

Vladislav Klepov

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Research Interests

My research investigates relationships between the composition, structure, and physical properties in a broad range of solid state inorganic compounds to develop a rational basis for functional materials design. Device fabrication is an essential part of my work to test the properties of new materials and their potential for commercialization.

Professional Appointments

Assistant Professor	University of Georgia, Department of Chemistry August 2022 – Current
Scientist (Crystal Growth and Device Fabrication)	<i>Actinia Inc.</i> , Next Generation Radiation Detectors Startup Company, June 2021 – July 2022
Resident Associate	Argonne National Laboratory, Materials Science Division April 2021 – May 2022
Postdoctoral Research Fellow (Advisor: <i>Professor Mercouri G. Kanatzidis</i>)	Northwestern University, January 2021 – July 2022
Postdoctoral Research Fellow (Advisor: <i>Professor Hans-Conrad zur Loye</i>)	University of South Carolina, October 2017 – December 2020
Senior Lecturer	Samara National Research University, Samara, Russia December 2015 – September 2017

Education

Ph.D. in Inorganic Chemistry Nizhny Novgorod State University and Samara State University, Russia Advisor: Professor Larisa B. Serezhkina	2010 – 2015
B.S. cum laude in Chemistry Samara State University, Samara, Russia	2005 – 2010

Scientific Publications

* – corresponding author

- 102.* Valueva, A.D.; Novikov S. A.; Zhang, Y.; Tisdale, H. B.; Maksimova, A. A.; Parker, M.; Reukov, V.; and **Klepov V. V.*** Noncentrosymmetric Bismuth Halide with an Exceptional Second Harmonic Generation Response in IR Region. **2025**. (accepted)
101. Wood, C. C.; Patel, K. G.; Weber, V. L.; Osakwe, A. R.; Manovacia Moreno, N. P.; Broich, M. L.; Bledsoe, J. C.; Bramhall, J. A.; Klepov, V. V.; Bell, S.; Locklin, J. J.* Development of Impact Resistant Immediate Release Amorphous Solid Dispersion via Hot-Melt Extrusion and Injection Molding. *Int. J. Pharm.* **2025**, 680, 125746. DOI: [10.1016/j.ijpharm.2025.125746](https://doi.org/10.1016/j.ijpharm.2025.125746)
- 100.* Novikov, S. A.; Casey, J.; Long, H. A.; Klepov V. V.* Structural evolution of electron deficient copper chalcogenides. *CrystEngComm*. **2025**. DOI: [10.1039/D5CE00479A](https://doi.org/10.1039/D5CE00479A)
- 99.* Long, H. A.; Waldis, O.; **Klepov, V. V.*** Synthesis of $U_{0.92}Mn_3Si_2C$ Using Organic Carbon Source. DOI: [10.1002/zaac.202500047](https://doi.org/10.1002/zaac.202500047)
- 98.* Long, H. A.; Duong, D.; Blawat, J.; Morrison, G.; Wu, Y.; Cao, H.; Pokhrel, N.; Parker, D.; Singleton, J.; Jin, R.; **Klepov, V. V.*** Magnetic Properties Tuning via Broad Range Site Deficiency in Square Net Material UCu_xBi_2 . *J. Am. Chem. Soc.* **2025**. 147 (18), 15157–15169. DOI: [10.1021/jacs.4c18438](https://doi.org/10.1021/jacs.4c18438)
97. Keerthisinghe, N.; Morrison, G.; Breton, L. S.; Smith, M. D.; Zhang, Q.; Kirkham, M. J.; **Klepov, V. V.**; zur Loye, H.-C.* From Magnetic Chains to Sheets: The Impact of Hydrofluoric Acid Quantities in Mild Hydrothermal Synthesis on Mixed-Metal Fluoride Formation. *Chem. Mater.* **2025**, 37 (5), 2014–2025. DOI: [10.1021/acs.chemmater.4c03524](https://doi.org/10.1021/acs.chemmater.4c03524)
- 96.* Novikov, S.A.; Long, H. A.; Valueva, A.D.; **Klepov, V. V.*** Application of Voronoi Polyhedra for Analysis of Electronic Dimensionality in Halide Materials. **2024**. *J. Am. Chem. Soc.* **2024**. 146 (51), 35449–35461. DOI: [10.1021/jacs.4c14554](https://doi.org/10.1021/jacs.4c14554)
- 95.* Novikov, S. A.; Valueva, A. D.; **Klepov, V. V.*** Bandgap Engineering and Photoluminescence Tuning in Halide Double Perovskites. *Dalton Trans.* **2024**, 53 (30), 12442–12449. DOI: [10.1039/D4DT01420K](https://doi.org/10.1039/D4DT01420K)
94. Mirmohammadsadeghi, S.; Juhas, D.; Parker, M.; Peranidze, K.; Van Horn, D. A.; Sharma, A.; Patel, D.; Sysoeva, T. A.; **Klepov, V.**; Reukov, V. The Highly Durable Antibacterial Gel-like Coatings for Textiles. *Gels* **2024**, 10 (6), 398. DOI: [10.3390/gels10060398](https://doi.org/10.3390/gels10060398)
93. Tran, P. M.; Wang, Y.; Dzikovski, B.; Lahm, M. E.; Xie, Y.; Wei, P.; **Klepov, V. V.**; Schaefer III, H. F.; Robinson, G. H.* A Stable Aluminum Tris(dithiolene) Triradical. *J. Am. Chem. Soc.* **2024**, 146 (23), 16340–16347. DOI: [10.1021/jacs.4c05631](https://doi.org/10.1021/jacs.4c05631)
- 92.* Valueva, A.D.; Novikov, S.A.; Bledsoe, J.; Cai, Y.; Maksimova, A.A.; Locklin, J.; Zhao, Y.; **Klepov, V. V.*** Cubic Halide Perovskites in the $Cs(Pb_{1-x}Sn_x)(Br_{3-y}Cl_y)$ Solid Solutions for Crack-Free Bridgman Grown Single Crystals. *MRS Comm.* **2024** DOI: [10.1557/s43579-024-00535-6](https://doi.org/10.1557/s43579-024-00535-6) (Early Career Materials Researcher issue)
91. Berseneva, A. A.; Klepov, V. V.; Kashem, H. B.; Maksimova, A. A.; Morrison, G.; Wright, J.; Schaeperkoetter, J.; Mixture, S. T.; zur Loye, H.-C.* A Rare Bird: U^{+5} in Uranium Chalcogenides. *Chem Mater.* **2024**, 36 (16), 7988–8001. DOI: [10.1021/acs.chemmater.4c01440](https://doi.org/10.1021/acs.chemmater.4c01440)
90. Balvanz, A.; Safdari, M.; Zacharias, M.; Kim, D.; Welton, C.; Oriel, E. H.; Kepenekian, M.; Katan, C.; Malliakas, C. D.; Even, J.; **Klepov, V.**; Manjunatha Reddy, G. N.; Schaller, R. D.; Chen, L. X.; Seshadri, R.; Kanatzidis, M. G.* Structural Evolution and Photoluminescence Quenching across the $FASnI_{3-x}Br_x$ ($x = 0-3$) Perovskites. *J. Am. Chem. Soc.* **2024**, 146 (23), 16128–16147. DOI: [10.1021/jacs.4c03669](https://doi.org/10.1021/jacs.4c03669)

89. Bledsoe, J.; Crane, G.; Drewke, J.; **Klepov, V.**; Locklin, J.* Balancing Melt Solubility and Morphology in Epitaxial Nucleation: The Case of Nicotinic Acid and Poly(hydroxybutyrate-co-hydroxyhexanoate). *ACS Appl. Polym. Mater.* **2023**, DOI: [10.1021/acsapm.3c01692](https://doi.org/10.1021/acsapm.3c01692)
- 88.* Novikov, A. A.; Casey, J.; Long, H. A.; Bledsoe, J. C.; Locklin, J. J.; **Klepov, V. V.*** Electron deficiency in 2D chalcogenide NaCu_4S_3 with metallic properties. *Cryst. Growth Des.* **2023** <https://doi.org/10.1021/acs.cgd.3c00649>
87. Liu, Z.; Peters, J.; Bayikadi, K.; Klepov, V.; Pan, L.; Pandey, I.; Kanatzidis, M. G.; Wessels, B.* Defects of perovskite semiconductor CsPbBr_3 investigated via photoluminescence and thermally stimulated current spectroscopies. *J. Appl. Phys.* **2023**, 134, 245101. DOI: [10.1063/5.0177809](https://doi.org/10.1063/5.0177809)
86. De Siena, M. C.Š; **Klepov, V. V.**Š; Stepanoff, S. P.; Bayikadi, K. S.; Pan, L.; Pandey, I. R.; Karki, S.; Chung, D. Y.; Wolfe, D. E.; Kanatzidis, M. G.* Extreme γ -Ray Radiation Tolerance of Spectrometer-Grade CsPbBr_3 Perovskite Detectors. *Adv. Mater.* **2023**, 2211840. DOI: [10.1002/adma.202303244](https://doi.org/10.1002/adma.202303244) (Sequal contribution)
85. Vasileiadou, E. S.; Tajuddin, I. S.; De Siena, M. C.; **Klepov, V. V.**; Kepenekian, M.; Volonakis, G.; Even, J.; Wojtas, L.; Spanopoulos, I.; Zhou, X.; Iyer, A. K.; Fenton, J. L.; Dichtel, W. R.; Kanatzidis, M. G.* Novel 3D Cubic Topology in Hybrid Lead Halides with a Symmetric Aromatic Triammonium Exhibiting Water Stability. *Chem. Mater.* **2023**, 2303244. DOI: [10.1021/acs.chemmater.3c00164](https://doi.org/10.1021/acs.chemmater.3c00164)
84. Pan, L.; Liu, Z.; Welton, C.; **Klepov, V. V.**; Peters, J. A.; De Siena, M. C.; Benadia, A.; Pandey, I.; Miceli, A.; Chung, D. Y.; Reddy, G. N. M.; Wessels, B. W.; Kanatzidis, M. G.* Ultrahigh-Flux X-ray Detection by a Solution-Grown Perovskite CsPbBr_3 Single-Crystal Semiconductor Detector. *Adv. Mater.* **2023**, 2211840. DOI: [10.1002/adma.202211840](https://doi.org/10.1002/adma.202211840)
83. Berseneva, A. A.; **Klepov, V. V.**; Tisdale, H. B.; zur Loye, H.-C.* Flux-Assisted Polyttypism in the $[\text{Na}_2\text{Cl}]\text{GaQ}_2$ Heterolayered Salt-Inclusion Chalcogenide Family. *CrystEngComm* **2023**, 25 (15), 2307–2312. DOI: [10.1039/D3CE00074E](https://doi.org/10.1039/D3CE00074E)
82. **Klepov, V. V.**; De Siena, M. C.; Pandey, I. R.; Pan, L.; Bayikadi, K. S.; Butun, S.; Chung, D. Y.; Kanatzidis, M. G.* Laser Scribing for Electrode Patterning of Perovskite Spectrometer-Grade CsPbBr_3 Gamma-Ray Detectors. *ACS Appl. Mater. Interfaces* **2023**, 15 (13), 16895–16901. DOI: [10.1021/acsami.3c01212](https://doi.org/10.1021/acsami.3c01212)
81. Pan, L.; Pandey, I. R.; Miceli, A.; **Klepov, V. V.**; Chung, D. Y.; Kanatzidis, M. G.* Perovskite CsPbBr_3 Single-Crystal Detector Operating at 10^{10} Photons $\text{s}^{-1} \text{mm}^{-2}$ for Ultra-High Flux X-ray Detection. *Adv. Opt. Mater.* **2023**, 11 (7), 2202946. DOI: [10.1002/adom.202202946](https://doi.org/10.1002/adom.202202946)
80. Liu, Z.; Peters, J. A.; Pan, L.; **Klepov, V.**; De Siena, M.; Benadia, A.; Chung, D. Y.; Kanatzidis, M. G.; Wessels, B. W.* Investigation of Defects in Melt and Solution Grown Perovskite CsPbBr_3 Single Crystals. *Appl. Phys. Lett.* **2023**, 122 (13), 131902. DOI: [10.1063/5.0142802](https://doi.org/10.1063/5.0142802)
79. Fu, P.; Quintero, M. A.; Welton, C.; Li, X.; Cucco, B.; De Siena, M. C.; Even, J.; Volonakis, G.; Kepenekian, M.; Liu, R.; Laing, C. C.; **Klepov, V.**; Liu, Y.; Dravid, V. P.; Manjunatha Reddy, G. N.; Li, C.; Kanatzidis, M. G.* Short Aromatic Diammonium Ions Modulate Distortions in 2D Lead Bromide Perovskites for Tunable White-Light Emission. *Chem. Mater.* **2022**, 34 (21), 9685–9698. DOI: [10.1021/acs.chemmater.2c02471](https://doi.org/10.1021/acs.chemmater.2c02471)

78. Pan, L.; He, Y.; **Klepov, V. V.**; De Siena, M. C.; Kanatzidis, M. G. Perovskite CsPbBr₃ Single Crystal Detector for High Flux X-Ray Photon Counting. *IEEE Trans. Med. Imaging* **2022**, 41 (11), 3053–3061. DOI: [10.1109/TMI.2022.3176801](https://doi.org/10.1109/TMI.2022.3176801)
77. Vasileiadou, E. S.; Jiang, X.; Kepenekian, M.; Even, J.; De Siena, M. C.; **Klepov, V. V.**; Friedrich, D.; Spanopoulos, I.; Tu, Q.; Tajuddin, I. S.; Weiss, E. A.; Kanatzidis, M. G.* Thick-Layer Lead Iodide Perovskites with Bifunctional Organic Spacers Allylammonium and Iodopropylammonium Exhibiting Trap-State Emission. *J. Am. Chem. Soc.* **2022**, 144 (14) 6390–6409. DOI: [10.1021/jacs.2c00571](https://doi.org/10.1021/jacs.2c00571)
76. He, Y.; Hadar, I.; De Siena, M. C.; **Klepov, V. V.**; Pan, L.; Chung, D. Y.; Kanatzidis, M. G.* Sensitivity and Detection Limit of Spectroscopic-Grade Perovskite CsPbBr₃ Crystal for Hard X-Ray Detection. *Adv. Funct. Mater.* **2022**, 32 (24), 2112925. DOI: [10.1002/adfm.202112925](https://doi.org/10.1002/adfm.202112925)
75. Berseneva, A. A.; **Klepov, V. V.**; Pal, K.; Seeley, K.; Koury, D.; Schaeperkoetter, J.; Wright, J. T.; Mixture, S. T.; Kanatzidis, M. G.; Wolverton, C.; Gelis, A. V.; zur Loye, H.-C.* Transuranium Sulfide via the Boron Chalcogen Mixture Method and Reversible Water Uptake in the NaCuTS₃ Family. *J. Am. Chem. Soc.* **2022**, 144 (30), 13773–13786. DOI: [10.1021/jacs.2c04783](https://doi.org/10.1021/jacs.2c04783)
74. Novikov, S. A.; Lu, Y.; Zhang, W.; Halasyamani, P. S.; Hariyani, S.; Brgoch, J.; **Klepov, V. V.**; zur Loye, H.-C.; Mozharivskyj, Y.* Phosphorescence in Mn⁴⁺-Doped R⁺/R²⁺ Germanates (R⁺ = Na⁺ or K⁺, R²⁺ = Sr²⁺). *Inorg. Chem.* **2022**, 61 (24), 9364–9374. DOI: [10.1021/acs.inorgchem.2c01364](https://doi.org/10.1021/acs.inorgchem.2c01364)
73. Carone, D.; **Klepov, V. V.**; Mixture, S. T.; Schaeperkoetter, J. C.; Jacobsohn, L. G.; Aziziha, M.; Schorne-Pinto, J.; Thomson, S. A. J.; Hines, A. T.; Besmann, T. M.; zur Loye, H.-C.* Luminescence and Scintillation in the Niobium Doped Oxyfluoride Rb₄Ge₅O₉F₆Nb. *Inorganics* **2022**, 10 (6), 83. DOI: [10.3390/inorganics10060083](https://doi.org/10.3390/inorganics10060083)
72. Kutahyali Aslani, C.; **Klepov, V. V.**; zur Loye, H.-C.* Hydrothermal Synthesis of new Mixed-Oxoanion Materials: Rare Earth Iodate Sulfates Sm(IO₃)(SO₄) and Ln₂(IO₃)₃(SO₄)OH·3H₂O (Ln = Sm, Eu, Dy). *Solid State Sci.* **2022**, 129, 106918. DOI: [10.1016/j.solidstatesciences.2022.106918](https://doi.org/10.1016/j.solidstatesciences.2022.106918)
71. Keerthisinghe, N.; Chsritian, M.S.; Berseneva, A. A.; Morrison, G.; **Klepov, V. V.**; Smith M.D.; zur Loye, H.-C.* Investigation of Metastable Low Dimensional Halometallates. *Molecules*. **2022**, 27 (1), 280. DOI: [10.3390/molecules27010280](https://doi.org/10.3390/molecules27010280)
70. Torma, A.; Li, W.; Zhang, H.; Tu, Q.; **Klepov, V. V.**; Brennan, M. C.; McCleese, C. L.; Krzyaniak, M. D.; Wasielewski, M. R.; Katan, C.; Even, J.; Holt, M. V.; Grusenmeyer, T. A.; Jiang, J.; Pachter, R.; Kanatzidis, M. G.; Blancon, J.-C.*; Mohite, A. D.* Interstitial nature of Mn²⁺ doping in 2D perovskites. *ACS Nano*. **2021**, 15 (12), 20550–20561. DOI: [10.1021/acsnano.1c09142](https://doi.org/10.1021/acsnano.1c09142)
69. Peters, J. A.; Liu, Z.; Bulgin, O.; He, Y.; **Klepov, V. V.**; De Siena, M. C.; Kanatzidis, M. G.; Wessels, B. W.* Excitons in CsPbBr₃ Halide Perovskite. *J. Phys. Chem. Lett.* **2021**, 12 (38), 9301–9307. DOI: [10.1021/acs.jpcclett.1c02397](https://doi.org/10.1021/acs.jpcclett.1c02397)
68. **Klepov, V. V.**; Pace, K. A.; Berseneva, A. A.; Felder, J. B.; Calder, S.; Morrison, G.; Zhang, Q.; Kirkham, M. J.; Parker, D. S.; zur Loye, H.-C.* Chloride reduction of Mn³⁺ in the mild hydrothermal synthesis of a charge ordered defect pyrochlore, CsMn²⁺Mn³⁺F₆, a canted antiferromagnet with a hard ferromagnetic component. *J. Am. Chem. Soc.* **2021**, 143 (30), 11554–11567. DOI: [10.1021/jacs.1c04245](https://doi.org/10.1021/jacs.1c04245)

67. Keerthisinghe, N.; Berseneva, A. A.; **Klepov, V. V.**; Morrison, G.; zur Loye, H.-C.* A Geometrically Frustrated Family of $M^{II}M^{III}F_5(H_2O)_2$ Mixed–Metal Fluorides with Complex Magnetic Interactions. *Inorg. Chem.* **2021**, 60 (18), 14318–14329. DOI: [10.1021/acs.inorgchem.1c01889](https://doi.org/10.1021/acs.inorgchem.1c01889)
66. Christian, M. S.*; Pace, K. A.; **Klepov, V. V.**; Morrison, G.; zur Loye, H.-C.*; Besmann, T. M.* A Density–Functional Theory Structural Database for Discovery of Novel Actinide Waste Forms. *Cryst. Growth Des.* **2021**, 21 (9), 5100–5107. DOI: [10.1021/acs.cgd.1c00494](https://doi.org/10.1021/acs.cgd.1c00494)
65. Kutahyali Aslani, C.; **Klepov, V. V.**; Aslani, M.; zur Loye, H.-C.* Hydrothermal Synthesis of new Iodates $Ln_2(IO_3)_3(IO_4)$ ($Ln=La, Nd, Pr$) Containing the Tetraoxiodate(V) Anion: Creation of Luminescence Properties by Doping with Eu, Dy, Tb. *Cryst. Growth Des.* **2021**, 21 (8), 4707–4712. DOI: [10.1021/acs.cgd.1c00545](https://doi.org/10.1021/acs.cgd.1c00545)
64. Pace, K. A.; **Klepov, V. V.**; Smith, M. D.; Williams, T.; Morrison, G.; Lauterbach, J. A.; Misture, S. T.; zur Loye, H.-C.* Hydrothermal Synthesis and Structural Investigation of a Crystalline Uranyl Borosilicate. *Inorganics* **2021**, 9 (4), 25. DOI: [10.3390/inorganics9040025](https://doi.org/10.3390/inorganics9040025)
63. Morrison, G.; **Klepov, V. V.**; zur Loye, H.-C.* Pentanary Cesium Titanyl/Titanate Silicate Oxyfluorides: Syntheses and Structures. *Solid State Sci.* **2021**, 118, 106664. DOI: [10.1016/j.solidstatesciences.2021.106664](https://doi.org/10.1016/j.solidstatesciences.2021.106664)
62. Kutahyali Aslani, C.; Breton, L. B.; **Klepov, V. V.**; zur Loye, H.-C.* A Series of $Rb_4Ln_2(P_2S_6)(PS_4)_2$ ($Ln = La, Ce, Pr, Nd, Sm, Gd$) Rare Earth Thiophosphates with Two Distinct Thiophosphate Units $[P^VS_4]^{3-}$ and $[P^{IV}_2S_6]^{4-}$. **2021**, 50, 1683–1689. DOI: [10.1039/D0DT03718D](https://doi.org/10.1039/D0DT03718D)
- 61.* Pace, K. A.‡; **Klepov, V. V.** §*; Berseneva, A. A.; zur Loye, H.-C.* Covalency in Actinide Compounds. *Chem. Eur. J.* **2021**, 27 (19), 5835–5841. DOI: [10.1002/chem.202004632](https://doi.org/10.1002/chem.202004632)
60. **Klepov, V. V.**; Kocovski, V.; Besmann, T. M.; zur Loye, H.-C.* Dimensional Reduction upon Calcium Incorporation in $Cs_{0.3}(Ca_{0.3}Ln_{0.7})PS_4$ and $Cs_{0.5}(Ca_{0.5}Ln_{0.5})PS_4$. *CrystEngComm.* **2021**, 23, 831–840. DOI: [10.1039/D0CE01524E](https://doi.org/10.1039/D0CE01524E)
59. Kutahyali Aslani, C.; **Klepov, V. V.**; zur Loye, H.-C.* Flux Crystal Growth of a New $BaTa_2O_6$ Polymorph, and of the Novel Tantalum Oxyfluoride Salt Inclusion Phase $[Ba_3F]Ta_4O_{12}F$: Flux Dependent Phase Formation. *J. Solid State Chem.* **2021**, 294, 121833. DOI: [10.1016/j.jssc.2020.121833](https://doi.org/10.1016/j.jssc.2020.121833)
- 58.* Breton, L. B.‡; **Klepov, V. V.** §*; zur Loye, H.-C.* Facile Oxide to Chalcogenide Conversion for Actinides using the Boron–Chalcogen Mixture Method. *J. Am. Chem. Soc.* **2020**, 142 (33), 14365–14373. DOI: [10.1021/jacs.oc06483](https://doi.org/10.1021/jacs.oc06483) (§equal contribution)
- Highlighted in JACS Spotlight “New BCM Method Enables Easy Formation of Actinide Chalcogenides.” DOI: [10.1021/jacs.oc09620](https://doi.org/10.1021/jacs.oc09620)
57. Carone, D.; Usman, M.; **Klepov, V. V.**; Smith, M. D.; Kocovski, V.; Besmann, T. M.; zur Loye, H.-C.* New Germanate and Mixed Cobalt Germanate Salt Inclusion Materials: $[(Rb_6F)(Rb_4F)][Ge_{14}O_{32}]$ and $[(Rb_6F)(Rb_{3.1}Co_{0.9}F_{0.96})][Co_{3.8}Ge_{10.2}O_{30}F_2]$. *CrystEngComm* **2020**, 22 (46), 8072–8080. DOI: [10.1039/D0CE01099E](https://doi.org/10.1039/D0CE01099E)
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- B.* Heterometallic Multinuclear Nodes Directing MOF Electronic Behavior. *Chem. Sci.* **2020**, 11 (28), 7379–7389. DOI: [10.1039/DO5C03053H](https://doi.org/10.1039/DO5C03053H)
55. Pace, K. A.; **Klepov, V. V.**; Deason, T. K.; Smith, M. D.; Ayer, G. B.; DiPrete, D. P.; Amoroso, J. W.; zur Loye, H.-C.* Expansion of the $\text{Na}_3\text{M}^{\text{III}}(\text{Ln}/\text{An})_6\text{F}_{30}$ Series: Incorporation of Plutonium into a Highly Robust and Stable Framework. *Chem. Eur. J.* **2020**, 26, 12941–12944. DOI: [10.1002/chem.202002774](https://doi.org/10.1002/chem.202002774)
54. Ayer, G. B.; **Klepov, V. V.**; Smith, M. D.; Hu, M.; Yang, Z.; Martin, C. R.; Morrison, G.; zur Loye, H.-C.* BaWO_2F_4 : A Mixed Anion X-ray Scintillator with Excellent Photoluminescence Quantum Efficiency. *Dalton Trans.* **2020**, 49, 10734–10739. DOI: [10.1039/DO5T02184A](https://doi.org/10.1039/DO5T02184A)
53. Keerthisinghe, N.; **Klepov, V. V.**; Zhang, E.; Smith, M. D.; Egodawatte, S.; Foulger, S. H.; zur Loye, H.-C.* Hydrothermal Synthesis and Properties of $\text{MMF}_5(\text{H}_2\text{O})_7$ ($\text{M} = \text{Co}^{2+}$ and Ni^{2+} , $\text{M} = \text{Mn}^{3+}$, Ga^{3+} , and In^{3+}). *Solid State Sci.* **2020**, 108, 106374. DOI: [10.1016/j.solidstatesciences.2020.106374](https://doi.org/10.1016/j.solidstatesciences.2020.106374)
52. Pace, K. A.; **Klepov, V. V.**; Christian, M. S.; Morrison, G.; Deason, T. K.; Kutahyali Aslani, C.; Besmann, T. M.; Diprete, D. P.; Amoroso, J. W.; zur Loye, H.-C.* Targeting Complex Plutonium Oxides by Combining Crystal Chemical Reasoning with Density-Functional Theory Calculations: The Quaternary Plutonium Oxide $\text{Cs}_2\text{PuSi}_6\text{O}_{15}$. *Chem. Commun.* **2020**, 56 (66), 9501–9504. DOI: [10.1039/DO5C02674C](https://doi.org/10.1039/DO5C02674C)
51. **Klepov, V. V.**; Berseneva, A. A.; Pace, K. A.; Kocovski, V.; Sun, M.; Qiu, P.; Wang, H.; Chen, F.; Besmann, T. M.; zur Loye, H.-C.* NaGaS_2 : An Elusive Layered Compound with Dynamic Water Absorption and Wide-Ranging Ion-Exchange Properties. *Angew. Chem. Int. Ed.* **2020**, 59 (27), 10836–10841. DOI: [10.1002/anie.202001203](https://doi.org/10.1002/anie.202001203)
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35. Juillerat, C. A. §; **Klepov, V. V.** §; Morrison, G.; Pace, K. A.; zur Loye, H.-C.* Flux Crystal Growth: A Versatile Technique to Reveal the Crystal Chemistry of Complex Uranium Oxides. *Dalton Trans.* **2019**, 48 (10), 3162–3181. DOI: [10.1039/C8DT04675A](https://doi.org/10.1039/C8DT04675A) (§equal authorship)
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Awards and Honors

University of South Carolina ASPIRE research grant for postdocs (\$5,000)	2020
DAAD (German Academic Exchange Service) Scholarship, Forschungszentrum Jülich (€10,000/\$12,000)	2013
Stipendium of the President of Russian Federation (\$1,000)	2012
Award of Ministry of Education and Sciences of Samara Region for graduate students (\$2,500) and undergraduate students (\$1,000)	2012, 2010

Professional Presentations

20. Department of Physics and Astronomy, University of South Carolina, *Columbia*, **2025**.
19. Department of Chemistry, Louisiana State University, *Baton Rouge*, **2025**.
18. Department of Chemistry, Tulane University, *New Orleans*, **2025**.
17. Klepov V. V. (**invited**) Intermolecular interactions in hybrid halide compounds and their influence on the optical properties. ACS Spring, San Diego, **2025**.
16. Long, H. A.; Klepov V. V. Magnetic properties tunability through the site deficiency control in $\text{UCu}_{1-x}\text{Bi}_x$. Gordon Research Conference on Solid State Chemistry. New London, NH (USA), July 21–26, **2024**.
15. Klepov V. V. (**invited**) HfCuSi_2 -type actinide bismuthides as a platform for magnetic and topological materials. North American Solid State Conference. Calgary, Canada. August 2–4, **2023**.

14. Klepov V. V.; zur Loye H.-C. NaGaS₂ – an elusive compound with dynamic water absorption and wide-ranging ion exchange properties. ACS Fall 2020 National Meeting, August 17–20, **2020**, San Francisco, CA, USA. DOI: [10.1021/scimeetings.oc07153](https://doi.org/10.1021/scimeetings.oc07153)
13. Klepov V. V.; zur Loye H.-C. Topological complexity of uranium thiophosphates. ACS Fall 2020 National Meeting, August 17–20, **2020**, San Francisco, CA, USA.
12. Klepov, V. V.; zur Loye, H.-C. Magnetic properties of uranium(IV) fluorides and thiophosphates. North American Solid State Conference. Golden, CO (USA), July 31 – August 2, **2019**.
11. Klepov, V.V. ; zur Loye, H.-C. New Families of Uranium(IV) Fluoride Materials. Gordon Research Seminar and Conference on Solid State Chemistry. New London, NH (USA), July 21–27, **2018**.
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9. Klepov, V. V.; Sergeeva, O. A.; Vologzhanina, A. V.; Pushkin, D. V.; Serezhkina, L. B.; Serezhkin, V. N. First Uranyl acrylate complexes – structural diversity and properties. 14th Conference of the Asian Crystallographic Association, December 4–7, **2016**. Hanoi, Vietnam. P. 38.
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5. Klepov, V. V.; Vologzhanina, A. V.; Pushkin, D. V.; Serezhkina, L. B. Novel acetate complexes of uranyl and strontium. 7th Russian conference on radiochemistry “Radiochemistry–2012”. Dimitrovgrad (Russia). October 15–19, **2012**.
4. Klepov, V. V.; Serezhkina, L. B.; Vologzhanina, A. V.; Serezhkin, V. N. Synthesis, crystal structure and properties of [Be(H₂O)₄][UO₂(CH₃COO)₃]₂. XXII Congress and General Assembly of the International Union of Crystallography. Madrid, August 22–30, **2011**.
3. Klepov, V. V.; Peresypkina, E. V.; Virovets, A. V.; Serezhkina, L. B.; Serezhkin, V. N. Synthesis and structure of [Cr₃O(CH₃COO)₆(H₂O)₃UO₂(CH₃COO)₃]₃H₂O. 6th National Crystal Chemistry Conference. Suzdal (Russia), June 1–4, **2011**.
2. Klepov, V. V.; Serezhkina, L. B.; Vologzhanina, A. V. Synthesis, structure and some properties of [PbUO₂(CH₃COO)₄(H₂O)₃]. 2nd Conference for young scientists “Diffraction methods of investigation: from molecules to crystals and nanomaterials”. Chernogolovka (Russia), June 28 – July 1, **2010**.

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Teaching experience

Department of Chemistry, University of Georgia

- CHEM3400 Modern Inorganic Chemistry Fall **2022**, Fall **2023**
- CHEM8290 Solid State Materials Chemistry Spring **2024**
- CHEM8290 X-ray Crystallography Spring **2025**

Department of Chemistry, University of South Carolina

- X-ray crystallography (2-week course for graduate students) Fall **2019**, **2020**

Teaching assistant/Senior lecturer

2010 – 2015/2015 – 2017

Department of Chemistry, Samara State University

- Crystal Chemistry and Crystallography (lectures and lab work) **2015 – 2017**
- General and Inorganic Chemistry (lab course) **2011 – 2012, 2014 – 2017**
- Group Theory (lecture and lab course) **2010 – 2013, 2014 – 2017**
- Solid State Chemistry (lab course) **2015 – 2017**
- Solid State Chemistry (lab course) **2014 – 2017**
- Solid State Chemistry (lab course) **2014 – 2017**

Professional Activities

Manuscripts reviewed for *Journal of American Chemical Society*, *Angewandte Chemie*, *Advanced Optical Materials*, *Advanced Functional Materials*, *Small*, *Chemistry of Materials*, *ChemComm*, *Inorganic Chemistry*, *Journal of Alloys and Compounds*, *Crystal Growth & Design*, *Dalton Transactions*, *CrystEngComm*, *Chemistry – European Journal*, *Frontiers in Chemistry*, *Journal of Solid State Chemistry*, *Solid State Sciences*, *Zeitschrift für anorganische und allgemeine Chemie*, *Radiochimica Acta*, *Journal of Molecular Structure*, *ACS Omega*.