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ACADEMIC RECORD

Ph.D.	Geological Sciences	Virginia Tech	1984
	"Systematics of the pyrochlore structure type, and theoretical molecular modeling of silanol - water interactions."		
M.S.	Geological Sciences	Virginia Tech	1981
	"A molecular orbital study of I. rings in silicates and siloxanes and II. order-disorder isomorphism in silicate anions."		
B.S.	Geology, <i>summa cum laude</i> ,	University of New Mexico	1978
	with Departmental Honors "Microlite, the Harding pegmatite, Taos County, New Mexico."		
Scholastic Awards:	Cunningham Fellowship, Virginia Tech		1981-82
	State Tuition Scholarship, Virginia Tech		Fall 1980
	Albuquerque Gem & Mineral Club Scholarship, UNM		1975/1976
	Harry & Mabel Leonard Scholarship, UNM		1975/1976

PROFESSIONAL EXPERIENCE

Oak Ridge National Laboratory	
Emeritus Corporate Fellow	2024-present
Group Leader, <i>Single-Crystal Diffraction, NSD</i>	2020-2024
Team Leader, <i>Single-Crystal Diffraction, Diffraction Group, NSD</i>	2018-2020
Instrument Scientist, <i>Diffraction Group, Neutron Scattering Division</i>	2017- 2018
Group Leader, <i>Structure of Matter, Quantum Condensed Matter Division</i>	2011-2017
Group Leader, <i>Single-Crystal Neutron Diffraction, NSD</i>	2006-2011
Instrument Scientist, <i>Neutron Scattering Sciences Division</i>	2006-2011
Instrument Scientist, <i>Center for Neutron Scattering, Solid State Division</i>	1993-2006
Staff Scientist, <i>Synthesis & Properties of Novel Materials Group, Solid State Division</i>	1988-1993

My active research program focuses on structure - property relationships in novel and technologically important materials. I have served as instrument scientist for the single-crystal four-circle diffractometer (2002-2011) and powder diffractometer (1994-2007) at the High Flux Isotope Reactor. Systematic crystal physics, chemistry and crystallography of inorganic materials are the broad themes of my research and collaborative contributions. Materials of interest include thermoelectric materials, gas hydrates, superconductors and related phases, intermetallics, phosphates, biomaterials (e.g., apatite, otoliths), silicates, metamict minerals, and granitic pegmatite. My "hands-on" experimental activities include X-ray (powder &

single-crystal) and neutron (powder & single-crystal) diffraction, synthesis of ceramic materials, growth of large single-crystals (flux, floating zone, and Czochralski methods), thermal analysis, optical microscopy, and analytical electron microscopy.

University of New Mexico, Department of Geology 1984-1988

Post-Doctoral Fellow: With Rodney C. Ewing, conducted experimental and theoretical investigations of the structural chemistry of α -decay damage in complex oxides. Departmental responsibilities included supervision and renovation of the x-ray diffraction and crystal synthesis laboratories, revision of the mineralogy curriculum, improvement of in-house computer hardware and software, and the design and instruction of a graduate level crystallography course.

Virginia Tech, Department of Geological Sciences 1978-1984

Graduate Teaching Assistant: Taught laboratory classes in Mineralogy (3 terms), Crystallography (2 terms), Optical Crystallography (3 terms), Igneous Petrography (1 term), and Introductory Geology (2 terms). Three summers and one year support as a Graduate Assistant were spent on maintenance, design, and installation of computer software for a research group of 7 (Investigator, G. V. Gibbs) doing quantum chemical and crystallographic calculations.

University of New Mexico Department of Geology 1974-1978

Curator of Mineralogy: Organized and maintained teaching and research collections, designed educational museum exhibits, and conducted library research for grant-supported projects (Investigator, R.C. Ewing) on crystal chemistry of radioactive waste forms. Also taught Mineralogy Laboratory (2 terms).

ACTIVE INTERESTS

Research: crystal structure-property relationships
magnetic crystal structures
synthesis and characterization of novel materials
crystal structure, physics, and chemistry of solids
metamictization and radiation damage of crystals and glasses
mineralogy and petrology of pegmatites and volatile-rich silicate melts

Teaching: crystallography, powder and single-crystal diffractometry, mineralogy, crystal chemistry, optical crystallography, materials physics

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science (since 1983, Fellow 2016)
American Crystallographic Association (since 1983, Fellow 2016)
American Geophysical Union (since 1984)
American Physical Society (since 2007)
Mineralogical Association of Canada (since 1975)
Mineralogical Society of America (since 1973, Fellow 2007)
Neutron Scattering Society of America (since 1993, Fellow 2020)

HONORS & AWARDS

Neutron Scattering Society of America, Service Award, Serving as a Director of the National School of Neutron and X-ray Scattering, ORNL Science Director 2008-2018, 2024

ORNL Corporate Fellow, elected 2020

Fellow, Neutron Scattering Society of America, elected 2020

Bau Neutron Diffraction Award, American Crystallographic Association, 2019

Fellow, American Association for the Advancement of Science, elected 2016, Geosciences Section

Fellow, American Crystallographic Association, elected 2016

Fellow, Mineralogical Society of America, elected 2007

PROFESSIONAL ACTIVITIES

Member of the U.S. National Committee for Crystallography, 2022-2024.

Cedrol hemihydrate structure on cover of *Acta Crystallographica C* 80, 2024.

NSF Panel and Site Reviewer, Feb 27 – Mar 1, 2023.

ORNL Neutron Scattering Division, Women in Neutron Sciences (WiNS) Outings Coordinator, 2021, 2023.

ORNL Neutron Scattering Division, Women in Neutron Sciences (WiNS) Recognition & Engagement Project Lead, 2021.

Member of the Research Committee for the Japan Atomic Energy Agency - U.S. Department of Energy Cooperative Program on Neutron Scattering, 1995- 2024.

Chair, Nominating Committee, American Crystallographic Association, 2020.

Secretary, Mineralogical Society of America, 2015-2019.

Advisory Committee Member, National School on Neutron and X-ray Scattering, 2020-2024.

ORNL Science Director, National School on Neutron and X-ray Scattering, 2008-2018.

Letters Editor, *American Mineralogist*, 2005-2010.

Served as external reviewer for Sebastian Christensen's Ph.D. defense, Aarhus University, Aarhus, Denmark, Nov 2015.

Chair of the Powder Diffraction Special Interest Group of the American Crystallographic Association, 2005.

Expert for International Atomic Energy Agency educational mission to the Instituto Peruano Energía Nuclear, Lima, Peru, course instructor for Nuclear Techniques to Materials Applications, January 3-10, 2004.

Guest Editor, special issue on Clathrate Hydrates of the *American Mineralogist*, Vol 89, Aug-Sept 2004.

Executive Committee, Instrument Development Team for the Single Crystal Diffractometer, Spallation Neutron Source, Oak Ridge, Tennessee, June 2002-2011.

Session Organizer, "Clathrates, Ices and Planetary Materials" for the American Crystallographic Association Annual Meeting, Los Angeles, California, July 21-26, 2001.

Chair of the Neutron Scattering Special Interest Group of the American Crystallographic Association, 2001.

Associate Editor, *American Mineralogist*, 1999-2004.

Guest Editor, *Neutron News*, Volume 10, Issue 2, 1999, special issue on the neutron scattering facilities at the High Flux Isotope Reactor at Oak Ridge National Laboratory, 1998-1999.

Grand Awards Judge for Chemistry, International Science & Engineering Fair, Louisville, Kentucky, May 11-12, 1997.

Intense Pulsed Neutron Source Program Advisory Committee, 1996 – 2001.

Member of the Organizing Committee and Single-Crystal Diffraction Working Group Chair for the Workshop on Instrumentation Needs and Performance Metrics for the National Spallation Neutron Source, Oct. 31-Nov. 1, 1996, Oak Ridge, Tennessee, 1996.

Member of the Research Committee for the Institute for Solid State Physics (Univ. Tokyo) - U.S. Department of Energy Cooperative Program on Neutron Scattering, 1995 – 2005.

Correspondent for *Neutron News*, 1994 – 2004.

2nd Place in Optical Micrographs, The American Ceramic Society, Ceramographic Contest. "Dehydration of Newberyite" by L.A. Boatner, B.C. Sales, and B.C. Chakoumakos, 1992.

1st Place in the Unique/Unusual/New Techniques Class, International Metallographic Contest. "Ultramicroscopy of a Crystalline-To-Amorphous Phase Transition" by L.A. Boatner, B.C. Chakoumakos, B.C. Sales and A.G. Baldwin, 1992.

Technical Achievement Award, Martin Marietta Energy Systems, H.A. Mook, M. Mostoller, J.A. Harvey, N.W. Hill, B.C. Chakoumakos and B.C. Sales, Observation of phonon softening at the superconducting transition in Bi₂Sr₂CaCu₂O₈. *Physical Review Letters* 65, 2712-2715 (1990), 1992.

Participant, Rietveld Refinement Round-Robin sponsored by the Commission on Powder Diffraction of the International Union of Crystallography, 1991.

Young Scientist Award, International Union of Crystallography, Travel funds to attend the XIVth International Congress of Crystallography, Perth, Australia, 1987.

Photograph of microfracturing in zircon on cover of *Science* June 19, 1987, Volume 236, pp. 1493-1600.

Mentoring

Si “Athena” Chen, Ph.D. student, Department of Geosciences, Pennsylvania State University, summer 2021.

Matheus Pianassola, Ph.D. student, Materials Science and Engineering and Scintillation Materials Research Center, University of Tennessee, 2021-2024; served on Ph.D. Thesis committee.

Emil Klahn, Ph.D. student, Department of Chemistry, Aarhus University, Denmark for 4 months 2019

Daniel Rutstrom, undergraduate & Ph.D. student, Materials Science and Engineering and Scintillation Materials Research Center, University of Tennessee 2017-2024.

R. Seth Wood, undergraduate, Department of Earth & Planetary Science, University of Tennessee, 2017-2018.

Jesse Johnson, undergraduate, Materials Science and Engineering and Scintillation Materials Research Center, University of Tennessee 2017.

Nikolaj Roth, Ph.D. student, Department of Chemistry, Aarhus University, Denmark for 2 months in 2016.

John Salasin, graduate, Materials Science and Engineering, University of Tennessee, 2014.

Marybeth Parker, Materials Science and Engineering, University of Tennessee, undergraduate, 2010-2011.

Huibo Cao, ORNL Post-doctoral Fellow, 2009-2010.

Lauren Garten, undergraduate, Missouri University of Science and Technology, summer intern 2008.

Birgitte Pedersen, Ph.D. student, Department of Chemistry, Aarhus University, Denmark for 5 months 2006.

Cara Nygren, Department of Chemistry, University of Tennessee, Knoxville, 2003-2005, served on Ph.D. Thesis committee.

Sam Subramaniam, Miles College, visiting faculty, Summer, 2002.

Matt Farmer, Baylor University, graduate student, chemistry, Summer, 1999.

M. Jenee Mitchell, Physics, Summer Intern, 1998.

Ben Coster, Southwestern Oklahoma State University, undergraduate, ORNL/Science and Energy Research Semester Program, Spring, 1995.

PUBLICATIONS

Web of Science: 280 pubs, 13225 citations, h-factor = 59

Google Scholar: 18396 citations, h-factor 70

Journal Articles

Chakoumakos, B.C., Xiaoping Wang, Antonio dos Santos, Magnetic structure of atacamite, $\text{Cu}_2(\text{OH})_3\text{Cl}$, a distorted pyrochlore lattice. *Physical Review Materials*, in preparation.

Chen, S.A., **Bryan C. Chakoumakos**, James D. Kubicki, Yongqiang Chen, Luke L. Daemen, Jeffrey E. Post, Peter J. Heaney, Fingerprinting the water and vacancy sites in superhydrous hematite: Neutron scattering and first principles study. *American Mineralogist*, in preparation.

Chen, Si Athena; Juliane Weber, Peter J. Eng, Joanne E. Stubbs, Vitalii Starchenko, Hsiu-Wen Wang, Tingting Liu, Tyler L. Spano, **Bryan C. Chakoumakos**, Andrew G. Stack, Real-time atomic-scale structural analysis resolves the amorphous to crystalline CaCO₃ mechanism controversy. *Crystal Growth & Design* 24, 5027-5038 (2024).

Zhao, Boyang; Guodong Ren, Hongyan Mei, Vincent C. Wu, Shantanu Singh, Gwan-Yeong Jung, Huandong Chen, Raynald Giovine, Shanyuan Niu, Arashdeep S. Thind, Jad Salman, Nick S. Settineri, **Bryan C. Chakoumakos**, Michael E. Manely, Raphael P. Hermann, Andrew R. Lupini, Miaofang Chi, Jordan A. Hachtel, Miaofang Chi, Jordan A. Hachtel, Arkadiy Simonov, Simon J. Teat, Raphaële J. Clément, Mikhail A. Kats, Jayakanth Ravichandran, Rohan Mishra, Giant modulation of refractive index from picoscale atomic displacements. *Advanced Materials* 36, 2311559 (2024).

Chakoumakos, B.C. and Wang, X.P., (+)-Cedrol hemihydrate: A natural product derived from drying eastern red cedar (*Juniperus virginiana*) wood. *Acta Crystallographica C* 80, 43–48 (2024).

Chen, Huandong; Batyr Ilyas, Boyang Zhao, Emre Ergecen, Josh Mutch, Gwan Yeong Jung, Qian Song, Connor A. Occhialini, Guodong Ren, Sara Shabani, Eric Seewald, Shanyuan Niu, Jiangbin Wu, Nan Wang, Mythili Surendran, Shantanu Singh, Jiang Luo, Sanae Ohtomo, Gemma Goh, **Bryan C. Chakoumakos**, Simon J. Teat, Brent Melot, Han Wang, Di Xiao, Abhay N. Pasupathy, Riccardo Comin, Rohan Mishra, Jiun-Haw Chu, Nuh Gedik, Jayakanth Ravichandran, Charge-density-wave order and electronic phase transitions in a dilute D-band semiconductor. *Advanced Materials* 35, 2303283 (2023).

Hongyan Mei, Guodong Ren, Boyang Zhao, Jad Salman, Gwan Yeong Jung, Huandong Chen, Shantanu Singh, Arashdeep S. Thind, John Cavin, Jordan A. Hachtel, Miaofang Chi, Shanyuan Niu, Graham Joe, Chenghao Wan, Nick Settineri, Simon J. Teat, **Bryan C. Chakoumakos**, Jayakanth Ravichandran, Rohan Mishra, Mikhail A. Kats, Colossal optical anisotropy from atomic-scale modulations, *Advanced Materials* 35, 2303588 (2023).

Sandemann, Jonas; Stöckler, Kristoffer; Wang, Xiaoping; **Chakoumakos, Bryan**; Iversen, Bo, Benchmark crystal structure of defect-free spinel ZnFe₂O₄. *Journal of the American Chemical Society* 145, 21053–21065 (2023).

Chakoumakos, B. C. and Pracheil, B. M., Optical petrography of vaterite in fish otoliths. *The Canadian Journal of Mineralogy and Petrology* 61, 899–905 (2023).

Pasco, C.M., Binod K. Rai, Matthias Frontzek, Gabriele Sala, Matthew B. Stone, **Bryan C. Chakoumakos**, V. Ovidiu Garlea, Andrew D. Christianson, Andrew F. May, Anisotropic magnetism of the Shastry-Sutherland lattice material BaNd₂PtO₅. *Physical Review Materials* 7, 074407 (2023).

Hao, Yiqing; Erxi Feng, Leah Zimmer, Zachary Morgan, **Bryan C. Chakoumakos**, Guannan Zhang, Huibo Cao, Machine learning assisted real-time data reduction towards automated single crystal neutron diffraction. *Journal of Applied Crystallography* 56, 519-525 (2023).

Pianassola, M., **Bryan C. Chakoumakos**, Charles L. Melcher, Mariya Zhuravleva, Crystal growth and phase formation of high-entropy rare-earth aluminum perovskites. *Crystal Growth and Design* **23**, 480–488 (2023).

Sandemann, J.R., Thomas Bjørn Grønbech Egede, Kristoffer Andreas Holm Støckler, Feng Ye, **Bryan C. Chakoumakos**, Bo Brummerstedt Iversen, Direct visualization of magnetic interactions in frustrated spinel ZnFe₂O₄. *Advanced Materials*, 2207152 (2022).

Yin, J., Zhang, G., Cao, H., Dash, S., **Chakoumakos, B.C.**, Wang, F. (2022). Toward an Autonomous Workflow for Single Crystal Neutron Diffraction. In: Doug, K., Al, G., Pophale, S., Liu, H., Parete-Koon, S. (eds) Accelerating Science and Engineering Discoveries Through Integrated Research Infrastructure for Experiment, Big Data, Modeling and Simulation. SMC 2022. *Communications in Computer and Information Science*, Vol 1690. Springer, Cham. https://doi.org/10.1007/978-3-031-23606-8_15

Pianassola, M., Kaden L. Anderson, Joshua Safin, Can Agca, Jake W. McMurray, **Bryan C. Chakoumakos**, Jörg C. Neuefeind, Charles L. Melcher, Mariya Zhuravleva, Tuning the melting point and phase stability of rare-earth oxides facilitates their crystal growth from the melt. *Journal of Advanced Ceramics* **11**, 1479–1490 (2022).

Liu, Yahuoa; Huibo Cao, Stephan Rosenkranz, Matthew Frost, Thomas Huegle, Jiao Y. Y. Lin, Peter Torres, Alexandru Stoica, **Bryan C. Chakoumakos**, PIONEER, a high-resolution single-crystal polarized neutron diffractometer. *Review of Scientific Instruments* **93**, 073901 (2022).

Pianassola, M., Marlena Alexander, **Bryan C. Chakoumakos**, Merry Koschan, Charles L. Melcher, Mariya Zhuravleva, Effects of composition and growth parameters on phase formation in multicomponent aluminum garnet crystals. *Acta Crystallographica B* **78**, 476-484 (2022).

Wood, R.S., Allison M. Fortner, Kat Gillies-Rector, **B. C. Chakoumakos**, Matthias Frontzek, Ilia N. Ivanov, Linda C. Kah, Brian Kennedy, Brenda M. Pracheil, Quantifying fish otolith mineralogy for trace element chemistry studies. *Scientific Reports*, **12**, 2727 (2022).

Morgan, Z., Haidong Zhou, **Bryan Chakoumakos**, Feng Ye, RMC-DISCORD: Reverse Monte Carlo refinement of Diffuse Scattering and CORrelated Disorder from single crystals. *Journal of Applied Crystallography* **54**, 1867–1885 (2021).

Chakoumakos, B. C., J. B. Parise, Probing phase transitions and magnetism in minerals with neutrons. *Elements* **17**, 181-188 (2021).

Pianassola, M., Luis Stand, Madeline Loveday, **B. C. Chakoumakos**, Merry Koschan, Charles L. Melcher, Mariya Zhuravleva, Czochralski growth and characterization of the multicomponent garnet (Lu_{1/4}Yb_{1/4}Y_{1/4}Gd_{1/4})₃Al₅O₁₂. *Physical Review Materials* **5**, 083401 (2021).

Loeppky, A. R., Belding, L., Quijada-Rodriguez, A., Morgan, J., Pracheil, B., **Chakoumakos, B. C.**, Anderson, W.G., Otolith polymorph composition in sturgeons: Influence of ontogenetic development and environmental conditions. *Scientific Reports* **11**, 13878 (2021).

Liu, Y., Lin-Lin Wang, Qiang Zheng, Zengle Huang, Xiaoping Wang, Miaofang Chi, Yan Wu, **B. C. Chakoumakos**, Michael A. McGuire, Brian C. Sales, Weida Wu, Jiaqiang Yan, Site mixing for engineering magnetic topological insulators. *Physical Review X* **11**, 021033 (2021).

Meier, W., **Chakoumakos, B.C.**, Okamoto, S., McGuire, M., Hermann, R., Samolyuk, G., Gao, S., Zhang, Q., Stone, M., Christianson, A., Sales, B., A catastrophic charge density wave in BaFe₂Al₉. *Chemistry of Materials* **33**, 8, 2855-2863 (2021).

Long, J. M., Richard A. Snow, Brenda M. Pracheil, **B. C. Chakoumakos**, Morphology and composition of Goldeye (Hiodontidae; *Hiodon alosoides*) otoliths. *Journal of Morphology* **282**, 511-519 (2021).

Liu, J.Y., J Yu, JL Ning, HM Yi, L Miao, LJ Min, YF Zhao, W Ning, KA Lopez, YL Zhu, T Pillsbury, YB Zhang, Y Wang, J Hu, HB Cao, **BC Chakoumakos**, F Balakirev, F Weickert, M Jaime, Y Lai, Kun Yang, JW Sun, N Alem, V Gopalan, CZ Chang, N Samarth, CX Liu, RD McDonald, ZQ Mao, Spin-valley locking and bulk quantum Hall effect in a noncentrosymmetric Dirac semimetal BaMnSb₂. *Nature Communications* **12**, 1-10 (2021).

Ding, L., Minseong Lee, Tao Hong, Zhiling Dun, Ryan Sinclair, Songxue Chi, Harish K. Agrawal, Eun Sang Choi, **B. C. Chakoumakos**, Haidong Zhou, H.B. Cao, Noncollinear magnetic structure and magnetoelectric coupling in buckled honeycomb Co₄Nb₂O₉: A single crystal neutron diffraction study. *Physical Review B* **102**, 174443 (2020).

Pianassola M., Loveday M., **Chakoumakos B.C.**, Koschan M., Melcher C.L., Zhuravleva M., Crystal growth and elemental homogeneity of the multicomponent rare-earth garnet (Lu_{1/6}Y_{1/6}Ho_{1/6}Dy_{1/6}Tb_{1/6}Gd_{1/6})₃Al₅O₁₂. *Crystal Growth and Design* **20**, 6769–6776 (2020).

Ding, L., Minseong Lee, Eun Sang Choi, Jing Zhang, Yan Wu, Ryan Sinclair, **Bryan C. Chakoumakos**, Yisheng Chai, Haidong Zhou, Huibo Cao, Large spin-driven dielectric response and magnetoelectric coupling in the buckled honeycomb Fe₄Nb₂O₉. *Physical Review Materials* **4**, 084403 (2020).

Dziaugys, A., Kyle Kelley, John Brehm, Alexander Poretzky, Tianli Feng, Sabine Neumayer, Marius Chyasnachyus, Eugene Eliseev, Juras Banys, Yulian Vysochanskii, Feng Ye, **Bryan C. Chakoumakos**, Michael A. Susner, Michael McGuire, Sergei Kalinin, Panchapakesan Ganesh, Sokrates Pantelides, Nina Balke, Anna Morozovska, Petro Maksymovych, Piezoelectric domain walls in van der Waals ferrielectric CuInP₂Se₆. *Nature Communications* **11**, 3623 (2020).

Boatner, L. A., **B.C. Chakoumakos**, P. Sudharshan Phani, S. N. Dryepontd, Austen Shaw, Jun Qu, Andrés E. Márquez Rossy, Edgar Lara-Curzio, Michael McGuire, J. A. Kolopus, Cryo-quenched Fe-Ni-Cr alloy decorative steel single crystals II: Alloy phases, structure, hardness, tensile, tribological, magnetic and electronic properties. *Journal of Alloys and Compounds* **835**, 155169 (2020).

Galicki, D., **B. C. Chakoumakos**, S. P. Ringer, Mehdi Eizadjou, C. J. Rawn, Keita Nomoto, S. S. Babu, On the formation of spherical metastable BCC single crystal spatter particles during selective laser melting. *Materialia* **9**, 100584 (2020).

Liu, J., Pengfei Liu, Kyle Gordon, Eve Emmanouilidou, Jie Xing, David Graf, **B.C. Chakoumakos**, Yan Wu, Huibo Cao, Dan Dessau, Qihang Liu, Ni Ni, Nontrivial topology in the layered Dirac nodal-line semimetal candidate SrZnSb₂ with distorted Sb square nets. *Physical Review B* **100**, 195123 (2019).

Roth, N., Andrew F. May, Feng Ye, **B. C. Chakoumakos**, Bo Brummerstedt Iversen, Magnetic correlations and structure in bixbyite across the spin-glass transition. *Physical Review B* **100**, 1444404 (2019).

Pracheil, B. M., Robert George, **B. C. Chakoumakos**, Significance of otolith calcium carbonate crystal structure diversity to microchemistry studies. *Reviews in Fish Biology and Fisheries* **29**, 569-588 (2019).

Chakoumakos, B. C., Brenda M. Pracheil, R. Seth Wood, Alison Loeppky, Gary Anderson, Ryan Koenigs, Ronald Bruch, Texture analysis of polycrystalline vaterite spherulites from Lake Sturgeon otoliths. *Scientific Reports* **9**, 1–5 (2019).

Song, Y., Huibo Cao, **B. C. Chakoumakos**, Yang Zhao, Aifeng Wang, C. Petrovic, Robert J. Birgeneau, Intertwined magnetic and nematic orders in semiconducting KFe_{0.8}Ag_{1.2}Te₂. *Physical Review Letters* **122**, 087201 (2019).

Loeppky, A., **B. C. Chakoumakos**, B. M. Pracheil, G. Anderson, Otoliths of sub-adult Lake Sturgeon, *Acipenser fulvescens*, contain aragonite and vaterite calcium carbonate polymorphs. *Journal of Fish Biology* **94**, 810–814 (2019).

Xue, Z.L., Anibal J. Ramirez-Cuesta, Craig M. Brown, Huibo Cao, **B. C. Chakoumakos**, Luke L. Daemen, Ashfia Huq, A. I. Kolesnikov, Eugene Mamontov, A. A. Podlesnyak, Xiaoping Wang, Neutron instruments for research in coordination chemistry. *European Journal of Inorganic Chemistry* **2019** (8), 1065-1089 (2019).

Cao, H.B., **B. C. Chakoumakos**, Katie Andrews, Yan Wu, R. A. Riedel, Jason Hodges, Wenduo Zhou, Ray Gregory, Bianca Haberl, G. W. Lynn, DEMAND, a Dimensional Extreme Magnetic Neutron Diffractometer at the High Flux Isotope Reactor. *Crystals* **9**, 5 (2019).

Stand, L., Mariya Zhuravleva, **Bryan Chakoumakos**, Hua Wei, Jesse Johnson, Victoria Martin, Matthew Loyd, Daniel Rutstrom, Will McAlexander, Yuntao Wu, Merry A. Koschan, Charles Melcher, Characterization of mixed halide scintillators: CsSrBrI₂:Eu, CsCaBrI₂:Eu and CsSrClBr₂:Eu. *Journal of Luminescence* **207**, 70-77 (2019).

Frontzek, M., K. M. Andrews, A. B. Jones, **B. C. Chakoumakos**, J. A. Fernandez-Baca, The Wide Angle Neutron Diffractometer Squared (WAND²) - Possibilities and Future. *Physica B* **551**, 464-467 (2018).

- Peterson, C., M. W. Swift, Zach Porter, R. J. Clément, Guang Wu, G. H. Ahn, S. J. Moon, **B. C. Chakoumakos**, J. P. C. Ruff, Huibo Cao, C. Van de Walle, S. D. Wilson, Sr₃Ir₂O₇F₂: Topochemical conversion of a relativistic Mott state into a spin-orbit driven band insulator. *Physical Review B* **98**, 155128 (2018).
- Frontzek, M. D., Whitfield, R., Andrews, K. M., Black, A. J., Bobrek, M., **Chakoumakos**, **B. C.**, Fernandez-Baca, J. A., WAND² - a versatile powder/single crystal diffractometer. *Review of Scientific Instruments* **89**, 092801 (2018).
- Coates, L., Cao, H.B., **Chakoumakos**, **B.C.**, Frontzek, M. D., Hoffmann, C., Kovalevskiy, A. Y., Liu, Y., Meilleur, F., dos Santos, A.M., Myles, D.A.A., Wang, X., Ye, F., A Suite-level Review of the Neutron Single-Crystal Diffraction Instruments at Oak Ridge National Laboratory. *Review of Scientific Instruments* **89**, 092802 (2018).
- Johnson II, J. A., Mariya Zhuravleva, Luis Stand, **B. C. Chakoumakos**, Yuntao Wu, Ian Greeley, Daniel Rutstrom, Merry Koschan, C. L. Melcher, Discovery of new compounds and scintillators of the A₄BX₆ family: Crystal structure, thermal, optical, and scintillation properties. *Crystal Growth and Design* **18**, 5220-5230 (2018).
- Wu, Y., Ian Greeley, Matthew Loyd, Luis Stand, Charles Melcher, **Bryan Chakoumakos**, Merry A. Koschan, Daniel J. Rutstrom, Crystal structure, optical and scintillation properties of self-activated Cs₄YbI₆. *Journal of Luminescence* **201**, 460-465 (2018).
- Roth, N., Andrew F. May, Feng Ye, **B. C. Chakoumakos**, Bo Brummerstedt Iversen, Model-free reconstruction of magnetic correlations in frustrated magnets. *IUCrJ* **5**, 410–416 (2018).
- Wu, Y., Dan Han, **B. C. Chakoumakos**, Hongliang Shi, Shiyu Chen, Mao-Hua Du, Ian Greeley, Matthew Loyd, Daniel J. Rutstrom, Luis Stand, Mariya Zhuravleva, Merry Koschan, C. L. Melcher, Zero-dimensional Cs₄EuX₆ (X = Br, I) all-inorganic perovskite single crystals for gamma-ray spectroscopy. *Journal of Materials Chemistry C* **6**, 6647-6655 (2018).
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