16,* 2546-2557.
   "Understanding pretreatment efficacy of four cholinium and imidazolium ionic liquids by chemistry and computation"
9. N. Sathitsuksanoh, K.M. Holtman, D.J. Yelle, T. Morgan, V. Stavila, J. Pelton, H. Blanch, B.A. Simmons, A. George, *Green Chemistry* **2014**, *16,* 1236-1247.
   "Lignin fate and characterization during ionic liquid biomass pretreatment for renewable chemicals and fuels production"
10. V. Stavila, D.B. Robinson, Hekmaty M.A, R. Nishimoto, D.L. Medlin, S. Zhu, T.M. Tritt, P.A. Sharma, *ACS Applied Materials & Interfaces*, **2013**, *5,* 6678–6686.
    "Wet-chemical synthesis and consolidation of stoichiometric bismuth telluride nanoparticles for improving the thermoelectric figure-of-merit"
11. X. Liu, E.H. Majzoub, V. Stavila, R. Bhakta, M.D. Allendorf, M. Conradi, N. Verdal, T. Udovic, *Journal of Materials Chemistry A*, **2013**, *1,* 9935-9941.
    "Probing the unusual anion mobility of LiBH4 confined in highly ordered nanoporous carbon frameworks via solid state NMR and quasielastic neutron scattering"

12. I. Ellern, A. Vankatasubramanian, J.H. Lee, P.J. Hesketh, V. Stavila, A. Robinson, M.D. Allendorf, *Micro and Nano Letters,* **2013**, *8,* 766–769.
"HKUST-1 coated piezoresistive microcantilever array for volatile organic compound sensing"

13. A.V. Skripov, O.A. Babanova, A.V. Soloninin, V. Stavila, N. Verdal, T.J. Udovic, J.J. Rush, *Journal of Physical Chemistry C*, **2013**, *117,* 25961-25968.
"Nuclear magnetic resonance study of atomic motion in $A_2B_{12}H_{12}$ (A = Na, K, Rb, Cs): Anion reorientations and Na^+ mobility"

14. P.J. Cappillino, K.M. Hattar, B.G. Clark, V. Stavila, J. Sugar, D.B. Robinson, *Journal of Materials Chemistry A*, **2013**, *1,* 602-610.
"Synthesis of mesoporous palladium with tunable porosity and demonstration of its thermal stability by in situ heating and environmental transmission electron microscopy"

15. R.L. Davidovich, D.V. Marinin, V. Stavila, K.H. Whitmire, *Coordination Chemistry Reviews*, **2013**, *257*, 3074–3088.
"Stereochemistry of fluoride and mixed-fluoride complexes of zirconium and hafnium"

16. A. Eichorst, P. Varanasi, V. Stavila, M. Zemla, M. Auer, S. Singh, B.A. Simmons, *Environmental Microbiology* **2013**, *15,* 2573-2587.
"Community dynamics of cellulose-adapted thermophilic bacterial consortia"

17. A.M. Socha, S.P. Plummer, V. Stavila, B.A. Simmons, S. Singh, *Biotechnology for Biofuels*, **2013**, *6,* 61, DOI: 10.1186/1754-6834-6-61.
"Comparison of sugar content for ionic liquid pretreated Douglas-fir woodchips and forestry residues"

18. A.G. Cruz, C. Scullin, C. Mu, G. Cheng, V. Stavila, P. Varanasi, D.Y. Xu, J. Mentel, Y.D. Chuang, B.A. Simmons, S. Singh, *Biotechnology for Biofuels*, **2013**, *6,* 52, DOI: 10.1186/1754-6834-6-52.
"Impact of high biomass loading on ionic liquid pretreatment"

19. N. Sun, H. Liu, N. Sathitsuksanoh, A. George, V. Stavila, B.A. Simmons, S. Singh, *Biotechnology for Biofuels*, **2013**, *6,* 39, DOI: 10.1186/1754-6834-6-39.
"Production and extraction of sugars from switchgrass hydrolyzed in ionic liquids"

20. J.A. Perez-Pimienta, M.G. Lopez-Ortega, P. Varanasi, C. Scullin, G. Cheng, V. Stavila, B.A. Simmons, S. Singh, *Bioresource Technology*, **2013**, *127,* 18-24.
"Comparison of the impact of ionic liquid pretreatment on recalcitrance of agave bagasse and switchgrass"

21. V. Stavila, R.K. Bhakta, T.M. Alam, E.H. Majzoub, M.D. Allendorf, *ACS Nano,* **2012**, *6,* 9807-9817.
"Reversible Hydrogen Storage by NaAlH4 Confined within a Titanium-Functionalyzed MOF-74(Mg) Nanoreactor"

22. G. Cheng, P. Varanasi, R. Arora, C. Scullin, V. Stavila, B.A. Simmons, S. Singh, *Journal of Physical Chemistry B*, **2012**, *116,* 10049-10054.
"Impact of ionic liquid pretreatment conditions on cellulose crystalline structure using 1-ethyl-3-methylimidazolium acetate"

23. H. Liu, G. Cheng, M. Kent, P. Varanasi, V. Stavila, B.A. Simmons, S. Singh, *Journal of Physical Chemistry B,* **2012**, *116,* 8131–8138.
"Simulations reveal conformational changes of methylhydroxyl groups during dissolution of cellulose I_{beta} in ionic liquid 1-ehtyl-3-methyl-imidazolinium acetate"

24. V. Stavila, J. Volponi, A.M. Katzenmeyer, M.C. Dixon, M.D. Allendorf, *Chemical Science,* **2012**, *3,* 1531–1540.
"Kinetics and Mechanism of Metal-Organic Thin Film Growth: Systematic Investigation of HKUST-1 Deposition on QCM Electrodes"

25. A.L. Robinson, V. Stavila, T.R. Zeitler, M.I. White, S.M. Thornberg, J.A. Greathouse, M.D. Allendorf, *Analytical Chemistry,* **2012**, *84*, 7043-7051.
"Ultrasensitive Humidity Detection Using Metal-Organic Framework-Coated Microsensors"

26. A. Vankatasubramanian, J.H. Lee, V. Stavila, A. Robinson, M.D. Allendorf, P.J. Hesketh, *Sensors and Actuators B: Chemical,* **2012**, *168,* 256–262.
"MOF@MEMS: Design Optimization for High Sensitivity Chemical Detection"

27. R.K. Bhakta, S. Maharrey, V. Stavila, E.H. Majzoub, M.D. Allendorf, *Physical Chemistry Chemical Physics,* **2012**, *14,* 8160–8169.
"Thermodynamics and Kinetics of $NaAlH_4$ Nanocluster Decomposition"

28. D. Banga, J.L. Lensch-Falk, D.L. Medlin, V. Stavila, N.Y.C. Yang, D.B. Robinson, P.A. Sharma, *Crystal Growth & Design,* **2012**, *12*, 1347–1353.
"Periodic Modulation of Sb Stoichiometry in $Bi_2Te_3/Bi_{2-x}Sb_xTe_3$ Multilayers Using Pulsed Electrodeposition"

29. J.L. Lensch-Falk, D. Banga, P.E. Hopkins, D.B. Robinson, V. Stavila, P.A. Sharma, D.L. Medlin, *Thin Solid Films,* **2012**, *520*, 6109–6117.
"Electrodeposition and Characterization of Nano-Crystalline Antimony Telluride Thin Films"

30. P.J. Cappillino, J.D. Sugar, M.A. Hekmaty, B.W. Jacobs, V. Stavila, P.G. Kotula, J.M. Chames, N.Y. Yang, D.B. Robinson, *Journal of Materials Chemistry*, **2012**, *22*, 14013–14022.
"Nanoporous Pd Alloys with Compositionally Tunable Hydrogen Storage Properties Prepared by Nanoparticle Consolidation"

31. J.H. Her, H. Wu, N. Verdal, W. Zhou, V. Stavila, T.J. Udovic, *Journal of Alloys and Compounds,* **2012**, *514,* 71–75.
"Structures of Strontium and Barium Dodecahydro-*closo*-dodecaborates"

32. G. Papa, P. Varanasi, L. Sun, G. Cheng, V. Stavila, B. Holmes, B.A. Simmons, F. Adani, S. Singh, *Bioresource Technology,* **2012**, *117*, 352–359.
"Exploring the Effect of Different Plant Lignin Content and Composition on Ionic Liquid Pretreatment Efficiency and Enzymatic Sacharification of Eucalyptus Globulus L. Mutants"

33. W. Luo, V. Stavila, L.E. Klebanoff, *International Journal of Hydrogen Energy,* **2012**, *37,* 6646–6652.
"New Insights into the Mechanism of Activation and Hydrogen Absorption of $(2LiNH_2\text{-}MgH_2)$"

34. M.D. Allendorf, A. Schwartzberg, V. Stavila, A.A. Talin, *Chemistry – A European Journal,* **2011**, *17,* 11372–11288.
"A Roadmap to Implementing Metal-Organic Frameworks in Electronic Devices: Challenges and Critical Directions"

35. M.P. Klein, B.W. Jacobs, M.D. Ong, S.J. Fares, D.B. Robinson, V. Stavila, G.J. Wagner, I. Arslan, *Journal of the American Chemical Society*, **2011**, *133*, 9144–9147.
"Three-Dimensional Pore Evolution of Nanoporous Metal Particles for Energy Storage"

36. N. Verdal, H. Wu, T.J. Udovic, V. Stavila, W. Zhou, J.J. Rush, *Journal of Solid State Chemistry*, **2011**, *184*, 3110–3116.
"Evidence of a Transition to Reorientational Disorder in the Cubic Alkali-Metal Dodecahydro-*closo*-dodecaborates"

37. N. Verdal, T.J. Udovic, J.J. Rush, V. Stavila, H. Wu, W. Zhou, T. Jenkins, *Journal of Chemical Physics*, **2011**, *135*, 094501.
"Low-Temperature Tunneling and Rotational Dynamics of the Ammonium Cations in $(NH_4)_2B_{12}H_{12}$"

38. D.T. Shane, L.H. Rayhel, Z.G. Huang, J.C. Zhao, X. Tang, V. Stavila, M.S. Conradi, *Journal of Physical Chemistry C,* **2011**, *115,* 3172–3177.
"Comprehensive NMR Study of Magnesium Borohydrdie"

39. N. Verdal, W. Zhou, V. Stavila, J.-H. Her, M. Yousufuddin, T. Yildirim, T.J. Udovic, *Journal of Alloys and Compounds*, **2011**, *509*, S694–S697.
"Alkali and Alkali-Earth Metal Dodecahydro-*Closo*-Dodecaborates: Probing Structural Variations *via* Neutron Vibrational Spectroscopy"

40. V. Stavila, J.-H. Her, W. Zhou, S.-J. Hwang, Ch. Kim, L.-A. M. Ottley, T.J. Udovic, *Journal of Solid State Chemistry,* **2010**, *183,* 1133–1140.
"Calcium Dodecahydro-*closo*-dodecaborate: Synthesis, Structure and Relevance to Hydrogen Storage"

41. V. Stavila, I. Bulimestru, A. Gulea, A.C. Colson, K.H. Whitmire., *Acta Crystallographica, Section C,* **2011**, *C67*, m65-m68.
"Hexaaquacobalt(II) and Hexaaquanickel(II) *bis*(μ-pyridine-2,6-dicarboxylato)*bis*[(pyridine-2,6-dicarboxylato) bismuthate(III)] Dihydrate"

42. V. Stavila, K.H. Whitmire., *Acta Crystallographica, Section E,* **2010**, *E66*, m1547-m1548.
"(N,N-Dimethylformamide-*κO*)bis(3-hydroxypicolinato-κ^2N,O^2)phenylbismuth(III)"

43. T. Mandal, G. Piburn, V. Stavila, I. Rusakova, T. Ould-Ely, A.C. Colson, K.H. Whitmire, *Chemistry of Materials*, **2011**, *23*, 4158–4169.
"New Mixed Ligand Single-Source Precursors for PbS Nanoparticles and Their Solvothermal Decomposition to Anisotropic Nano- and Microstructures"

44. R. Newhouse, V. Stavila, S. Hwang, J. Zhang, *Journal of Physical Chemistry C*, **2010**, *114*, 5224–5232.
"Reversibility and Improved Hydrogen Release of Magnesium Borohydride"

45. W. Luo, D. Cowgill, K. Stewart, V. Stavila, *Journal of Alloys and Compounds,* **2010**, *497,* L17–L20.
"High Capacity Hydrogen Generation on Demand from (NH_3 + $LiAlH_4$)"

46. K.C. Kim, M.D. Allendorf, V. Stavila, D.S. Sholl, *Physical Chemistry Chemical Physics,* **2010**, *12*, 9918–9926.
"Predicting Impurity Gases and Phases during Hydrogen Evolution from Complex Metal Hydrides Using Free Energy Minimization Enabled by First-Principles Calculations"

47. R.L. Davidovich, V. Stavila, K.H. Whitmire, *Coordination Chemistry Reviews*, **2010**, *250*, 2782–2810.
"Stereochemistry of Lead(II) Complexes Containing Sulfur and Selenium Donor Atom Ligands"

48. N. Verdal, W. Zhou, V. Stavila, J.-H. Her, M. Yousufuddin, T. Yildirim, T.J. Udovic, *Journal of Alloys and Compounds*, **2010**, DOI:10.1016/j.jallcom.2010.08.024.
"Alkali and Alkali-Earth Metal Dodecahydro-*Closo*-Dodecaborates: Probing Structural Variations *via* Neutron Vibrational Spectroscopy",

49. V. Stavila, I. Rusakova, K.H. Whitmire, *Chemistry of Materials*, **2009**, *21*, 5456–5465.
"Synthesis of Bi_2S_3 Nanostructures from Bismuth(III) Thiourea and Thiosemicarbazide Complexes"

50. T. Mandal, V. Stavila, I. Rusakova, S. Ghosh, K.H. Whitmire, *Chemistry of Materials*, **2009**, *21*, 5617–5626.
"Molecular Precursors for CdS Nanoparticles: Synthesis and Characterization of Carboxylate-Thiourea or –Thiosemicarbazide Cadmium Complexes and Their Decomposition"

51. J.-H. Her, W. Zhou, V. Stavila, C.M. Brown, T.J. Udovic, *Journal of Physical Chemistry*, C, **2009**, *113*, 11187–11189.
"The Crystal Structure of $Na_2B_{12}H_{12}$ and the Role of Cation Size on the Structural Behavior of the Alkali-Metal Dodecahydro-*closo*-dodecaborates"

52. R.L. Davidovich, V. Stavila, D.V. Marinin, E.I. Voit, K.H. Whitmire, *Coordination Chemistry Reviews*, **2009**, *253*, 1316–1352.
"Stereochemistry of Lead(II) Complexes with Oxygen Donor Ligands"

53. V. Stavila, E. Dikarev, *Journal of Organometallic Chemistry*, **2009**, *694*, 2956–2964.
"Phenyl Bismuth *Beta*-Diketonate Complexes: Synthesis and Structural Characterization"

54. V. Stavila, J.H. Thurston, K.H. Whitmire, *Inorganic Chemistry*, **2009**, *48*, 6945–6951.
"Selective Arylation Reactions of Bismuth-Transition Metal Salicylate Complexes"

55. V. Stavila, Y. Stortz, C. Franc, D. Pitrat, P. Maurin, J. Hasserodt, *European Journal of Inorganic Chemistry*, **2008**, 3943–3947.
"Effective Repression of the Fragmentation of a Hexadentate Ligand Bearing an Auto-Immolable Pendant Arm by Iron Coordination"

56. V. Stavila, M. Allali, L. Canaple, Y. Stortz, C. Franc, P. Maurin, O. Beuf, O. Dufay, J. Samarut, M. Janier, J. Hasserodt, *New Journal of Chemistry*, **2008,** *32,* 428–435.
"Significant Relaxivity Gap Between a Low-Spin and a High-Spin Iron(II) Complex of Structural Similarity: An Attractive Off-On System for the Potential Design of Responsive MRI Probes"

57. A. Gulea, D. Poirier, J. Roy, V. Stavila, I. Bulimestru, V. Tapcov, M. Birca, L. Popovschi, *Journal of Enzyme Inhibition and Medicinal Chemistry*, **2008**, *23*, 806–818.
"In vitro antileukemia, antibacterial and antifungal activities of some 3d metal complexes: Chemical synthesis and structure – activity relationships"

58. P. Maurin, V. Stavila, M. Allali, L. Canaple, O. Beuf, Y. Stortz, J. Samarut, M. Janier, J. Hasserodt, *Bulletin du Cancer*, **2008,** *95,* S24–S25.
"Studies regarding the adjustment of bioactivatable contrast agents with an iron base for *in vivo* MRI"

59. V. Stavila, J.H. Thurston, D. Prieto-Centurion, K.H. Whitmire, *Organometallics,* **2007**, *26*, 6864–6866.
"A new methodology for synthesis of aryl bismuth compounds: Arylation of bismuth(III) carboxylates by sodium tetraarylborate salts*".*

60. V. Stavila, J.C. Fettinger, K.H. Whitmire, *Organometallics,* **2007**, *26*, 3321–3328.
"Synthesis and characterization of new phenylbis(salicylato)-bismuth(III) complexes"

61. V. Stavila, R.L. Davidovich, A. Gulea, K.W. Whitmire, *Coordination Chemistry Reviews*, **2006,** *250,* 2782–2810.
"Bismuth(III) complexes with aminopolycarboxylate and polyaminopolycarboxylate ligands: Chemistry and structure"

62. I.G. Filippova, Yu.A. Simonov, M. Gdanets, V. Stavila, *Journal of Structural Chemistry*, **2005,** *46*, 1095–1098.
"Crystal structure of *tris*(1,10-phenanthroline) iron(II) dinitrate dihydrate"

63. V. Stavila, A. Gulea, S. Shova, Yu.A. Simonov, P. Petrenko, J. Lipkowski, F. Riblet, L. Helm, *Inorganica Chimica Acta*, **2004**, *357*. 2060–2068.
"An unexpected influence of the nature of the amine on the crystal structure of some Co(III)-Bi(III) heterometallic complexes"

64. V. Stavila, A. Gulea, N. Popa, S. Shova, A. Merbach, Yu.A. Simonov, J. Lipkowski, *Inorganic Chemistry Communications*, **2004**, *7*, 634–637.
"A novel 3D Nd(III)-Bi(III) coordination polymer generated from EDTA ligand"

65. P. A. Petrenko, M. Gdaniec, Yu. A. Simonov, V. Stavila, A. Gulea. *Russian Journal of Coordination Chemistry*, **2004**, *30*, 813–817.
"Crystal Structure of Monoprotonated Ni(II) Nitrilotriacetate Tetrahydrate"

66. V. Stavila, J.-P. Wignacourt, E. Holt, P. Conflant, M. Drache, A. Gulea. . *Inorganica Chimica Acta*, **2003**, *353*, 43–50.
"Synthesis and Structure of Some Co(III)-Bi(III) Complexes: $[Co(NH_3)_5NCS][Bi(Edta)]_2{\cdot}4H_2O$, $[Co(NH_3)_4(NO_2)_2][Bi(Edta)(H_2O)]{\cdot}2H_2O$, and $[Co(NH_3)_4CO_3](BiEdta){\cdot}3H_2O$"

67. R. Bachman, K. Whitmire, J. Thurston, A. Gulea, O. Stavila, V. Stavila. *Inorganica Chimica Acta*, **2003**, *346*, 249–255.
"Bismuth Ladder Polymers: Structural and Thermal Studies of $[Bi(OCH_2CH_2)_3N]_n$ and $[(Bi_xTb_{1-x}(O_2C_2H_2)_3N){\cdot}2H_2O]_n$".