

MONDAY POSTER PRESENTATIONS

Advances in Neutron Facilities, Instrumentation and

SESSION AP1.04: Poster Session I: Advances in Neutron Facilities,
Instrumentation and Software I
Session Chair: Leland Harringer
Monday Afternoon, June 6, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

AP1.04.01

200 W Ultra-narrow Band Pump Laser Diode System [Aleksandr Rysnyanskiy](#), Vadim Smirnov, Oleksiy Mokhun and Alexei Glebov; OptiGrate Corp., United States

AP1.04.02

Optimization of the Guide Coating for the Manta Incident Beamline [Garrett E. Granroth](#), Adam Aczel, Travis J. Williams and Thomas Huegle; Oak Ridge National Laboratory, United States

AP1.04.03

CHES: A Direct Geometry Chopper Spectrometer Optimised to Study Small Scatterers [Gabriele Sala](#)¹, Martin Mourigal², Olivier Delaire³, Yang Zhang⁴, Nicholas Butch⁵, Raphael P. Hermann¹, Michael E. Manley¹, Andrew D. Christianson¹, Matthew Stone¹, Thomas Huegle¹, Dante Quirinale¹ and Jiao Lin¹; ¹Oak Ridge National Laboratory, United States; ²Georgia Institute of Technology, Georgia; ³Duke University, United States; ⁴University of Illinois at Urbana-Champaign, United States; ⁵National Institute of Standards and Technology, United States

AP1.04.04

MCViNE and Preliminary Design of STS Instruments [Jiao Lin](#)¹, Thomas Huegle², Matthew J. Frost², Gabriele Sala¹, Alexandru Stoica², Ovidiu Garlea², Hassina Z. Bilheux², Yaohua Liu¹, Changwoo Do², Shuo Qian¹, Barry Winn², Eugene Mamontov², Georg Ehlers², Stuart Calder², Joe Paddison², Fahima Islam², Huibo Cao², Ke An² and Leighton Coates¹; ¹Oak Ridge National Lab, United States; ²Oak Ridge National Laboratory, United States

AP1.04.05

CUPI2D: Complex, Unique and Powerful Imaging Instrument for Dynamics [Adrian Brugger](#)¹, Hassina Z. Bilheux² and [Jiao Lin](#)²; ¹Columbia University, United States; ²Neutron Scattering Division, United States; ³Oak Ridge National Lab, United States

AP1.04.06

The Larmor Phase Correction of MIEZE [Fankang Li](#) and Georg Ehlers; Oak Ridge National Laboratory, United States

AP1.04.07

Commissioning the New MacSANS Small Angle Neutron Scattering Instrument at the Canadian Neutron Beam Laboratory at the McMaster Nuclear Reactor [Devin Burke](#)¹, Patrick Clancy¹, Zin Tun² and Bruce D. Gaulin¹; ¹McMaster University, Canada; ²TVB Associates Inc., Canada

AP1.04.08

Design of a Multi-Analyzer Neutron Scattering Spectrometer Using Ray-Tracing Monte-Carlo Simulations [Adit Desai](#)¹, Martin Mourigal¹, Garrett E. Granroth², Travis J. Williams², Adam Aczel² and Barry Winn²; ¹Georgia Institute of Technology, United States; ²Oak Ridge National Laboratory, United States

AP1.04.09

Virtual Learning Resources for Education and Training in Neutron Scattering [Patrick Clancy](#)¹, Greg Van Gastel¹, Symphony Huang¹, Evan Smith¹, Yijia Zi¹, Taryn McMillan¹, Zahra Yamani², Drew Marquardt³, Young-June Kim⁴, Maikel Rheinstadter¹ and Bruce D. Gaulin¹; ¹McMaster University, Canada; ²Canadian Nuclear Laboratories, Canada; ³University of Windsor, Canada; ⁴University of Toronto, Canada

Soft Matter

SESSION CP1.03: Poster Session: Soft Matter
Session Chairs: John Riley and Javen Weston
Monday Afternoon, June 6, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

CP1.03.01

Understanding the Role of Topology on Deformation and Scission of Polymers in Dilute Solutions Under Extreme Shear Flows Using *In Situ* Neutron Scattering [Anukta Datta](#)¹, Xiaoyan Wang², Patrick Underhill² and Matthew Helgeson¹; ¹University of California, Santa Barbara, United States; ²Rensselaer Polytechnic Institute, United States

CP1.03.02

Analysis of Engineered Nafion Surfaces via Neutron Reflectometry [Natalie L. Schwab](#)^{1,2}, Yuanchao Li³, Trung van Nguyen³, Robert M. Briber¹ and Joseph A. Dura²; ¹University of Maryland, United States; ²National Institute of Standards and Technology, United States; ³University of Kansas, United States

CP1.03.03

Crystal, Liquid, or Gel: A Thermodynamic Framework for Phase Behavior in Dilute Protein Solutions with Increasing Salt Concentration [Brian Paul](#)¹, Susana Teixeira², Norman Wagner¹, Eric Furst¹ and Abraham Lenhoff¹; ¹University of Delaware, United States; ²National Institute of Standards and Technology, United States

CP1.03.04

Understanding the Role of Block Sequence on the Solution Aggregation of Polypeptoid Multi-Block Copolymers [Meng Zhang](#)¹, Yun Liu² and Donghui Zhang¹; ¹Louisiana State University, United States; ²NIST Center for Neutron Research, United States

CP1.03.06

Hofmeister Effect on Dynamics of Confined Water in Metal Ions Intercalated Graphene Oxide [Gobin R. Acharya](#)¹, Madhusudan Tyagi², Eugene Mamontov³ and Peter M. Hoffmann¹; ¹Wayne State University, United States; ²NIST Center for Neutron Research, United States; ³Oak Ridge National Laboratory, United States

Structural Materials and Engineering

SESSION FP1.01: Poster Session: Structural Materials and Engineering

Session Chairs: Jeffrey Bunn and Zhenzhen Yu
Monday Afternoon, June 6, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

FP1.01.01

Minimizing Helium Pressure Inhomogeneities Across Large Samples at Low Temperatures [Juscelino B. Leao](#); National Institute of Standard and Technology, United States

FP1.01.02

Development of Quantitative Texture Analysis Routines at the WAND² and HIDRA [Nate Peterson](#)¹, Christopher Fancher², Matthias D. Frontzek², Jeffrey Bunn², Edward A. Payzant², Ke An² and S. Agnew¹; ¹University of Virginia, United States; ²Oak Ridge National Laboratory, United States

WEDNESDAY POSTER PRESENTATIONS

Advances in Neutron Facilities, Instrumentation and Software

SESSION AP3.08: Poster Session II: Advances in Neutron Facilities, Instrumentation and Software II

Session Chair: Hassina Bilheux
Wednesday Afternoon, June 8, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

AP3.08.01

The Levitation Suite at ORNL [Dante Quirinale](#); Oak Ridge National Laboratory, United States

AP3.08.02

McStas Component Development at the Spallation Neutron Source and High Flux Isotope Reactor [Matthew J. Frost](#), Garrett E. Granroth, Thomas Huegle and Lee Robertson; Oak Ridge National Laboratory, United States

AP3.08.03

Maximizing Detector Count Rate and q-Range on Pin-Hole SANS Instruments at the NCNR [John G. Barker](#); National Institute of Standards and Technology, United States

AP3.08.04

Overview of the Polarized ³He Program at the Oak Ridge National Laboratory [Chenyang Jiang](#); Oak Ridge National Laboratory, United States

AP3.08.05

Real-Time Control and Feedback of Hyperspectral Neutron Computed Tomography at the Spallation Neutron Source [Shimin Tang](#)¹, Mohammad Samin Nur Chowdhury², Diyu Yang², Singanallur Venkatakrishnan¹, Charles Bouman², Gregory Buzzard, T² and Hassina Z. Bilheux¹; ¹Oak Ridge National Laboratory, United States; ²Purdue University, United States

AP3.08.06

Science-Driven Optimization of Neutron Instrumentation From Source to Detector [Christoph U. Wildgruber](#), Hugh O'Neill, Volker S. Urban, Shuo Qian, Serena Chen and Ken Herwig; ORNL, United States

AP3.08.07

Bragg Edge Energy Calibration for Time-of-Flight Neutron Spectroscopy [Daniel M. Pajerowski](#); Oak Ridge National Laboratory, United States

AP3.08.08

Larmor a Larmor Labeling TOF SANS Instrument [Jeroen Plomp](#)¹, Ad van Well¹, Robert Dalglish² and Catherine Pappas¹; ¹Delft University of Technology, Netherlands; ²ISIS, United Kingdom

AP3.08.09

Update on the Extended Q-Range Small-Angle Scattering Diffractometer at the SNS [Gergely Nagy](#), Changwoo Do, Carrie Y. Gao and William Heller; Oak Ridge National Laboratory, United States

Hard Condensed Matter

SESSION BP3.09: Poster Session: Hard Condensed Matter
Wednesday Afternoon, June 8, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

BP3.09.01

Magnetic Excitations in the Highly Frustrated fcc Iridate
K₂IrCl₆ Qiaochu Wang and Kemp Plumb; Brown University, United States

BP3.09.02

Fluctuating Pseudospin Dimers in J_{eff}-3/2 Cluster Mott Insulator Tsung-Han Yang¹, Tomoya Higo², Shinya Kawamoto², Joerg Neufeind³, Matthew Stone³, SuYin Wang⁴, Milinda Abeykoon⁵, Yu-Sheng Chen⁴, Satoru Nakatsui² and Kemp Plumb¹; ¹Brown University, United States; ²The University of Tokyo, Japan; ³Oak Ridge National Laboratory, United States; ⁴Argonne National Laboratory, United States; ⁵Brookhaven National Laboratory, United States

BP3.09.03

Temperature Dependence of Anharmonic Effects in NaBr by Inelastic Neutron Scattering and Machine Learning Interatomic Potentials Vladimir Ladygin¹, Claire N. Saunders¹, Camille Bernal¹, Michael E. Manley², Douglas L. Abernathy² and Brent Fultz¹; ¹California Institute of Technology, United States; ²Oak Ridge National Laboratory, United States

BP3.09.05

High-Field Low-Energy Spin Dynamics in the Kitaev QSL Candidate α -RuCl₃ Kiranmayi Dixit¹, Colin Sarkis², Barry Winn², Stephen Nagler², David Mandrus², Christian Balz² and Amab Banerjee¹; ¹Purdue University, United States; ²Oak Ridge National Laboratory, United States

BP3.09.06

Giant Doping Response of Magnetic Anisotropy in MnTe Duncan H. Moseley, Keith Taddei, David Parker, Randy Fishman and Raphael P. Hermann; Oak Ridge National Laboratory, United States

BP3.09.07

Unveiling the Magnetic Structure of the Topological Semimetal Co₃Sn₂S₂ with Spherical Neutron Polarimetry Jian Rui Soh¹, ChangJiang Yi², Ivica Zivkovic¹, Navid Qureshi³, Anne Stunault³, Bachir Ouladdiaf², Jose Alberto Rodriguez-Velamazán³, YouGuo Shi⁴, Henrik M. Ronnow¹ and Andrew Boothroyd⁵; ¹EPFL, Switzerland; ²Max Planck Institute for Chemical Physics of Solids, Germany; ³Institut Laue-Langevin, 71 Avenue des Martyrs, France; ⁴Institute of Physics, Chinese Academy of Sciences, China; ⁵University of Oxford, Clarendon Laboratory, United Kingdom

BP3.09.08

Magnetic Structures of High-Pressure Phases of Heavy Lanthanides using a Spallation Neutron Source Christopher S. Perreault¹, Jamie J. Molaison², Yogesh Vohra¹ and Antonio Dos Santos²; ¹University of Alabama at Birmingham, United States; ²Oak Ridge National Laboratory, United States

BP3.09.10

Quantum Disordered State of Magnetic Charges in Nanoengineered Honeycomb Lattice George Yumnam¹, Yiyao Chen^{2,1}, Jiasen Guo¹, Jong Keum³, Valeria Lauter³, Pousali Ghosh¹ and Deepak K. Singh¹; ¹University of Missouri, Columbia, United States; ²Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences, China; ³Oak Ridge National Laboratory, United States

BP3.09.11

Q-dependent Collective Relaxation Dynamics of Glass-Forming Liquid Ca_{0.4}K_{0.6}(NO₃)_{1.4} Investigated by Wide-Angle Neutron Spin-Echo Peng Luo¹, Yanqin Zhai², Peter Falus³, Victoria Garcia-Sakai⁴, Monika Hartl⁵, Maiko Kofu⁶, Kenji Nakajima⁶, Antonio Faraone⁷ and Yang Zhang²; ¹University of Pennsylvania, United States; ²University of Illinois at Urbana-Champaign, United States; ³Institut Laue-Langevin, France; ⁴ISIS Neutron and Muon Facility, United Kingdom; ⁵European Spallation Source, Sweden; ⁶J-PARC Center, Japan; ⁷National Institute of Standards and Technology, United States

BP3.09.12

Anomalous Hall Effect due to Topological Magnetic Charge Correlation in Permalloy Honeycomb Lattice Jiasen Guo¹, Ashutosh Dahal¹, George Yumnam¹, Yiyao Chen², Pousali Ghosh¹, Valeria Lauter³, Vitalii Dugaev⁴, Arthur Ernst^{5,6} and Deepak K. Singh¹; ¹University of Missouri, Columbia, United States; ²Suzhou Institute of Nano-Tech and Nano-Bionics, China; ³Oak Ridge National Laboratory, United States; ⁴Rzeszow University of Technology, Poland; ⁵Johannes Kepler Universität, Austria; ⁶Max-Planck-Institut für Mikrostrukturphysik, Germany

BP3.09.13

Structure, Dynamics of a Two-Dimensional Metal Halide Perovskite Haritha Sindhu Rajeev¹ University of Virginia, United States

Biology, Biophysics and Biotechnology

SESSION DP3.04: Poster Session: Biology, Biophysics and Biotechnology

Session Chairs: Elizabeth Kelley and Amy Xu
Wednesday Afternoon, June 8, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

DP3.04.01

Effect of Cholesterol on the Elastic and Viscous Properties of Saturated Lipid Bilayers – A Neutron Spin Echo Study Kuo-Chih Shih¹, Elizabeth Kelley², Paul D. Butler², Norman Wagner¹ and Michihiro Nagao^{2,3,1}; ¹University of Delaware, United States; ²National Institute of Standards and Technology, United States; ³University of Maryland, United States

DP3.04.02

Effects of 3-Dehydroshikimate Dehydratase Expression Levels in the Organization of Cellulose Microfibrils in Poplar Mutants Manjula P. Senanayake Mudiyanse¹, Chien-Yuan Lin², Aymerick Eudes², Hugh O'Neill¹ and Sai Venkatesh Pingali¹; ¹Oak Ridge National Laboratory, United States; ²Joint Bioenergy Institute, United States

DP3.04.03

Calcium Carbonate Polymorphism and Microstructure in Fish Otoliths Bryan Chakoumakos¹, Brenda M. Pracheil¹, R. Seth Wood², Alison Loeppky³, Kassandra M. Merks⁴ and W. G. Anderson⁴; ¹Oak Ridge National Laboratory, United States; ²Washington University in St. Louis, United States; ³North/South Consultants Inc, Canada; ⁴University of Manitoba, Canada

Materials Chemistry and Energy

SESSION EP3.03: Poster Session: Materials Chemistry and Energy
Wednesday Afternoon, June 8, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

EP3.03.01

Time-Resolved Neutron Reflectometry Study of Li-Mediated Electrochemical Nitrogen Reduction Mathieu Doucet¹, Sarah J. Blair^{2,3}, Jim Browning¹, Hanyu Wang¹, Candice Halbert¹, Adam Nielander³, Alessandro Gallo³ and Thomas F. Jaramillo^{2,3}; ¹Oak Ridge National Laboratory, United States; ²Stanford University, United States; ³SLAC National Accelerator Laboratory, United States

EP3.03.02

A Room temperature Polar and Weak-ferromagnetic Oxide with Low Dielectric Loss Nagamalleswari Katragadda¹, Pranab Mandal¹, Premakumar Yanda², A Sundaresan², S. D. Kaushik³, Weiguo Zhang⁴, P. Shiv Halasyamani⁴ and Alicia M. Manjon Sanz⁵; ¹SRM University, India; ²Jawaharlal Nehru Centre for Advanced Scientific Research, India; ³UGC-DAE Consortium for Scientific Research Mumbai Centre, R-5 Shed, BARC, India; ⁴University of Houston, United States; ⁵Oak Ridge National Laboratory, United States

EP3.03.03

Phonon Lifetimes and Mode Softening in Cubic Cs₂AgBiBr₆ Zihan Zhang¹, Nicholas Weadock², Peter Gehring³, Julian Vigil⁴, Tao Hong⁵, Johan Klarbring⁶, Adam Slavney⁷ and Michael Toney²; ¹University of Colorado, Boulder, United States; ²University of Colorado Boulder, United States; ³National Institute of Standards and Technology, United States; ⁴Stanford University, United States; ⁵Oak Ridge National Laboratory, United States; ⁶Linköping University, Sweden; ⁷Harvard University, United States

EP3.03.04

Layered Double Hydroxide Intercalated Iron Selenide Heterostructures Lahari Balisetty, Brandon Wilfong and Efrain E. Rodriguez; University of Maryland, College Park, United States

EP3.03.05

Ratiometric Thermometry Using Thermochromic Tb³⁺:Mn⁴⁺:Na₄Mg(WO₄)₃ Phosphors Dinesh K. Amarasinghe and Federico A. Rabuffetti; Wayne State University, United States

EP3.03.06

Structural Resolution and Mechanistic Insight into Hydrogen Adsorption in Flexible ZIF-7 Ryan Klein^{1,2}, Sarah Shulda², Craig M. Brown¹ and Michael McGuirk³; ¹NIST Center for Neutron Research, United States; ²National Renewable Energy Laboratory, United States; ³Colorado School of Mines, United States

EP3.03.07

Structure Investigation of the Transition Between LnMnFeO₄ and LnMnFeO_{4.5} (Ln=Y, Yb, Lu) Tianyu Li and Efrain E. Rodriguez; University of Maryland, United States

EP3.08.08

Local Ordering of Cations in Thermoelectric Alloys Vanessa Meschke¹, Andrew Novick¹, Erin Toberer¹; Physics, Colorado School of Mines, United States

Emerging Applications of Neutron Scattering in Engineering, Arts and Sciences

SESSION HP3.04: Poster Session: Emerging Applications in Neutron Scattering—Machine Learning and Data Science
Session Chairs: Tyler Martin and Alan Tennant
Wednesday Afternoon, June 8, 2022
5:30 PM - 7:30 PM
UMC Center Ballroom 210

HP3.04.01

Measuring Coefficients of Spin-Spin Correlation Functions on Quantum Hardware Norhan M. Eassa¹, Zoe Holmes², Jeffrey Cohn³, Andrew T. Sornborger², Joe Gibbs², Gavin L. Hester¹, Paul Kairys⁴, Bilal Khalid¹ and Arnab Banerjee¹; ¹Purdue University, United States; ²Los Alamos National Laboratory, United States; ³IBM Almaden Research Center, United States; ⁴Oak Ridge National Laboratory, United States