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### **EDUCATION**

- 1995 Ph.D. (Physics), McGill University, Montréal, Canada. (Dean's Honour List)  
*"Intensity fluctuation spectroscopy with coherent X-rays."*  
Supervisor: Professor Mark Sutton.
- 1990 M.Sc. (Physics), University of Waterloo, Waterloo, Ontario, Canada.  
*"A study of high purity  $Cd_xSe_{1-x}$  vacuum deposited thin films."*  
Supervisor: Professor D.E. Brodie.
- 1987 B.Sc. (Physique), Université Laval, Ste-Foy, Canada.

### **ACADEMIC AWARDS**

- 1996-97 Natural Science and Engineering Research Council of Canada (NSERC)  
postdoctoral fellowship.
- 1992-93 Fonds aux Chercheurs et à l'Aide à la Recherche du Québec (FCAR)  
doctoral fellowship and McGill University Carl Reinhart Fellow.
- 1990-92 NSERC doctoral scholarship.
- 1988-90 NSERC master's scholarship and University of Waterloo fellowship.
- 1987-86 NSERC summer student scholarships, at the University of Toronto.

### **PROFESSIONAL MEMBERSHIP AND SERVICE**

- 1989- Member of the Canadian Association of Physicists
- 1991- Member of the Canadian Institute for Synchrotron Radiation
- 1991- Member of the American Physical Society
- 1989- Member of the Materials Research Society
- 1999- Member of the American Association for the Advancement of Science
- Feb. 2002- Co-chair, APS Technical Working Group  
Apr. 2006

2003-2006 Chair, APS General Users Review Panel on Instrumentation

2006- Argonne Center for Nanomaterials Proposal Review Panel

2007-2014 Ultrafast Special Interest Group, APS, Webmaster and co-organizer

2008 External reviewer, Director Review of LUSI, LCLS, SLAC March 3-5, 2008

2008 Future of X-ray Operation and Research (XOR) Committee

2009 Advanced Photon Source Upgrade Technical Advisory committee

May 2010- Advanced Photon Source User Organization Steering Committee  
2013

Aug. Advanced Photon Source General User Program Advisory Committee  
2011-2012

Aug. External reviewer of the Dynamic Compression Sector Director's Review.  
2011-2013

2012 Reviewer of the NE-CAT Microfocusing Optics Upgrade.

Jul. 2014- Advanced Photon Source General User Program Review Panel  
Jul. 2016

Jul. 2016- NE-CAT Technical Advisory Committee member for NIH grant.

## WORK AND TEACHING EXPERIENCE

Aug. **Physicist, X-ray Science Division, Advanced Photon Source, Argonne National**  
2011- **Laboratory** Since 2014, I support users on beamline 8-ID, which specializes on coherent x-ray scattering and x-ray photon correlation spectroscopy. From 2011-2013, I was the Technical Lead for the three Ultrafast beamlines in the short-pulse APS-Upgrade project, and I was a beamline scientist at Sector 7 as stated below.

2004-2011 **Beamline Scientist, X-ray Science Division, Advanced Photon Source, Argonne National Laboratory (Associate Research Scientist level)**. My responsibilities as Sector 7 Coordinator included the daily administration of the 7-ID beamline operation, the co-supervision of four PhD scientists and a scientific associate. In 2008-2009, I worked on the completion of the 7-BM beamline which focuses on time-resolved microfocused radiography. I also continued my operation and research role at Sector 7 started in 1998.

1998-2004 **Senior Research Associate in the Physical Sciences II, Department of Physics, University of Michigan**. As a beamline Scientist for the University of Michigan, Howard University, Lucent Technologies-Bell Labs Collaborative Access Team (MHATT-CAT) at the Advanced Photon Source (APS), my task was to support the operation of the MHATT-CAT insertion device beam line, to participate in the scientific and professional activities of the CAT, to help users of this facility to perform their experiments, and to pursue an active research program focused on coherent and incoherent time-resolved X-ray scattering techniques. While stationed at the APS, I became a critical element in the operation of a state of the art synchrotron radiation research facility. In 2001, I became the Sector 7 Coordinator.

1998 **Discussion Instructor at the Department of Physics, University of Michigan**. I taught three sections of Introduction to Electromagnetism. The students teaching evaluation is available upon request.

- 1996-98 **Postdoctoral Fellow at the Department of Physics of the University of Michigan.**
- 1991-95 **Teaching Assistant, Department of Physics, McGill University.** I marked assignments for 3rd year Electromagnetism, Biophysics and 2nd year Thermodynamics.
- 1994 **Assistant System Manager** of the condensed matter physics computer system.
- 1988-90 **Teaching Assistant, Department of Physics, University of Waterloo.** I marked first year physics, 4th year optics and graduate quantum mechanics.
- 1988 **Instructor, Extension de l'enseignement, Université Laval, Ste-Foy, Québec.** I taught three first year physics courses: mechanics, electromagnetism and optics.
- 1987-88 **Substitute teacher, Ecole Polyvalente LaCamaradière, Québec, Québec.**

### Grants

- 2001-2003 *Development of Lithium-based x-ray compound refractive lenses*, Principal Investigator Nino Pereira, Ecopulse Inc, Phase I and II SBIR contract N00178-02-C-3119, from the US Missile Defense Agency.
- October 2007-2009 *“Novel Concepts in Streak-Camera Development, and Applications”*, Bernhard W. Adams, K. Attenkofer, Eric M. Dufresne, E.C. Landahl, T. Rajh, L. X. Chen, A. Miceli, J. Lee, S. Ross, Strategic LDRD FY08-09.
- October 2007-2010 *“Ultrafast x-ray tracking of laser-controlled molecular motions”*, Linda Young, L. Chen, R. Dunford, Elliot Kanter, B. Kraessig, R. Santra, S. Southworth, D. Tiede, S. Vajda, B. Adams, D. Arms, K. Attenkofer, Eric Dufresne, E. Landahl, D. Walko and J. Wang, Strategic LDRD FY08-10.
- October 2014-September 2017 *“Unraveling Mesoscale Spatial-temporal Correlations in Materials Using Coherent X-ray Probes”*, lead PI: Alec Sandy, Strategic LDRD FY15-17.

### TALKS and CONFERENCE PRESENTATIONS

- January 2018 Physics Department Colloquium at Truman State University, Kirksville MO.
- October 2017 Invited talk at the HPCAT workshop on “Probing Materials under Extreme Conditions Using Synchrotron Radiation”
- September 2017 Invited talk at the APS workshop on Planning the First Experiments with the Helical Superconducting Undulator at 7ID.
- October 2016 Invited talk at the APS Technical Working Group, Argonne IL.
- June 2016 Contributed talk at Coherence 2016, Saint-Malo, France.
- May 2015 Two talks, one in the Chemistry & Catalysis Workshop, and one in the Advanced Materials/Mesoscale Engineering Workshop on Early experiments and unique opportunities with the APS MBA Upgrade
- February 2015 Invited talk at the APS Technical Working Group, Argonne, IL

January 2014 Invited talk at the Canadian Light Source, Saskatoon, Canada

September 2013 Invited talk at the Ultrafast SIG meeting.

June 2013 One invited talk and one contributed talk at the 17th Panamerican SRI 2013 Conference at NIST, in Gaithersburg, MD.

June 2013 Invited talk, European X-ray Free Electron Laser (XFEL) GmbH, Hamburg, Germany.

May 2013 Three invited talks during the APS User Meeting, detailing the scope of the Ultrafast beamlines in the APS Upgrade.

September 2012 Invited talk at the Ultrafast SIG meeting.

September 2012 Invited Colloquium at the Northern Illinois University Department of Physics.

October 2011 Invited talk at the Time Resolved X-Ray Science at High Repetition Rate Workshop of the SSRL-LCLS Users Meeting, SLAC National Lab, CA.

June 2011 Invited talk at the Ultrafast SIG meeting.

May 2011 Invited talk at the NSLS CFN joint Users Meeting, Workshop 7: X-ray Diffraction and Spectroscopy to Study Dynamic Phenomena under Extremes.

Apr. 2011 Invited talk at the Mechanical Engineering and Design group luncheon seminar.

Mar. 2011 Invited talk, APS Technical Working Group, Chicago, IL

Feb. 2011 Invited talk, CLASSE seminars, CHESS, Cornell University, Ithaca, NY

Jan. 2011 Invited talk, Dynamic Phenomena Under Extremes, University of Texas, Austin, TX

Dec. 2010 Invited talk, Technical review of the SPX beamlines, Argonne.

Sep. 2010 Contributed talk, Pan-American Synchrotron Radiation Instrumentation Conference 2010, Chicago, IL.

May 2010 Invited talk, Workshop on Options for Ultrafast Science at NSLS-II, Brookhaven National Lab, Upton NY.

Apr. 2010 Invited talk, XFEL GmbH, Hamburg, Germany

Nov. 2009 Invited talk, University of Ottawa, Ottawa, Canada.

Oct. 2009 Invited talk, APS Scientific Advisory Committee Meeting, talk on options for time-resolved science in the Upgrade of APS.

Oct. 2009 Contributed talk, Workshop on applications of Coherent X-ray Methods, Melbourne University, Melbourne, Australia.

Sep. 2009 Contributed talk, International SRI 2009 conference Melbourne, Australia

Jun. 2008 Contributed talk, Canadian Association of Physicists, Université Laval, Québec, Canada

Jun. 2007 Contributed talk, Coherence 2007, International Workshop on Phase Retrieval and Coherent Scattering, Monterrey CA

Jun. 2007 Contributed talk, Canadian Association of Physicists, University of Saskatchewan, Saskatoon Saskatchewan

May 2007 APS User Seminar, Chicago IL.

Apr. 2007 Invited talk, SRI 2007, Satellite Workshop on Coherence and Polarization

Apr. 2007 Chair with Joseph Holmes the satellite workshop on Coherence and Polarization at SRI 2007

Apr. 2007 Contributed talk and one poster, SRI 2007, Baton Rouge LA

Jun. 2006 Contributed talk, and one poster, the 2006 International Synchrotron Radiation Instrumentation Conference in Korea.

Jun. 2006 Contributed talk, Canadian Association of Physicists, Brock University, St-Catherines ON.

Feb. 2006 Poster, Gordon 2006 Conference on Ultrafast Phenomena, CA.

Dec. 2005 APS Technical Working Group, Chicago IL.

Oct. 2005 APS Technical Working Group, Chicago IL.

Jun. 2005 APS User Seminar, Chicago IL.

Aug. 2004 Invited talk, 2004 XOR Retreat, Argonne IL.

Jun. 2004 Invited talk, CUOS, Univ. of Michigan, Ann Arbor MI.

Mai. 2004 Poster presented at the Ultrafast 2004 conference, San Diego CA

Apr. 2004 APS Technical Working Group, Chicago IL.

Aug. 2003 Two posters presented at SRI 2003, the Synchrotron Radiation Instrumentation Conference in San Francisco, CA.

Jun. 2003 Invited talk, APS,ESRF, Spring-8 Workshop, ANL, IL

May. 2003 Invited talk, Univ. of Michigan, CUOS, Ann Arbor MI.

Mar. 2003 APS Technical Working Group, Chicago IL.

Dec. 2002 Invited talk, INRS-Energie, Montreal, Canada

Sept. 2002 APS Technical Working Group, Chicago IL.

Aug. 2002 APS Technical Working Group, Chicago IL.

Feb. 2002 APS Technical Working Group, Chicago IL.

Jan. 2002 APS User Seminar, Chicago, IL.

Sep. 2001 APS Technical Working Group, Chicago IL.

Aug. 2001 Two posters presented at SRI 2001, the Synchrotron Radiation Instrumentation Conference in Madison, WI.

Mar. 2001 APS Technical Working Group, Chicago IL.

Oct. 2000 APS Technical Working Group, Chicago IL.

June 2000 Talk at the Canadian Association of Physicist Conference, Toronto, ON, Canada.

Oct. 1999 Poster presented at SRI 99, the Synchrotron Radiation Instrumentation Conference at SSRL, Palo Alto, CA.

- Aug. 1999 Poster presented at X99, the 1999 X-ray Absorption and Spectroscopy Conference, Chicago, IL.
- June 1998 Talk at the Canadian Association of Physicist Conference, Waterloo, ON, Canada.
- May 1997 Invited talk at the NSLS Annual Users' Meeting, Workshop on XPCS, Upton, NY.
- Nov. 1996 Invited talk, Department of Physics, Oakland University, Rochester, MI.
- Jan. 1996 NSLS lunch time seminar, Brookhaven National Labs, Upton, NY.
- June 1995 Canadian Association of Physicist Conference, Québec, PQ, Canada.
- May 1995 Department of Physics, University of Michigan, Ann Arbor MI.
- May 1995 Department of Physics, Brookhaven National Labs, Upton, NY.
- June 1990 Poster presented at the Canadian Association of Physicist Conference, Guelph ON, Canada.

### **Workshop and conference organization**

- October 2013 Workshop on new science opportunities provided by a multi-bend achromat lattice at the APS October 21 & 22, Timing and Dynamics breakout session co-organizer.
- May 2013 APS User meeting Satellite Workshop 13 Time-resolved X-ray Science at BioCARS: Past, Present, and Future, co-organized with Robert Henning, Vukica Srajer, and Philip Anfinrud.
- October 2011 Workshop 1: Time Resolved X-Ray Science at High Repetition Rate of the SSRL-LCLS Users Meeting, SLAC National Lab, CA., co-organized with J. Corbett, C.C. Kao, D. Keavney, A. Lindenberg, A. Mehta, L. Young
- June 2011 XDL2011 Workshop 3- Ultra-fast Science with "Tickle and Probe", co-organized with Robert Schoenlein, Brian Stephenson, and Joel Brock.
- May 2011 APS User meeting APS Workshop 3 Opportunities in Magnetic, Atomic, and Molecular Dynamics with a Short Pulse Soft X-ray Source, co-organized with David Keavney, and Yuelin Li.

### **Refereeing work.**

Reviewed articles for Journal of Synchrotron Radiation, Review of Scientific Instrument, and Physical Review Letters.

MSc Thesis committee for G. Jackson Williams, DePaul University 2010.

## PUBLICATIONS

### Refereed Journal Articles

1. *Hard-sphere like dynamics in highly concentrated alpha-crystallin suspensions*, Preeti Vodnala, Nuwan Karunaratne, Laurence Lurio, George M. Thurston, Michael Vega, Elizabeth Gaillard, Suresh Narayanan, Alec Sandy, Qingteng Zhang, Eric M. Dufresne, Giuseppe Foffi, Pawel Grybos, Piotr Kmon, Piotr Maj, and Robert Szczygiel, *Phys. Rev. E* **97**, 020601(R) (Feb. 2) (2018), DOI: 10.1103/PhysRevE.97.020601.
2. *Shear banding leads to accelerated aging dynamics in a metallic glass*, Stefan Küchemann, Chaoyang Liu, Eric M. Dufresne, Jeremy Shin, and Robert Maaß, *Phys. Rev. B* **97**, 014204 (11 January 2018) DOI: 10.1103/PhysRevB.97.014204.
3. *Ultrafast three-dimensional integrated imaging of strain in core/shell semiconductor/metal nanostructures* Mathew J. Cherukara, Kiran Sasikumar, Anthony Di Chiara, Steven J. Leake, Wonsuk Cha, Eric M. Dufresne, Tom Peterka, Ian McNulty, Donald A. Walko, Haidan Wen, Subramanian K.R.S. Sankaranarayanan, and Ross J. Harder, *Nano Lett.* **17** (12), pp 76967701 (Oct 31, 2017). DOI: 10.1021/acs.nanolett.7b03823.
4. *Dynamic Scaling of Colloidal Gel Formation at Intermediate Concentrations*, Qingteng Zhang, Divya Bahadur, Eric M. Dufresne, Pawel Grybos, Piotr Kmon, Robert L. Leheny, Piotr Maj, Suresh Narayanan, Robert Szczygiel, Subramanian Ramakrishnan, and Alec Sandy, *Phys. Rev. Lett.* **119** (published October 25) 178006 (2017), DOI: 10.1103/PhysRevLett.119.178006.
5. *Thermal Fluctuations of Ferroelectric Nanodomains in a Ferroelectric/Dielectric  $PbTiO_3/SrTiO_3$  Superlattice*, Qingteng Zhang, Eric M. Dufresne, Pice Chen, Joonkyu Park, Margaret P. Cosgriff, Mohammed Yusuf, Yongqi Dong, Dillon D. Fong, Hua Zhou, Zhonghou Cai, Ross Harder, Sara J. Callori, Matthew Dawber, Paul G. Evans, Alec R. Sandy, *Phys. Rev. Lett.* **118** 097601 (2017), DOI: 10.1103/PhysRevLett.118.097601.
6. *Ultrafast Three-Dimensional X-ray Imaging of Deformation Modes in ZnO Nanocrystals*, Mathew J. Cherukara, Kiran Sasikumar, Wonsuk Cha, Badri Narayanan, Steven J. Leake, Eric M. Dufresne, Tom Peterka, Ian McNulty, Haidan Wen, Subramanian K. R. S. Sankaranarayanan, and Ross J. Harder, *Nano Lett.* **17**, 1102–1108 (2017), DOI: 10.1021/acs.nanolett.6b04652.
7. *Phase coexistence and pinning of charge density waves by interfaces in chromium*, A. Singer, S. K. K. Patel, V. Uhlir, R. Kukreja, A. Ulvestad, E. M. Dufresne, A. R. Sandy, E. E. Fullerton, and O. G. Shpyrko, *Phys. Rev. B* **94**, 174110 (2016) DOI: 10.1103/PhysRevB.94.174110.
8. *Experimental study on the effect of nozzle hole-to-hole angle on the near-field spray of diesel injector using fast X-ray phase-contrast imaging*, Xusheng Zhang, Seoksu Moon, Jian Gao, Eric M. Dufresne, Kamel Fezzaa, and Jin Wang, *Fuel* **185**, 1 December, Pages 142–150 (2016) DOI: 10.1016/j.fuel.2016.07.114.
9. *Pink-beam focusing with a 1D compound refractive lens*, Eric M. Dufresne, Robert W. Dunford, Elliot P. Kanter, Yuan Gao, Seoksu Moon, Donald A. Walko and Xusheng Zhang, *J. Synchrotron Rad.* **23** September 1082–1086 (2016) DOI: 10.1107/S1600577516009310 (author's copy)..
10. *Submillisecond X-ray Photon Correlation Spectroscopy from Pixel-Array-Detector with Fast Dual Gating and No Readout Deadtime*, Qingteng Zhang, Eric M. Dufresne, Pawel Grybos, Piotr Maj, Suresh Narayanan, Gregory W. Deptuch, Robert Szczygiel and Alec R. Sandy, *J. Synchrotron Rad.* **23** 679–684 (2016), DOI: 10.1107/S1600577516005166 (author's copy).

11. *Mesoscopic structural phase progression in photo-excited VO<sub>2</sub> revealed by time-resolved x-ray diffraction microscopy*, Yi Zhu, Zhonghou Cai, Pice Chen, Qingteng Zhang, Matthew J. Highland, Il Woong Jung, Donald A. Walko, Eric M. Dufresne, Jaewoo Jeong, Mahesh G. Samant, Stuart S. P. Parkin, John W. Freeland, Paul G. Evans, Haidan Wen, *Nature Scientific Reports* **6**, 21999 (Feb. 2016), DOI: 10.1038/srep21999.
12. *First experimental feasibility study of VIPIC: a custom-made detector for x-ray speckle measurements*, Abdul K. Rumaiz, D. Peter Siddons, Grzegorz Deptuch, Piotr Maj, Anthony N. Kuczewski, Gabriella A. Carini, Suresh Narayanan, Eric M. Dufresne, Alec Sandy, Robert Bradford, Andrei Fluerașu, and Mark Sutton, *J. Synchrotron Rad.*, Mar. **23** 404-409 (2016), DOI: 10.1364/OE.24.000355.
13. *Pushing X-Ray Photon Correlation Spectroscopy beyond the continuous frame rate limit*, Eric M. Dufresne, Suresh Narayanan, Alec R. Sandy, David M. Kline, Qingteng Zhang, Eric C. Landahl, and Steve Ross, *Optics Express* **24**, no. 1, 355–364 (2016), DOI: 10.1364/OE.24.000355.
14. *Condensation of collective charge ordering in chromium*, A. Singer, M.J. Marsh, S.H. Dietze, V. Uhler, Y. Li, D.A. Walko, E.M. Dufresne, G. Srajer, M.P. Cosgriff, P.G. Evans, E.E. Fullerton, O.G. Shpyrko, *Phys. Rev. B* **91**, 115134 (2015), DOI: 10.1103/PhysRevB.91.115134.
15. *Morphological Exploration of Emerging Jet Flows from Multi-Hole Diesel Injectors at Different Needle Lifts*, Seoksu Moon, Xusheng Zhang, Jian Gao, Kamel Fezzaa, Eric M. Dufresne, Jin Wang, Xingbin Xie, Fengkun Wang, Ming-Chia Lai, *Atomization Spray* **25**, 375 (2015), DOI: 10.1615/AtomizSpr.2015011058.
16. *Time delay measurement in the frequency domain*, Stephen M. Durbin, Shih-Chieh Liu, Eric M. Dufresne, Yuelin Li, Haidan Wen, *J. Synchrotron Rad.* **22**, 1293 (2015), DOI: 10.1107/S1600577515014095.
17. *A short-pulse X-ray beamline for spectroscopy and scattering*, R. Reininger, E. M. Dufresne, M. Borland, M. A. Beno, L. Young and P. G. Evans, *J. Synchrotron Rad.* **21**, 1194-1199 (2014), DOI: 10.1107/S1600577514012302.
18. *Transient crystalline superlattice generated by a photoacoustic transducer*, A.Loether, Y. Gao, Z. Chen, M.F. DeCamp, E.M. Dufresne, D.A. Walko, and H. Wen, *Structural Dynamics* **1**, 024301 (2014), DOI: 10.1063/1.4867494.
19. *Self-propagating reactions in Al/Zr multilayers: Anomalous dependence of reaction velocity on bilayer thickness*, S. C. Barron, S. T. Kelly, J. Kirchhoff, R. Knepper, K. Fisher, K. J. T. Livi, E. M. Dufresne, K. Fezzaa, T. W. Barbee, T. C. Hufnagel and T. P. Weihs, *J. Appl. Phys.* **114**, 223517 (Dec. 14) (2013), DOI: 10.1063/1.4840915.
20. *Structural and electronic recovery pathways of a photoexcited ultrathin VO<sub>2</sub> film*, Haidan Wen, Lu Guo, Eftihia Barnes, June Hyuk Lee, Donald A. Walko, Richard D. Schaller, Jarrett A. Moyer, Rajiv Misra, Yuelin Li, Eric M. Dufresne, Darrell G. Schlom, Venkatraman Gopalan, and John W. Freeland, *Phys. Rev. B* **88**, 165424 (October 25) (2013), DOI: 10.1103/PhysRevB.88.165424.
21. *Optical design of the short pulse x-ray imaging and microscopy time-angle correlated diffraction beamline at the Advanced Photon Source*, R. Reininger, E.M. Dufresne, M. Borland, M.A. Beno, L. Young, K.-J. Kim, P.G. Evans, *Rev. Sci. Instrum.* **84** (5), 053103-1-053103-7 (2013), DOI: 10.1063/1.4804197.
22. *Optoelectronic measurement of x-ray synchrotron pulses: a proof of concept demonstration*, Stephen M. Durbin, Aamer Mahmood, Marc Caffee, Sergei Savikhin, Eric M. Dufresne, Haidan Wen, and Yuelin Li, *Appl. Phys. Lett.* **102** no. 5 051109 (published online 7 February) (2013), DOI: 10.1063/1.4791559.



23. *Field-Dependent Domain Distortion and Interlayer Polarization Distribution in PbTiO<sub>3</sub>/SrTiO<sub>3</sub> Superlattices*, Pice Chen, Margaret P. Cosgriff, Qingteng Zhang, Sara J. Callori, Bernhard W. Adams, Eric M. Dufresne, Matthew Dawber, and Paul G. Evans, Phys. Rev. Lett. **110**, 047601 (Jan. 24) (5 pages) (2013), DOI: 10.1103/PhysRevLett.110.047601.
24. *Electronic Origin of Ultrafast Photoinduced Strain in BiFeO<sub>3</sub>*, Haidan Wen, Pice Chen, Margaret P. Cosgriff, Donald A. Walko, June Hyuk Lee, Carolina Adamo, Richard D. Schaller, Jon F. Ihlefeld, Eric M. Dufresne, Darrell G. Schlom, and Paul G. Evans, Phys. Rev. Lett. **110**, 037601 (Jan. 18)(2013), DOI: 10.1103/PhysRevLett.110.037601
25. *Evidence for interatomic Coulombic decay in Xe K-shell-vacancy decay of XeF<sub>2</sub>*, R. W. Dunford, S. H. Southworth, D. Ray, E. P. Kanter, B. Krig, L. Young, D. A. Arms, E. M. Dufresne, D. A. Walko, O. Vendrell, S.-K. Son, and R. Santra, Phys. Rev. A **86**, 033401 (September 2012), DOI: 10.1103/PhysRevA.86.033401.
26. *Direct observation of dynamics of thermal expansion using pump-probe high-energy-resolution x-ray diffraction*, S. Stoupin, A. M. March, H. Wen, D. A. Walko, Y. Li, E.M. Dufresne, S. A. Stepanov, K.-J. Kim, and Yu. V. Shvydko, Phys. Rev. B **86**, 054301 (August 2012), 10.1103/PhysRevB.86.054301.
27. *The 7BM Beamline at the APS: A Facility for Time-Resolved Fluid Dynamics Measurements*, Alan Kastengren, Christopher F. Powell, Dohn Arms, Eric M. Dufresne, Harold Gibson and Jin Wang, Journal of Synchrotron Radiation, **19** Part 4, 654-657 (July 2012), DOI: 10.1107/S0909049512016883.
28. *Nonlinearity in the high-electric-field piezoelectricity of epitaxial BiFeO<sub>3</sub> on SrTiO<sub>3</sub>*, Pice Chen, Rebecca J. Sichel-Tissot, Ji Young Jo, Ryan T. Smith, Seung-Hyub Baek, Wittawat Saenrang, Chang-Beom Eom, Osami Sakata, Eric M. Dufresne, and Paul G. Evans, Appl. Phys. Lett. **100**, 062906 (Feb. 6) (2012), DOI: 10.1063/1.3683533.
29. *Domain- and symmetry-transition origins of reduced nanosecond piezoelectricity in ferroelectric/dielectric superlattices*, Pice Chen, Ji Young Jo, Ho Nyung Lee, Eric M. Dufresne, Serge M. Nakhmanson, and Paul G. Evans, New Journal of Physics **14** (January 18), 013034-1-013034-13 (2012), DOI: 10.1088/1367-2630/14/1/013034.
30. *Ultrafast polarization dynamics in ferroelectric nanolayers*, Dan Daranciang, Matthew J. Highland, Haidan Wen, Nathaniel Brandt, Harold Y. Hwang, Michael Vattilana, Steve M. Young, John Goodfellow, Tingting Qi, Ilya Grinberg, David M. Fritz, Marco Cammarata, Diling Zhu, Henrik T. Lemke, Donald A. Walko, Eric M. Dufresne, Yuelin Li, Jorgen Larsson, Klaus Sokolowski-Tinten, Andrew M. Rappe, David A. Reis, Keith A. Nelson, Paul H. Fuoss, G. Brian Stephenson and Aaron M. Lindenberg, Phys. Rev. Lett. **108** 087601 (2012), DOI: 10.1103/PhysRevLett.108.087601.
31. *Nanosecond dynamics of ferroelectric/dielectric superlattices*, Ji Young Jo, Pice Chen, Rebecca J. Sichel, Sara J. Callori, John Sinsheimer, Eric M. Dufresne, Matthew Dawber, and Paul G. Evans, Phys. Rev. Lett. **107**, (No.5 July 29) 055501 (2011), DOI: 10.1103/PhysRevLett.107.055501.
32. Alan Kastengren, Christopher Powell, Eric M. Dufresne, Donald A. Walko, *Application of X-Ray Fluorescence to Turbulent Mixing*, J. Synch. Rad. (online 13 July) vol. **18**, part 5 (September) 811.815 (2011), DOI: 10.1107/S0909049511024435.
33. Stephen T. Kelly, Jonathan C. Trenkle, Lucas J. Koerner, Sara C. Barron, Noel Walker, Phillippe O. Pouliquen, Mark W. Tate, Sol M. Gruner, Eric M. Dufresne, Timothy P. Weihs and Todd C. Hufnagel, *Fast x-ray microdiffraction techniques for studying irreversible transformations in materials*, J. Synch. Rad. **18** May 464-474 (2011), DOI: 10.1107/S0909049511002640.

34. Ji Young Jo, Rebecca J. Sichel, Eric M. Dufresne, Ho Nyung Lee, Serge M. Nakhmanson, and Paul G. Evans, *Component-specific electromechanical response in a ferroelectric/dielectric superlattice*, Phys. Rev. B **82**, 174116 Nov. (2010), DOI:<http://dx.doi.org/10.1103/PhysRevB.82.174116>.
35. Ji Young Jo, Rebecca J. Sichel, Ho Nyung Lee, Serge M. Nakhmanson, Eric M. Dufresne, and Paul G. Evans, *Piezoelectricity in the dielectric component of nanoscale dielectric/ferroelectric superlattices*, Phys. Rev. Lett. **104**, 207601 (2010) DOI:<http://dx.doi.org/10.1103/PhysRevLett.104.207601>.
36. Robert V. Reeves, Jeremiah D.E. White, Eric M. Dufresne, Kamel Fezzaa, Steven F. Son, Arvind Varma, and Alexander S. Mukasyan, *Microstructural transformations and kinetics of high-temperature heterogeneous gasless reactions by high-speed x-ray phase contrast imaging*, Physical Review B **80** 224103-1 224103-8 (2009). It featured as an Editor's choice. Download at <http://dx.doi.org/10.1103/PhysRevB.80.224103>.
37. Alexei Grigoriev, Rebecca J. Sichel, Ji Young Jo, Samrat Choudhury, Long-Qing Chen, Dane Morgan, Ho Nyung Lee, Eric C. Landahl, Bernhard W. Adams, Eric M. Dufresne, and Paul G. Evans, *Stability of unswitched ferroelectric polarization in ultrathin epitaxial Pb(Zr,Ti)O<sub>3</sub>*, Physical Review B **80** (July 21) 014110-1 to 014110-6 (2009). See <http://dx.doi.org/10.1103/PhysRevB.80.014110>.
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