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Title: Lubricant Potential of Select Brassica Oils

Author(s): Johanna Clancy, Department of Food and Bioproduct Sciences, University of Saskatchewan, Jigang Zhou, Canadian Light Source, Jeffrey Cutler, Canadian Light Source, Martin Reaney, Department of Food and Bioproduct Sciences, University of Saskatchewan

Abstract # 2

Title: Comparison of FEFF and StoBe Simulations on X-ray Absorption Near Edge Spectra of $[\text{MoO}_x\text{S}_{4-x}]_2^-$ ($x=0, 1, 2, 3, 4$)

Author(s): Juxia Fu¹, Manuel Gnida¹, Ruth E. Hoffmeyer¹, R. Stephen Reid², Darina Slamova², Ingrid J. Pickering¹, Graham N. George¹. ¹Department of Geological Science, University of Saskatchewan. ² Department of Chemistry, University of Saskatchewan.

Abstract # 3

Title: Soft X-ray Absorption Spectroscopy of Fe – , Fe – (NH=NH), Fe – (NH₂-NH₂) Complexes – Experiments and DFT Calculations

Author(s): Juxia Fu, Department of Applied Science, University of California, Davis Simon J. George, Advanced Biological and Environmental X-ray Facility, LBNL Stephen P. Cramer, Department of Applied Science, University of California, Davis

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Title: STXM studies of a novel syntrophic sulphur metabolising consortia at the S 1s and S 2p edges

Author(s): Adam P Hitchcock, Martin Obst, BIMR, McMaster University; Kelsey Norlund, Lesley Warren, Geography and Earth Sciences, McMaster University; and Jian Wang, McMaster and CLSI

Abstract # 5

Title: X-ray Magnetic Circular Dichroism of individual magnetosomes in a magnetotactic bacterium (MV-1) measured by Scanning Transmission X-ray Microscopy

Author(s): Karen P. Lam¹; Adam P. Hitchcock¹; Martin Obst¹; John R. Lawrence²; George D.W. Swerhone²; Tolek Tylliszczak³; Chithra Karunakaran⁴; Jian Wang⁴; Dennis Bazylinski⁵; Ulysses Lins⁶. ¹Brockhouse Institute for Materials Research, McMaster University, Hamilton, ON, Canada. ²Environment Canada, National Water Research Institute, Saskatoon, SK Canada. ³ Advanced Light Source, Lawrence-Berkeley National Lab, Berkeley, CA, USA. ⁴Canadian Light Source Inc., Saskatoon, SK, Canada. ⁵School of Life Sciences, University of Nevada, Las Vegas, NV, USA. ⁶Instituto de Microbiologia, Universidade Federal do Rio de Janeiro, RJ, Brazil

- Abstract # 6
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Author(s): Sougat Misra - Department of Biology, University of Saskatchewan Som Niyogi - Department of Biology, University of Saskatchewan DEREK PEAK - Department of Soil Science, University of Saskatchewan
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Author(s): Soo In Yang, Geological Sciences, University of Saskatchewan John R. Lawrence, National Hydrology Research Center, Environment Canada Ingrid J. Pickering, Geological Sciences, University of Saskatchewan
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Author(s): Katherine R. Ball¹; Francesca Sampieri¹; J. Manuel Chirino-Trejo²; Lawrence R. Bernstein³; Robert I.R. Blyth⁴; Don L. Hamilton¹; T.K. Sham⁵; Patricia M. Dowling¹; Julie Thompson⁴. ¹Department of Veterinary Biomedical Sciences, University of Saskatchewan. ²Department of Veterinary Microbiology, University of Saskatchewan. ³Menlo Park, CA. ⁴Canadian Light Source. ⁵Department of Chemistry, University of Western Ontario.
- Abstract # 9
Title: **Diffraction Enhanced Imaging of Bone Architecture: A Preliminary Study**
Author(s): David M.L. Cooper¹; Brian Bewer²; Sheldon Wiebe³; Tomasz W. Wysokinski⁴; Dean Chapman¹. ¹Anatomy and Cell Biology, University of Saskatchewan. ²Physics and Engineering Physics, University of Saskatchewan. ³Medical Imaging, University of Saskatchewan. ⁴Canadian Light Source.
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Title: **Comparison of Molecular Structure (Chemical Make-up) of Two Varieties of Corn Using Synchrotron Radiation Based Fourier Transform Infrared (SRFTIR) Microspectroscopy**
Author(s): Daalkhaijav Damiran and Peiqiang Yu Department of Animal and Poultry Science, University of Saskatchewan, 51 Campus Drive, Saskatoon, SK S7N 5A8
- Abstract # 11
Title: **Protein Spectroscopy Analysis in Cree Leukodystrophy**
Author(s): Huntsman R., Division of Pediatric Neurology. University of Saskatchewan Karunakaran C., Canadian Light Source, Saskatoon Robinson C. Department of Pathology, Saskatoon Health Region

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Title: Protein Spectroscopy Analysis in Cree Leukodystrophy

Author(s): Huntsman, Richard. Department of Pediatrics, University of Saskatchewan, Canada
Karunakaran, Chithra. Canadian Light Source Saskatoon, Canada
Robinson, Christopher. Department of Pathology. Saskatoon Health Region

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Title: Where Does All the Mercury Go? Tracing the Mercury Whereabouts in Zebrafish with X-Ray Fluorescence Imaging

Author(s): Malgorzata Korbas¹; Patrick H. Krone²; Ingrid J. Pickering¹; University of Saskatchewan, Graham N. George¹. ¹Department of Geological Sciences, University of Saskatchewan. ²Department of Anatomy and Cell Biology, University of Saskatchewan.

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Title: Studies of Arsenic and Selenium metabolism using X-ray Absorption Spectroscopy

Author(s): Dongmei Liu, Ingrid J. Pickering and Graham N. George Department of Geological Sciences, University of Saskatchewan, Saskatoon

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Title: Mapping Inorganic Mercury in Zebrafish Using X-Ray Fluorescence Imaging

Author(s): Tracy C. MacDonald¹; Malgorzata Korbas²; Ingrid J. Pickering²; Patrick H. Krone³ and Graham N. George². ¹Department of Toxicology, University of Saskatchewan. ²Department of Geological Sciences, University of Saskatchewan. ³Department of Anatomy and Cell Biology, University of Saskatchewan.

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Title: CIHR Training Program in Health Research Using Synchrotron Techniques (THRUST)

Author(s): Ingrid J. Pickering and Graham N. George, Geological Sciences, University of Saskatchewan L. Dean Chapman and Helen Nichol, Anatomy and Cell Biology, University of Saskatchewan Louis T. J. Delbaere, Biochemistry, University of Saskatchewan William Thomlinson, Physics and Engineering Physics, University of Saskatchewan

Abstract # 17

Title: Copper and the Inferior Olivary Nucleus

Author(s): Bogdan F.Gh. Popescu¹; Ni Ao¹; Graham N. George^{1,2}; Helen Nichol¹. ¹Dept. of Anatomy and Cell Biology, University of Saskatchewan. ²Dept. of Geological Sciences, University of Saskatchewan.

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Title: **Synchrotron microanalysis of gallium compounds as a therapeutic alternative in treating *Lawsonia intracellularis* proliferative enteritis.**
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Title: **Characterization of mercury leached from dental amalgam: spectroscopic investigation**
Author(s): Satya P. Singh¹; Jay Hoover²; Ingrid J. Pickering¹; Graham N. George¹. ¹Department of Geological Sciences, University of Saskatchewan. ²College of Dentistry, University of Saskatchewan.
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Author(s): Peiqiang Yu^{1*}, Dasen Liu², Daalkhaijav Damiran¹. ¹ Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, 51 Campus Drive, Saskatoon, Canada, S7N 5A8. ² Visiting Professor from College of Animal Science and Technology, Northeast Agricultural University, China.
- Abstract # 21
Title: **Bent Laue X-ray Fluorescence Imaging of Manganese in Biological Tissues – Preliminary Results**
Author(s): Ying Zhu¹; L. Dean Chapman²; Helen Nichol². ¹Division of Biomedical Engineering, University of Saskatchewan, Saskatoon, SK Canada. ²Department of Anatomy and Cell Biology, University of Saskatchewan, Saskatoon, SK Canada.
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Author(s): Leslie D. Burtneck, Chenguang Jiang and Anantasak Loonchanta, Department of Chemistry and Centre for Blood Research, Life Sciences Institute, University of British Columbia, Canada, and Sakesit Chumnarnsilpa and Robert C. Robinson, Institute of Molecular and Cell Biology, A*STAR, Singapore
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Author(s): Wing Yiu Chan¹, Alexei Savchenko¹, Alexander F. Yakunin¹, Elizabeth A. Edwards², Emil F. Pai³. ¹Banting and Best Department of Medical Research, University of Toronto. ²Department of Chemical Engineering and Applied Chemistry, University of Toronto. ³Department of Biochemistry, University of Toronto; Division of Cancer

Genomics & Proteomics, Ontario Cancer Institute and Departments of Medical Biophysics and Molecular Genetics, University of Toronto.

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Author(s): Sarathy Karunan Partha and David A. R. Sanders Department of Chemistry, University of Saskatchewan

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Author(s): NS Sidhu and LTJ Delbaere, Department of Biochemistry, University of Saskatchewan, Saskatoon, SK, S7N 5E5, Canada

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Title: **Crystallographic studies on IDH from *Bacillus subtilis***

Author(s): Karin E. van Straaten, David R. J. Palmer and David A. R. Sanders Department of Chemistry, University of Saskatchewan

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Author(s): L. Arnelao¹, L. Zuin², A. Caneschi³, M. Mannini³, F. Pineider³, R. Sessoli³, A. Cornia⁴, C. Danieli⁴, L. Margheriti³, D. Gatteschi³, E. Tondello¹ and T.K. Sham⁵. ¹ISTM-CNR, University of Padova, INSTM RU of Padova, Italy. ²Canadian Light Source, Saskatoon, Canada. ³Department of Chemistry, University of Firenze, INSTM RU of Firenze, ISTM-CNR URT of Firenze, Italy. ⁴Department of Chemistry, University of Modena and Reggio Emilia, INSTM RU of Modena Italy. ⁵University of Western Ontario, London, Canada

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Author(s): Peter E. R. Blanchard, Department of Chemistry, University of Alberta. Ronald G. Cavell, Department of Chemistry, University of Alberta. Arthur Mar, Department of Chemistry, University of Alberta.

Abstract # 29

Title: **Electronic Structure and Band Gap Determination of Spinel Nitrides**

Author(s): T.D. Boyko¹, P.F. McMillan², E. Bailey² and A. Moewes¹. ¹Department of Physics and Engineering Physics University of Saskatchewan Saskatoon Saskatchewan, Canada. ²Department of Chemistry University College London London, United Kingdom.

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Title: **MAX3D – Visualizing Diffraction Volumes**

Author(s): Jim Britten, Chemistry and BMR, McMaster Univ Weiguang Guan, RHPCS,
McMaster Univ Yang Ren, 11-ID-C, Argonne National Laboratory, APS

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Author(s): Ziqiu Chen and Jennifer van Wijngaarden Department of Chemistry, University of Manitoba, Winnipeg MB R3T 2N2 Canada
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Title: Formation of Mn²⁺ at the surface of Ca doped LaMnO₃ probed by soft X-ray absorption spectroscopy.
Author(s): S. Choudhury¹; E.Z. Kurmaev²; W. Jiang³; G. Williams³; Y. Mukovskii⁴; A. Moewes¹; G. S. Chang¹. ¹Department of Physics, University of Saskatchewan, Canada. ²Institute of Metal Physics, Russian Academy of Sciences-Ural Division, 620041 Yekaterinburg, Russia. ³Department of Physics and Astronomy, University of Manitoba, Canada. ⁴Moscow State Steel and Alloys Institute, Moscow 119049 Russia.
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Author(s): Priyabrat Dash and Robert W. J. Scott* Department of Chemistry, University of Saskatchewan, 110 Science Place, SK, S7N 5C9
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Author(s): Mario A. Gomez, L. Becze, J. F. Leberre and H. Assaaoudi (1) Mining and Materials Engineering, McGill University. J.N. Cutler and R.I.R Blyth (2) Industrial Science and SGM - Canadian Light Source Inc
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Author(s): Andrew P. Grosvenor^{1,2}, Farshid Ramezanipour², Shahab Derakhshan², and John E. Greedan². ¹Department of Chemistry, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 5C9 Canada. ²Department of Chemistry and Brockhouse Institute for Materials Research, McMaster University, Hamilton, Ontario, L8S 4M1 Canada.
- Abstract # 36
Title: Probing the Electronic Structure of Multiferroic Materials with Soft X-ray Spectroscopy
Author(s): J. A. McLeod¹; R. G. Wilks¹; A. Moewes¹; Z.V. Pchelkina²; L. D. Finkelstein²; E. Z. Kurmaev²; I. V. Solovyev²; A. A. Belik³. ¹Dept. of Physics and Engineering Physics, University of Saskatchewan. ²Institute of Metal Physics, Russian Academy of Sciences-Ural Division, Russia. ³Advanced Nano Materials Laboratory, National Institute for Materials Science, Japan.

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Title: **XAFS of Thin Film Nickel Silicides**
Author(s): Kevin Miller, Physics, University of Guelph Ning Chen, HXMA, Canadian Light Source Christian Lavoie, T. J. Watson Research Center, Yorktown Heights, NY, IBM De-Tong Jiang, Physics, University of Guelph
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Author(s): A. Padmanabhan, P. A. Thorn, T. J. Reddish Physics Department, University of Windsor, ON, Canada, N9B 3P4 L. Zuin, M. A. MacDonald Canadian Light Source, 101 Perimeter Road, University of Saskatchewan, Saskatoon, SK, Canada, S7N 0X4 2 Canadian Light Source, 101 Perimeter Road, University of Saskatchewan, Saskatoon, SK, Canada, S7N 0X4
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Author(s): SMK Brunet, SSSC, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; W Chen, Department of Physics, University of Texas at Arlington, Arlington, USA; A Joly, PNNL, Richland, Washington, USA; RIR Blyth, TG Regier, J Vogt, JC Bergstrom, L Dallin, M DeJong, Canadian Light Source Inc., Saskatoon, Saskatchewan, R. Sammynaiken, SSSC, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; Canada
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Author(s): Jun Shi (Department of Physics, University of Guelph), Detong Jiang (Department of Physics, University of Guelph), Tom Regier (Canadian Light Source), Xiaorong Qin (Department of Physics, University of Guelph).
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Author(s): Samantha Van Nest, Cody van Dijk, Ziqiu Chen, John Sorensen, Jennifer van Wijngaarden, Department of Chemistry, University of Manitoba.
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Author(s): P. R. J. Wilson; T. Roschuk; J. Li; O. H. Y. Zalloum; J. Wojcik; P. Mascher, Department of Engineering Physics and Centre for Emerging Device Technologies, McMaster University

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Author(s): Uday Lanke Chemistry, University of Saskatchewan, 110 Science Place, Saskatoon, S7N 5C9 Chithra Karunakaran Canadian Light Source Inc, 101 Perimeter Road, Saskatoon, S7N 0X4 Stephen Urquhart Chemistry, University of Saskatchewan, 110 Science Place, Saskatoon, S7N 5C9
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Title: **Photoemission Electron Microscopy and Atomic Force Microscopy of Phase-Separated Langmuir-Blodgett Monolayer Thin Films**
Author(s): S.L. Christensen, U.D. Lanke, B.M. Haines, S.E. Qaqish, M.F. Paige and S.G. Urquhart Department of Chemistry, University of Saskatchewan, 110 Science Place, Saskatoon, Saskatchewan, Canada
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Author(s): Elizabeth Robertson, Department of Archaeology and Anthropology, University of Saskatchewan, liz.robertson@usask.ca. Robert Blyth, Canadian Light Source, robert.blyth@lightsource.ca
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Author(s): Justin J. Tse¹, Cheryl I.E. Wiramanaden², and Ingrid J. Pickering¹. ¹Department of Geological Sciences, University of Saskatchewan, 114 Science Place, Saskatoon, SK, S7N 5E2, ²Toxicology Centre, University of Saskatchewan, 44 Campus Drive, Saskatoon, SK, S7N 5B3
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Author(s): Renfei Feng, Dylan Maxwell, Dioni Medrano, Elder Matias, Ru Igarashi and Glenn Wright CLS
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Author(s): Stewart McIntyre, Marina Fuller, Jinhui Qin, Nataniel Sherry, Michael Bauer, University of Western Ontario, Chris Armstrong and John Haley, IBM Canada

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Author(s): L. Quaroni, CLS T. Zlateva, Dept. of Biochemistry, Univ. of Saskatchewan, E. Normand, CLS K. Goff, CLS T. Pedersen, CLS
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Author(s): T. Z. Regier, Department of Physics and Engineering Physics, University of Saskatchewan//Canadian Light Source, Inc. J. Shi, Department of Physics, University of Guelph J. S. Tse, Department of Physics and Engineering Physics, University of Saskatchewan D. T. Jiang, Department of Physics, University of Guelph
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Title: Scientific Highlights from the Soft X-ray Spectromicroscopy Facility at the Canadian Light Source
Author(s): C. Karunakaran¹, J. Wang¹, Y. Lu¹, U.D. Lanke², S.G. Urquhart², A.P. Hitchcock³.
¹Canadian Light Source Inc., University of Saskatchewan, 101 Perimeter Road, Saskatoon, SK, Canada S7N 0X4. ²Chemistry Department, University of Saskatchewan, 110 Science Place, Saskatoon, SK, Canada S7N 5C9. ³Chemistry Department and B.I.M.R, McMaster University, 1280 Main St. W., Hamilton, ON, Canada L8S 4M1

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Author(s): D. Chevrier¹, C. Jin¹, Y.F. Hu¹, G. Wright¹, R. Igarashi¹, A. Sitnikov¹, B. Yates¹, E. Hallin¹ and T.K. Sham². ¹Canadian Light Source, University of Saskatchewan, Saskatoon, SK, S7N 0X4, Canada. ²Department of Chemistry, The University of Western Ontario, London, Ontario, N6A 5B7, Canada.
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Author(s): Feizhou He, David Muir, Siyue Chen, Tony Wilson, Canadian Light Source George Sawatzky Univ. of British Columbia Alexander Moewes, Univ. of Saskatchewan David Hawthorn, University of Waterloo
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Author(s): Venkat Subramanian (a), Sven Achenbach (b,c), David Klymyshyn (b,c), Garth Wells (a), Teodor Veres (d) (a) Canadian Light Source, Canada (b) University of Saskatchewan, Canada (c) TRILabs, Canada (d) National Research Council – Industrial Materials Institute, Canada
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Author(s): Elizabeth M. Andrucson, Natasha Pitt and Dr. Kingsley Donkor, Department of Chemistry, Thompson Rivers University
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Author(s): Matthew Getzlaf, Ryan Geisler, Levi Beingessner, Brittney Weed, Jenna Miller, Nathan Kirkpatrick, Scott Armstrong, Travis Nestman, Nolan Beitel, Kaitlin Granger, Amy Wheeler, Kristi Cobbe, Brittany Ludwar, Alyssa Schick, Jordan Stevens, Kendal Dombowsky, Dereck Mondor, Ashley Chicoine, Jesse Bolianatz, Larry Bogdan, (Avonlea School); Tracy Walker, Amy Friesen, Luca Quaroni, Chithra Karunakaran, (CLS staff); Hugo Cota-Sanchez , Deusa Deise (Biology, Univ. of Saskatchewan).
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Author(s): C. M. Minielly, P. Suryavanshi, S. Suryavanshi, M. Waseem, V. Glass, R. Peng, D. Parekh, A. Son, W. Tu J. M. Gregoire, A. Gillespie , T. Walker, T. Regier, C. Ryan, L. Zuin, R.I.R. Blyth

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Author(s): Yijing Guan, Division of Biomedical Engineering, University of Saskatchewan
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Title: Investigating Natural and Synthetic Chelates
Author(s): Thomas Russell, Alex Mulvenna, Rachel Feddema, Glenn Hamonic, Jeremy Gosselin, Evan Stack, Erin Kelly¹; Robert Blyth²; Duncan Smith³; Tracy Walker⁴.
¹Bishop Grandin High School Students. ²Beamline Scientist, CLS. ³Bishop Grandin High School Physics Teacher. ⁴Educational Outreach Coordinator, CLS.
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Title: Spectroscopic Study Of The 11102-10002 Band Of Pure Carbon Dioxide For Atmospheric Remote Sensing Using Fourier Transform Spectrometer
Author(s): Amr Ibrahim¹; Adriana Predoi-Cross²; V. Malathy Devi³; D. Chris Benner³; Brant Billingham⁴; Phil Teillet². ¹Department of Engineering Physics and Centre for Emerging Device Technologies, McMaster University. ²University of Lethbridge, Department of Physics and Astronomy, 4401 University Drive, Lethbridge, AB, T1K 3M4, Canada. ³Department of Physics, The College of William and Mary, Box 8795, Williamsburg, VA, 23187-8795, USA. ⁴Canadian Light Source, 101 Perimeter Road, Saskatoon SK S7N 0X4 Canada.
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Author(s): J.W. Li; W.J. Zhang; X.B. Chen, Division of Biomedical Engineering, University of Saskatchewan
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Author(s): K. Wanis, T. Hintz, P. Machnee, B. Reusch, B. Young, B. Teichroeb, R. Elliott, W. Clark – Yorkton Regional High School, J. Hay – Parkland College T. Walker, R. Blyth – Canadian Light Source, L. Robertson, A. Splawinski, K. Steuber, K. Sayers, L. Theoret – University of Saskatchewan
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Author(s): F. Opio¹, H. E. Jamieson², and J. Peacey¹. 1. Department of Mining Engineering, 2. Department of Geological Sciences and Geological Engineering, Queen’s University, Kingston, Ontario.

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Title: Effect of Nanoparticles on Pseudomonas aeruginosa

Author(s): Miranda Mark³, Ryan Tomiyama³, Gloria Hooshmand³, Dan Stasiuk³, Tina Rioux³, Jeff Warner, Adrienne Woytowich, Jamie Van Cleemput, Tracy Walker, ¹Canadian Light Source Inc., University of Saskatchewan ²College of Agriculture and Bioresources, University of Saskatchewan ³Evan Hardy Collegiate, Saskatoon, SK

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Title: Far-IR Differentiation of Yeast Headspace Gases

Author(s): Daniel Weng, Jack Gao, Cathy Lian, Yerusha Nuh, Charlene Leung, Kostandin Dhimitri, Student, Victoria Park Collegiate Institute. Sarah Torrie, Felipe Almeida, Teacher, Victoria Park Collegiate Institute. Tracy Walker, Brant Billinghamurst, Canadian Light Source.

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Title: Students on the Beamlines: Science Education or Scientific Research?

Author(s): Tracy Walker, Educational Outreach, CLS