

# 1 Publication Details

## 1.1 Book

B.W. Adams (ed.), *Nonlinear Optics, Quantum Optics, and Ultrafast Phenomena with X-Rays*, subtitled *Physics with X-Ray Free-Electron Lasers*, Kluwer Acad. Publishers (2003), ISBN 1-4020-7475-1. I am the editor of this book and have myself contributed the following 6 chapters: 1. X-Ray Sources, 2. Nonlinear Optics of Free Electrons, 3. Dynamical Diffraction, 4. Ultrafast Diffractive X-Ray Optics, 5. Parametric Down Conversion, 6. Laser Pump, X-Ray Probe Spectroscopy on GaAs.

## 1.2 Refereed Journals

1. B. Adams, *Extended Takagi-Taupin Theory for Strongly Scattering and Strongly Deformed Crystals, Poverchnost. Rentgenovskie, Sinchrotronnie i Neutronnie Issledovaniya* **3-4**, 192 (1996) and *Surface Investigation* **12**, 415–420 (1997)
2. B. Adams, D.V. Novikov, T. Hiort, G. Materlik, E. Kossel, *Atomic Holography with X-Rays*, Phys. Rev. B **57**, 7526-7534 (1998)
3. D.V. Novikov, B. Adams, T. Hiort, E. Kossel, G. Materlik, R. Menk, A. Walenta, *X-Ray Holography for Structural Imaging*, J. Synchrotron Rad. **5**, 315–319 (1998)
4. B. Adams, T. Hiort, E. Kossel, G. Materlik, Y. Nishino, D.V. Novikov, *X-Ray Fluorescence Holography in Theory and Experiment*, Phys. Stat. Sol. (b) **215**, 757 (1999)
5. B. Adams, P. Fernandez, W.-K. Lee, G. Materlik, D.M. Mills, D.V. Novikov, *Parametric down conversion of x-ray photons* J. Synchrotron Rad. **7**, 81–88 (2000)
6. B. Adams, Y. Nishino, G. Materlik, *A novel experimental technique for x-ray atomic holography*, J. Synchrotron Rad. **7**, 274–279 (2000)
7. C. Ern, W. Donner, H. Dosch, B. Adams, D.V. Novikov, *Temperature-dependent interfacial stiffness of the disorder layer in a thin Cu<sub>3</sub>Au alloy film*, Phys. Rev. Lett. **85**, 1926–1929 (2000)
8. B. Adams, *Proposal for a Femtosecond X-Ray detector*, Nucl. Instrum. and Meth. A **459**, 339-346 (2001)
9. M.F. DeCamp, D.A Reis, P.H. Bucksbaum, B. Adams, J.M. Caraher, R. Clarke, C.W.S. Conover, E.M. DuFresne, R. Merlin, V. Stoica, J. Wahlstrand, *Coherent Control of Pulsed X-Ray Beams*, Nature, **413**, 825-828 (2001)
10. B. Adams, *Manipulation and Detection of X-rays on the Femtosecond Timescale*, Rev. Sci. Instr. **73**, 1632-1636 (2002)

11. B.W. Adams, M.F. DeCamp, E.M. Dufresne, D.A. Reis, *Picosecond Laser-Pump, X-Ray Probe Spectroscopy of GaAs*, Rev. Sci. Instrum **73**, 4150-4156 (2002), also in the Virtual Journal of Ultrafast Science
12. B.W. Adams, *A time- and energy-resolving, multichannel event logger*, Rev. Sci. Instrum. **74** 1128-1134 (2003)
13. B.W. Adams, *Using 15 fs, LINAC-generated electron bunches for naturally synchronized IR pump, x-ray probe experiments with coherent synchrotron radiation*, Rev. Sci. Instrum. **75**, 1982-1987 (2004), also in the Virtual Journal of Ultrafast Science
14. B.W. Adams, *Time-Dependent Takagi-Taupin Eikonal Theory of X-Ray Diffraction in Rapidly Changing Crystal Structures*, Acta Cryst. A **60**, 120-133 (2004)
15. B.W. Adams, *Time-Dependent Takagi-Taupin Eikonal Theory and Applications in the Subpicosecond Manipulation of X-Rays*, Chem. Phys. **299** 193-201 (2004)
16. B.W. Adams, *Diffraction sub-picosecond Manipulation of X-Rays*, Rad. Phys. Chem. **70**, 469-477 (2004)
17. B.W. Adams, *Femtosecond Synchronism of X-rays to Visible Light in an X-ray Free-Electron Laser*, Rev. Sci. Instrum. **76**, 063304 (2005), also in the Virtual Journal of Ultrafast Science
18. A. Grigoriev, D.-H. Do, D.M. Kim, C.-B. Eom, B. Adams, E. Dufresne, P.G. Evans, *Subnanosecond piezoelectric x-ray switch*, Appl. Phys. Lett. **89**, 021109 (2006), also in the Virtual Journal of Ultrafast Science, Aug. 2006
19. A. Grigoriev, D.-H. Do, D.M. Kim, C.-B. Eom, B. Adams, E.M. Dufresne, P.G. Evans, *Nanosecond Domain Wall Dynamics in Ferroelectric Pb(Zr,Ti)O<sub>3</sub> Thin Films*, Phys. Rev. Lett. **96**, 187601 (2006)
20. A. Grigoriev, D.-H. Do, D.M. Kim, C.-B. Eom, P.G. Evans, B.W. Adams, E.M. Dufresne, *Nanosecond structural visualization of the reproducibility of polarization switching in ferroelectrics*, Integrated Ferroelectrics **85**, 165-173 (2006)
21. D.M. Fritz, D.A. Reis, B.W. Adams, R.A. Akre, J. Arthur, et al., *Ultrafast Bond Softening in Bismuth: Mapping the Interatomic Potential of a Solid with X-rays*, Science **315**, 633-636 (2007)
22. A. Grigoriev, D.-H. Do, P.G. Evans, B. Adams, E. Landahl, E.M. Dufresne *Synchronizing fast electrically driven phenomena with synchrotron x-ray probes*, Rev. Sci. Instrum. **78**, 023105 (2007)
23. B.W. Adams, K. Attenkofer, *A high-resolution fluorescence analyzer with large solid-angle coverage and wide tunability*, Nucl. Instrum. Meth. A **582**, 152-155 (2007)

24. E.M. Dufresne, B.W. Adams, E.C. Landahl, *A study of laser-generated strain fields with x-ray microdiffraction*, Nucl. Instrum. Meth. **A 582**, 205-207 (2007)
25. B.W. Adams, *Femtosecond synchronism of x-rays and visible/infrared light in an x-ray free-electron laser*, Rev. Sci. Instrum. **78**, 123302 (2007), also in the Virtual Journal of Ultrafast Science
26. B.W. Adams, K. Attenkofer, *An active-optic x-ray fluorescence analyzer with high energy resolution, large solid angle coverage, and a large tuning range*, Rev. Sci. Instrum. **79**, 023102 (2008), DOI: 10.1063/1.2823527
27. A. Grigoriev, R. Sichel, H.N. Lee, E.C. Landahl, B. Adams, E.M. Dufresne, P.G. Evans, *Non-linear Piezoelectricity in Epitaxial Ferroelectrics at High Electric Fields*, Phys. Rev. Lett. **100**, 027604 (2008)
28. A. Grigoriev, R. Sichel, H.N. Lee, C.B. Eom, B. Adams, E.M. Dufresne, Z. Cai, P.G. Evans *Structure of Complex Oxides in High Electric Fields* Microscopy and Microanalysis **14**, 222-223 (2008)
29. A. Grigoriev et al., B.W. Adams, et al., *Stability of the unswitched polarization state of ultrathin epitaxial Pb(Zr,Ti)O<sub>3</sub> in large electric fields*, Phys. Rev. B **80**, 014110 (2009)
30. Bernhard Adams, Klaus Attenkofer, Mircea Bogdan, Karen Byrum, Jean-Francois C. Genat, Herve Grabas, Henry J. Frisch, Heejong Kim, Mary K. Heintz, Tyler Natoli, Richard Northrop, Eric Oberla, Samuel Meehan, Edward N. May, Robert Stanek, Fukun Tang, Gary Varner, Eugene Yurtsev, *Position Sensing Using Pico-Second Timing With Micro-Channel Plate Devices and Waveform Sampling* IEEE Trans. Nucl. Sc. **57**, 525-532 (2010)
31. B.W. Adams, *Nuclear  $\gamma$ -ray Superradiance*, J. Mod. Opt., **56**, 1974-1984 (2009)
32. E.M. Dufresne, B. Adams, et al., *Time-Resolved Research at the Advanced Photon Source Beamline 7-ID*, AIP Conf. Proc. **1234**, 181-184 (2010)
33. B.W. Adams, *Geometric Phase Kicks X-Rays Down a New Path*, Physics (viewpoint article) , 50 (2010)
34. M. Chollet, B. Ahr, D. Walko, C. Rose-Petruck, B. Adams, *Hard X-Ray Streak Camera at the Advanced Photon Source*, Nucl. Instrum. Meth. **649**, 70-71 (2011)
35. B. Ahr, M. Chollet, B. Adams, E. Lunny, C. Laperle, C. Rose-Petruck, *Picosecond x-ray absorption measurements of the ligand substitution dynamics of Fe(CO)<sub>5</sub> in ethanol*, Phys. Chem. Chem. Phys. **13**, 5481-6372 (2011)

36. Eric M. Dufresne, Bernhard Adams, Matthieu Chollet, Ross Harder, Yuelin Li, Haidan Wen, Steven J. Leake, Loren Beitra, Xiaojing Huang, Ian K. Robinson, *A technique for high-frequency laser-pump X-ray probe experiments at the APS*, Nucl. Instrum. Meth. A **649**, 191-193 (2011)
37. B. Adams, *Nonlinear X-Ray Optics: The next phase for x-rays*, Nature Physics **7**, 675-676 (2011) (News and Views article)
38. B.W. Adams, *Space-time control of nuclear gamma-ray superradiance*, J. Mod. Optics **58** 1638-1643 (2011)
39. M. Chollet, B. Ahr, D.A. Walko, C. Rose-Petruck, B. Adams, *2-ps hard x-ray streak camera measurements at Sector 7 beamline of the Advanced Photon Source* IEEE J. Quantum Electronics **18**, 66-73 (2012)
40. S.O. Hruszkewycz, M. Sutton, P.H. Fuoss, B. Adams, S. Rosenkranz, K.F. Ludwig, Jr., W. Roseker, D. Fritz, M. Cammerata, D. Zhu, S. Lee, H. Lemke, C. Gutt, A. Robert, G. Grübel, G.B. Stephenson *High contrast x-ray speckle from atomic-scale order in liquids and glasses*, Phys. Rev. Lett. **109**, 185502 (2012)
41. B.W. Adams, *Controlling the Light*, Nature **482**, 169-170 (2012)
42. B. Adams, M. Borland, L.X. Chen, P. Chupas, N. Dashdorj, G. Doumy, E. Dufresne, S. Durbin, H. Dürr, P. Evans, T. Graber, R. Henning, E.P. Kanter, D. Keavney, C. Kurtz, Y. Li, A.M. March, K. Moffat, A. Nassiri, S.H. Southworth, V. Srajer, D. M. Tiede, D. Walko, J. Wang, H. Wen, L. Young, X. Zhang, A. Zholents *X-ray Capabilities on the Picosecond Timescale at the Advanced Photon Source*, Synchrotron Radiation News **25**, 6-11 (2012)
43. Herve Grabas, Razib Obaid, Eric Oberla, Henry Frisch, Jean-Francois Genat, Richard Northrop, Fukun Tang, David McGinnis, Bernhard Adams, Matthew Wetstein *RF strip-line anodes for Psec large-area MCP-based photodetectors* Nucl. Instrum. Meth. A **711**, 124-131 (2013)
44. Pice Chen, Maragret P. Cosgriff, Qingteng Zhang, Sara J. Callori, Bernhard W. Adams, Eric M. Dufresne, Matthew Dawber, Paul G. Evans *Field-dependent domain distortion and interlayer polarization distribution in PbTiO<sub>3</sub>/SrTiO<sub>3</sub> superlattices*, Phys. Rev. Lett. **110**, 047601 (2013)
45. B.W. Adams, K.-J. Kim, *Nuclear-resonance-stabilized XFEL for fundamental physics and precision metrology* ICFA Newsletter **60**, 56-68 (2013)
46. Bernhard Adams, Andrey Elagin, Henry Frisch, Razib Obaid, Eric Oberla, Alexander Vostrikov, Robert Wagner, Matthew Wetstein, *Measurements of the gain, time resolution, and spatial resolution of a 2020 cm<sup>2</sup> MCP-based picosecond photo-detector* Nucl. Instr. Meth. A **732** 392-396 (2013)

47. B.W. Adams, C. Buth, S.M. Cavaletto, J. Evers, Z. Harman, C.H. Keitel, A. Palffy, A. Picon, R. Röhlberger, Yu. Rostovtsev, K. Tamasaku, *X-Ray Quantum Optics*, J. Mod. Opt. **60**, 2-21 (2013). This article was chosen by Taylor& Francis as one of the Top 10 Physics articles in 2013, see <http://explore.tandfonline.com/page/est/physics-top-10>
48. Bernhard Adams, Matthieu Chollet, Andrey Elagin, Eric Oberla, Alexander Vostrikov, Matthew Wetstein, Razib Obaid, Preston Webster, *Invited Article: A test-facility for large-area microchannel plate detector assemblies using a pulsed picosecond laser*, Rev. Sci. Instrum. **84**, 061301 (2013). This article was featured as an Argonne science highlight and on the DOE website
49. B.W. Adams, C. Rose-Petruck, *X-ray focusing scheme with continuously variable lens*, J. Synchrotron Rad. **22**, 16-22 (2015)
50. Bernhard W. Adams, Andrey Elagin, Jeffrey W. Elam, Henry J. Frisch, Jean-Francois Genat, Joseph S. Gregar, Anil U. Mane, Michael J. Minot, Richard Northrop, Razib Obaid, Eric Oberla, Alexander Vostrikov, Matthew Wetstein, *An internal ALD-based high voltage divider and signal circuit for MCP-based photodetectors* Nuclear Instruments and Methods A **780**, 107-113 (2015)
51. Bernhard W. Adams, *News&Views: Gravity meets quantum physics* Nature Photonics **9**, 143-144 (2015)
52. B.W. Adams, K-J. Kim, *X-Ray Comb Generation from Nuclear-Resonance-Stabilized X-Ray Free-Electron Laser Oscillator for Fundamental Physics and Precision Metrology*, Phys Rev ST-AB **18**, 030711 (2015)
53. Bernhard W. Adams, *Coherence Conversion for Optimized Resolution in Optical Measurements - Example of Femtosecond Time Resolution Using the Transverse Coherence of 100-Picosecond X-Rays* J. of Modern Optics, **62**, 989-1006 (2015)
54. B.W. Adams, C. Rose-Petruck, Y. Jiao *Picosecond-resolved x-ray absorption spectroscopy at low signal contrast using a hard x-ray streak camera* J. of Synchrotron Radiation **22**, 1022-1029 (2015)
55. B.W. Adams, A.U. Mane, J.W. Elam, R. Obaid, M. Wetstein, M. Chollet *Towards a microchannel-based X-ray detector with two-dimensional spatial and time resolution and high dynamic range*, J. of Synchrotron Radiation **22**, 1202-1206 (2015)
56. B.W. Adams, A. Elagin, H.J. Frisch, R. Obaid, E. Oberla, A. Vostrikov, R.G. Wagner, J. Wang, M. Wetstein *Timing characteristics of Large Area Picosecond Photodetectors* Nuclear Instruments and Methods A **795**, 1-11 (2015)

57. Glenn R. Jocher, Matthew J. Wetstein, Bernhard Adams, Kurtis Nishimura, Shawn M. Usman, *Multiple-photon disambiguation on stripline-anode Micro-Channel Plates* Nucl. Instrum. Meth. A **822**, 25-33 (2016)
58. Aileen O'Mahony, Christopher A. Craven, Michael J. Minot, Mark A. Popecki, Joseph M. Renaud, Daniel C. Bennis, Justin L. Bond, Michael E. Stochaj, Michael R. Foley, Bernhard W. Adams, Anil U. Mane, Jeffrey W. Elam, Camden Ertley, Oswald H. W. Siegmund *Atomic layer deposition of alternative glass microchannel plates* J. Vacuum Science and Technology A **34**, 01A128 (2016)
59. A. Loether, B.W. Adams, A. DiCharia, Y. Gao, R. Henning, D.A. Walko, M.F. DeCamp, *Pump-probe spectrometer for measuring x-ray induced strain* Optics Letters **41**, 1977-1980 (2016)
60. Bernhard W. Adams, .., H.J. Frisch, .., et al. *A Brief Technical History of the Large-Area Picosecond Photodetector (LAPPD) Collaboration* <http://arxiv.org/abs/1603.01843>
61. M.A. Popecki, B. Adams, C.A. Craven, T. Cremer, M.R. Foley, A. Lyashenko, A. O'Mahoney, M.J. Minot, M. Aviles, J.L. Bond, M.E. Stochaj, W. Worstell, J.W. Elam, A.U. Mane, O.H.W. Siegmund, C. Ertley, L.M. Kistler, M.S. Granoff, *Microchannel Plate Fabrication using Glass Capillary Arrays with Atomic Layer Deposition Films for Resistance and Gain* J. Geophys. Res., Space Physics **121**, 7447-7460 (2016)
62. Bernhard W. Adams, Kwang-Je Kim *X-Ray Free-Electron Laser Oscillator with Nuclear-Resonant Cavity Stabilization and Quantum-Optical Applications* J. Mod. Opt. **64**, 908-912 (2017)
63. E. Angelico, T. Seiss, B. Adams, A. Elagin, H. Frisch, E. Spieglan *Capacitively coupled pickup in MCP-based photodetectors using a conductive metallic anode*, Nucl. Instrum. Meth. A **846**, 75-80 (2017)
64. S.M. Durbin, A. Landcastle, A. DiChiara, Haidan Wen, D. Walko, B. Adams *Optical birefringence imaging of x-ray excited lithium tantalate* APL Photonics **2**, 086102 (2017)
65. Yishuo Jiao, Bernhard Adams, Christoph Rose-Petruck *Ultrafast X-ray measurements of the glass-like, high-frequency stiffness of aqueous solutions* Phys. Chem. Chem. Phys. **19**, 21095-21100 (2017)  
DOI: 10.1039/C7CP02747H
66. Yishuo Jiao, Bernhard Adams, Asmus Dohn, Klaus Braagaard Möller, Hannes Jonsson and Christoph Rose-Petruck *Ultrafast X-ray Absorption Study of Longitudinal-Transverse Phonon Coupling in Electrolyte Aqueous Solution* Phys. Chem. Chem. Phys., **19**, 27266-27274 (2017)  
DOI: 10.1039/C7CP02978K

67. Junqi Xie, Robert Wagner, Marcel Demarteau, Lei Xia, Bernhard Adams, Zhehui Wang, Xuan Li, Renyuan Zhu, Liyuan Zhang, Chen Hu, John Katsoudas, Yujia Ding, Yanhua Shih, Thomas A. Smith, *First experimental demonstration of time-resolved X-ray measurements with next-generation fast-timing MCP-PMT* Nucl. Instrum. Meth. A **927** 287-292 (2019)  
DOI: 10.1016/j.nima.2019.02.057
68. Thomas A. Smith, Yanhua Shih, Zhehui Wang, XuanLi, Bernhard Adams, Marcel Demarteau, Robert Wagner, Junqi Xie, Lei Xia, Ren-Yuan Zhu, Liyuan Zhang, Chen Hu *From optical to X-ray ghost imaging* Nucl. Instrum. Meth. A **935**, 173-177 (2019) DOI: 10.1016/j.nima.2019.05.027

### 1.3 Web Highlights

1. on the article J. Mod. Opt. **60**, 2-21 (2013)  
<http://explore.tandfonline.com/page/est/physics-top-10>
2. On the article Rev. Sci. Instrum. **84**, 061301 (2013)  
<http://www.anl.gov/articles/> (url continued on next line)  
collaboration-between-varied-organizations-develops-larger-more-precise-photodetectors
3. On the article Rev. Sci. Instrum. **84**, 061301 (2013)  
<http://science.energy.gov/news/featured-articles/2013/11-06-13/>

### 1.4 Patents

1. B.W. Adams, K. Attenkofer, O.A. Schmidt, *High-Resolution, Active-Optic X-Ray Fluorescence Analyzer*, U.S. patent no. 8130902 granted 2012-03-06
2. B.W. Adams, M.C. Chollet, *Continuously variable focal length lens*, U.S. patent no. 8611502 granted 2013-12-17
3. B.W. Adams, *System for true thermal-light applications*, U.S. patent no. 10190916, granted 2019-01-29

### 1.5 Refereed Conference Proceedings

1. B. Adams, E. Adams, H. Spreuer, *Practical Stability and Stochastic Point Processes*, proceedings of IMACS 1989, Numerical and Applied Mathematics, J.C. Balzer Scientific Publishing Co., 81-89 (1989)
2. B. Adams, *Feedback in a soft x-ray FEL by optically generated atomic lattices*, Procs. of 18th Int. FEL Conf., Free Electron Lasers, North Holland, ISBN 0-444-82819-2, II-26 (1997)

3. B. Adams, G. Materlik, *Two-Stage Amplifier Scheme with Feedback by Bragg-Reflecting Mirrors in an Å Wavelength Range FEL*, Procs. of 18th Int. FEL Conf., Free Electron Lasers, North Holland, ISBN 0-444-82819-2, II-24 (1997)
4. B. Adams, Y. Nishino, D.V. Novikov, G. Materlik, D.M. Mills, *Parametric down conversion of x-rays, recent experiments*, Nucl. Instrum. and Meth. A **467**, 1019-1020 (2001)
5. B. Adams, *Proposal for a femtosecond x-ray detector*, SRI 2000 conference proceedings, Nucl. Instrum. and Meth. A **467**, 1129-1131 (2001)
6. B. Adams, T. Hiort, G. Materlik, Y. Nishino, D.V. Novikov, *Atom-resolving x-ray holography*, Proceedings of the X-99 conference, X-Ray and Inner Shell Processes, ed. by R.W. Dunford et al., Am. Inst. of Physics, **CP 506**, 549-564 (2000)
7. B. Adams, *Dynamical diffraction of x-rays under conditions of a rapidly changing structure factor: theory and possible applications for femtosecond x-rays*, in Optics for Fourth-Generation X-Ray Sources, Roman O. Tatchyn, Andreas K. Freund, Tadashi Matsushita, Editors, Proc. SPIE Vol. 4500, 89-100 (2001).
8. M.F. DeCamp, D.A. Reis, P.H. Bucksbaum, B. Adams, E.M. Dufresne, R. Clarke, *Acoustic Phonon Dispersion Measured with Time-Resolved X-ray Diffraction*, CLEO-CELS 2002
9. D.A. Reis, M.F. DeCamp, P.H. Bucksbaum, R. Clarke, E.M. Dufresne, R. Merlin, J. Wahlstrand, B. Adams, J.S. Wark, *Time-resolved pendellösung oscillations from impulsively strained crystals*, CLEO-QELS 2002
10. B.W. Adams, *Femtosecond Coherent Control of X-Rays*, Proc. SPIE 5194A (2004)
11. B.W. Adams, K. Attenkofer, M.A. Beno, *Instrumentation for Time-Dependent X-Ray Resonant Raman Scattering*, AIP Conf. Proc. **705**, 1138-1141 (2004)
12. B.W. Adams, *Subpicosecond Coherent Manipulation of X-Rays*, AIP Conf. Proc. **705**, 1395-1398 (2004)
13. B.W. Adams, *Visible/IR light and x-rays in femtosecond synchronism from an x-ray free-electron laser*, Proc. SPIE, Vol. 5920A (2005)
14. B.W. Adams, *Femtosecond Synchronism of X-rays to Visible Light in an XFEL*, FEL 2005 Conference Proceedings, <http://www.jacow.org>
15. J.I. Rudati et al., B. Adams, ..., *SPPS and multiphoton processes*, AIP Conf. Proc. **795**, 212 (2005)
16. A. Grigoriev, D.H. Do, D.M. Kim, C.B. Eom, P. Evans, B.W. Adams, E. Dufresne, *Structural dynamics of PZT thin films on the nanoscale*, Mater. Res. Soc. Symp. Proc. **902E**, T06 (2005)



17. K. Attenkofer, B.W. Adams, *Tunable Highly Efficient Crystal Analyzer Based on Active Optics*, Proc. SPIE 6317 (2006)
18. A. Grigoriev, D.-H. Do, D.M. Kim, C.-B. Eom, P.G. Evans, B.W. Adams, E.M. Dufresne, *Nanosecond structural visualization of the reproducibility of polarization switching in ferroelectrics*, Proc. Int. Symp. Integrated Ferroelectrics (2006)
19. D.M. Fritz, B. Adams, C. Blome, P.H. Bucksbaum et al., *Ultrafast optical and x-ray measurements of femtosecond lattice dynamics in photoexcited bismuth*, WD7, Opt. Soc. Am., 15th International Conference on Ultrafast Phenomena, Jul. 31-Aug. 4 2006
20. B.W. Adams, K. Attenkofer, *Application of a High-Resolution X-Ray Fluorescence Analyzer*, Proc. SRMS-5 Conference, Chicago (2006)
21. A. Grigoriev, D.-H. Do, D.-M. Kim, C.-B. Eom, B.W. Adams, E.M. Dufresne, P.G. Evans, *Time-resolved synchrotron x-ray microdiffraction for studying ferroelectric and multiferroic thin films*, Proc. SRMS-5 Conference, Chicago (2006)
22. Alexei Grigoriev, Dal-Hyun Do, Rebecca Sichel, Paul Evans, Bernhard Adams, Eric Dufresne, *Switching domain dynamics in ferroelectric thin films* APS March meeting 2007
23. E.M. Dufresne, B. Adams, E.C. Landahl, A.M. Khounsary, D. Reis, D.M. Fritz, S. Lee, *Studies of Ultrafast Femtosecond-Laser-Generated Strain Fields with Coherent X-rays*, AIP Conf. Proc. 879, 1210-1213 (2007)
24. Klaus Attenkofer, Nalaka Kodituwakku, Michael Goerlich, Bernhard Adams, Steve K. Ross, Thomas Nielsen, Martin M. Nielsen, David M. Tiede, *Using coplanar wave guides to excite molecular motions in the frequency range of 10-1000GHz* IEEE Proc. IRMMWTHZ 2008, 1-2 (2008)
25. Alexei Grigoriev, Rebecca Sichel, Ho Nuyng Lee, Chang-Beom Eom Zhonghou Cai, Eric C. Landahl, Bernhard Adams, Eric M. Dufresne, Paul G. Evans, *Piezoelectricity and structure of epitaxial ferroic thin films at high electric fields*, abstract W37.007, APS March meeting (2008)
26. E.M. Dufresne, B.W. Adams, D.A. Arms, M.C. Chollet, E.C. Landahl, Y. Li, D.A. Walko, J. Wang *Time-resolved research at the Advanced Photon Source beamline 7ID* Proc. SRI 2009, AIP **1234**, 181-184 (2010)
27. Z. Insepov, V. Ivanov, J. Elam, B. Adams, H. Frisch, *Charge relaxation and gain depletion for candidate secondary electron emission materials*, IEEE Symposium on Nuclear Science NSS/MIC, Knoxville, TN, 2010-10-30..2010-11-06, Proc. pp. 1193-1198
28. B. Adams, K. Attenkofer, M. Bogdan, K. Byrum, C. Chen, E. Delagnes, G. Drake, H. Frisch, H. Grabas, M. Heintz, C. Kao, H. Kim, E. May, R. Northrop, E. Oberla, L. Ruckman, F. Tang, G.

- Varner, M. Wetstein *Considerations about Large area - Low cost Fast Imaging Photo-detectors*, Workshop on Timing Detectors, Krakow, November 2010
29. B. Adams, J.T. Anderson, K. Attenkofer, M. Bogdan, K. Byrum, G. Drake, J. Elam, H.J. Frisch, J.F. Genat, M.K. Heintz, Z. Insepov, V. Ivanov, E.N. May, T. Natoli, K. Nishimura, A. Paramonov, M. Pellin, E. Ramberg, A. Ronzhin, D. Routkevich, L. Ruckman, M. Sanchez, G. Sellberg, O. Siegmund, R. Stanek, F. Tang, A. Tremsin, G. Varner, J. Vavra, H.H. Wang, H. Weerts, M. Wetstein, T. Zhao, A. Zinoviev *A design for large-area fast photo-detectors with transmission-line readout and waveform sampling* 2009 16th IEEE-NPSS Real Time Conf. Beijing, China Springer Conf. Report, pp. 49-61
  30. M. Wetstein, M. Chollet, B. Adams, P. Webster, Z. Insepov, V. Ivanov, S. Jokela, J. Elam, A. Mane, Q. Peng, H. Frisch *Systems-Level Characterization of Microchannel Plate Detector Assemblies, Using a Pulsed sub-Picosecond Laser* Proc. Technology and Instrumentation in Particle Physics 2011 (TIPP 2011), Nucl. Instrum. Meth A (in print)
  31. Anil U. Mane, Qing Peng, Matthew J. Wetstein, Robert G. Wagner, Henry J. Frisch, Oswald H. W. Siegmund, Michael J. Minot, Bernhard W. Adams, Matthieu C. Chollet, Jeffrey W. Elam, *A novel atomic layer deposition method to fabricate economical and robust large area microchannel plates* Proc. SPIE 8031
  32. B. Adams, Z. Insepov, J. Norem, V. Ivanov *Simulations of Fast X-ray Detectors Based On Multichannel Plates* Proceedings of IPAC2012, New Orleans, page 939-941 ISBN 978-3-95450-115-1 (2012)
  33. B.W. Adams, K.J. Kim, *Sub-Ångström stabilization of an x-ray free-electron laser oscillator and nuclear resonance metrology* Proc. FEL 2012, www.jacow.org, accepted for publication
  34. Pice Chen, Margaret Cosgriff, Qingteng Zhang, Sara Callori, Bernhard Adams, Eric Dufresne, Matthew Dawber, Paul Evans *Component-Layer-Dependent Distortion of Striped Domains in PbTiO<sub>3</sub>/SrTiO<sub>3</sub> Superlattices*, APS March meeting 2013
  35. Yuelin Li, Donald Walko, Qingan Li, Yaohua Liu, Stephan Rosenkranz, Hong Zheng, JF Mitchell, Haidan Wen, Eric Dufresne, Bernhard Adams, *Photo-modulated dynamic competition between metallic and insulating phases in a layered manganite*, MRS Proceedings 1636
  36. Bernhard Adams, Andrey Elagin, Henry J Frisch, Mary Heintz, Richard Northrop, Razib Obaid, Matthew Wetstein, *Development of a 20cm-by-20cm hot' indium-alloy hermetic seal in an inert atmosphere for photo-detector assembly* Technology and Instrumentation in Particle Physics 2014, Amsterdam, Netherlands
  37. Bernhard Adams, Andrey Elagin, Jeffrey W. Elam, Henry J Frisch, Joseph Gregar, Anil U. Mane, Michael Minot, Richard Northrop, Aileen O'Mahony, Eric Oberla, Robert G. Wagner,

Matthew Wetstein *The Frugal Tile: A 20-cm-square MCP-PMT Module Comprising 8 Glass Parts* Technology and Instrumentation in Particle Physics 2014, Amsterdam, Netherlands

38. Bernhard Adams, Andrey Elagin, Henry J Frisch, Razib Obaid, Eric Oberla, Robert G. Wagner, Matthew Wetstein, Richard Northrop *Hermetic Packaging and Measurements of the Gain, Time Resolution, and Spatial Resolution of a 20 by 20 cm<sup>2</sup> MCPbased Picosecond Photo-Detector* Am. Phys. Soc. April 2014 meeting
39. Mark A. Popecki, Daniel Bennis, Bernhard Adams, Aileen O'Mahony, Christopher A. Craven, Michael R. Foley, Michael J. Minot, Joseph M. Renaud, Justin L. Bond, Michael E. Stochaj, Klaus Attenkofer, Eli Stavitski, *Development of polycapillary x-ray optics for synchrotron spectroscopy*, Proc. SPIE 9588.0D, 1-7 (2015)
40. D.A. Walko, B.W. Adams, G. Doumy, E.M. Dufresne, Yuelin Li, A.M. March, A.R. Sandy, Jin Wang, Haidan Wen, Yi Zhu *Developments in time-resolved x-ray research at APS beamline 7ID* AIP Conf. Proc. **1741**, 030048 (2015)
41. Stephen M. Durbin, Aamer Mahmood, David Lubelski, Bernhard Adams, *stripline sensors Time-resolved detection of x-ray generated pulses on coplanar stripline sensors*, IEEE Sensors 2015
42. B.W. Adams, E. Angelico, M. Aviles, J.L. Bond, C.A. Craven, T. Cremer, M.R. Foley, H.J. Frisch, A.V. Lyashenko, M.J. Minot, M.A. Popecki, M. Stokaj, W.A. Worstell, *The Large-Area Picosecond Photon Detector (LAPPD TM ), an Ideal Tool for Quantum Optics* Proceedings of Science, ICHEP conference 2016 <https://indico.cern.ch/event/432527/contributions/1072520/>
43. Michael J. Minot, Bernhard W. Adams, Melvin Aviles, Justin L. Bond, Christopher A. Craven, Till Cremer, Michael R. Foley, Alexey Lyashenko, Mark A. Popecki, Michael E. Stochaj, William A. Worstell, Anil U. Mane, Jeffrey W. Elam, Oswald H.W. Siegmund, Camden Ertley, Henry Frisch, Andrey Elagin *Pilot production and advanced development of large-area picosecond photodetectors*, Proc. SPIE 9968.0X, 1-14 (2016), DOI: 10.1117/12.2237331
44. A.V. Lyashenko, B.W. Adams, M. Aviles, T. Cremer, C.D. Ertley, M.R. Foley, M.J. Minot, M.A. Popecki, M.E. Stochaj, W.A. Worstell, J.W. Elam, A.U. Mane, O.H.W. Siegmund, H.J. Frisch, A.L. Elagin, E. Angelico, E. Spieglan *Performance of Large Area Picosecond Photo-Detectors (LAPPD)*. NIMA

## 1.6 Talks and Posters at Conferences, Workshops, Colloquium talks, etc.

1. 1988-07-18..22: IMACS 1988 (Paris), Talk T.19.AM0.C.06: B. Adams, E. Adams, H. Spreuer, *Linear Dynamic Systems with Stochastic Forcing Functions; Theory and Experiment*
2. 1996-08-26..31: FEL 96 (Rome) poster: *Feedback in FEL by an atomic lattice*

3. 1996-08-26..31: FEL 96 (Rome) poster: *Two-Stage Amplifier Scheme with Feedback by Bragg-Reflecting Mirrors in an Å Wavelength Range FEL*
4. 1997-07-03..8: Gordon conference on x-ray physics (Plymouth, NH), poster: *Atomic Holography*
5. 1999-01-12..14: Workshop on Scientific Applications of the LCLS (Stanford) talk: *Nonlinear X-Ray optics*
6. 1999-04-06..09: ICFA 17th Advanced Beam Dynamics workshop (Argonne), discussion leader of nonlinear x-ray optics working group
7. 1999-07-25..30: Gordon conference on x-ray physics (Plymouth, NH), invited talk: *Parametric Down Conversion of X-Rays*
8. 1999-08-23..28: FEL 99 (Hamburg) poster: *Parametric Down Conversion of X-Rays*
9. 1999-11-15..17: Workshop on scientific applications of a 30m long undulator (Spring8), invited talk: *Parametric Down Conversion of X-Ray Photons*
10. 2000-07-13..14: Organized workshop on scientific applications of the TESLA FEL in the fields of nonlinear optics, quantum optics and ultrashort phenomena, (Hamburg)
11. 2000-08-21..25: SRI 2000 (Berlin): poster: *Parametric Down Conversion of X-Rays*
12. 2000-08-21..25: SRI 2000 (Berlin): poster: *Proposal for a Femtosecond X-Ray Detector*
13. 2000-10: Workshop on applications of the LCLS XFEL in material science, Argonne National Lab, talk on *Nonlinear Optics with X-Rays*
14. 2000: Participation in the preparation of the scientific case for the x-ray FEL, part Technical Design Report of the TESLA facility at DESY, since feb. 2001 on the DESY website:  
[http://tesla.desy.de/new\\_pages/TDR\\_CD/start.html](http://tesla.desy.de/new_pages/TDR_CD/start.html)
15. 2001-07-22..27: Gordon conference on x-ray physics (New London, CT), poster: *Coherent Control of Femtosecond X-rays*
16. 7/01: SPIE conference 4500, invited talks: *Dynamical Diffraction of X-Rays under Conditions of a Rapidly Changing Structure Factor: Theory and Possible Applications for Femtosecond X-Rays and Nonlinear Optics and Optical Coherence with X-Rays*
17. 2001-08-22..24: SRI2001 (Madison, WI), invited talk: *Manipulation and Detection of X-rays on the Femtosecond Timescale*
18. 2001-10-18..19: 28th SSRL user's meeting, workshop on metrology with proposed sub-picosecond x-ray pulses (Stanford) talk on *X-Ray/X-Ray Cross-Correlation*

19. 2002-04-14..17: Berkeley workshop on New Opportunities in Ultrafast Science Using X-Rays (Napa valley) 3 Posters: 1) B.W.Adams: *Coherent Control of Femtosecond X-Rays*, 2) B.W. Adams, D.A. Reis, M.F. DeCamp, E.M. Dufresne, *Picosecond Laser Pump, X-Ray Probe Experiment on GaAs*, 3) D.A. Reis, M.F. DeCamp, A. Cavalieri, P.H. Bucksbaum, R. Clarke, R. Merlin, D. Arms, E.M. Dufresne, B. Adams, Z. Chang, *Picosecond Coherent Control of X-Rays*
20. 2003-05-13..16: Indo-US Workshop on Radiation Physics with Synchrotrons and Other New Sources at Argonne National Lab, talk on *Diffraction Subpicosecond Manipulation of X-Rays*
21. 2003-08-03..08: SPIE conference 5194A (San Diego), talk *Femtosecond Coherent Control of X-Rays*
22. 2003-08-03..08: SPIE conference 5194B (San Diego), talk *Proposal for a femtosecond laser/x-ray correlator*
23. 2003-08-25..28: SRI 2003 (San Francisco) poster: B.W. Adams, K. Attenkofer, M.A. Beno, *Instrumentation for Time-Dependent X-Ray Resonant Raman Scattering*
24. 2003-08-25..28: SRI 2003 (San Francisco) poster: B.W. Adams, *Subpicosecond Coherent Manipulation of X-Rays*
25. 2004-03-15..19: Jahrestagung der Deutschen Gesellschaft für Kristallographie (annual meeting of the German Crystallographic Society) (Jena) *plenary talk: Subpicosecond X-Ray Diffraction*
26. 2004-09-07..10: XTOP04 (Prague)talk: *Subpicosecond X-Ray Diffraction*
27. 2005-07-31..08-04, SPIE conferences 5917 and 5920 (San Diego), talk: *Visible/IR Light and X-Rays in Femtosecond Synchronism from an X-Ray Free-Electron Laser*
28. 2005-08-21..26, FEL2005 (Palo Alto, CA) conference, Palo Alto, talk and poster: *Visible/IR Light and X-Rays in Femtosecond Synchronism from an X-Ray Free-Electron Laser*
29. 2006-05-28..06-02: SRI 2006 (Daegu, Korea), talk: E.M. Dufresne, B. Adams, E. Landahl, A. Khounsary, *Studies of Ultrafast fs-laser generated strain fields with coherent X-rays*
30. 2006-05-22..25:, Third International Scientific Seminar “Modern Methods of Diffraction Data Analysis” (Veliky Novgorod Russia), 2 talks, *Femtosecond synchronism of visible/IR light and x-rays from a free-electron laser*, and *Eikonal Takagi-Taupin theory for strongly disturbed crystals*
31. 2006-07-30..08-02, SRMS-5 (Chicago), poster: B.W. Adams, K. Attenkofer, *Application of a High-Resolution X-Ray Fluorescence Analyzer*
32. 2006-07-08-02: SRMS-5 (Chicago) poster: A. Grigoriev, D.-H. Do, D.-M. Kim, C.-B. Eom, B.W. Adams, E.M. Dufresne, P.G. Evans, *Time-resolved synchrotron x-ray microdiffraction for studying ferroelectric and multiferroic thin films*

33. 2006-08-13..17: SPIE, San Diego, talk: K. Attenkofer, B.W. Adams, *Tunable Highly Efficient Crystal Analyzer Based on Active Optics*
34. 2007-01-: Inst. for Quantum Studies, Texas A&M University: talk: *Using the Borrmann effect to modulate nuclear  $\gamma$ -ray superradiance*
35. 2007-02-16..17: Princeton University Symposium on Fundamental Aspects of Quantum Mechanics, talk: *Using the Borrmann effect to modulate nuclear  $\gamma$ -ray superradiance*
36. 2007-04-25..27: SRI 2007 (Baton Rouge, LA), poster: B.W. Adams, K. Attenkofer, “A high-resolution x-ray fluorescence analyzer with large solid-angle coverage and wide tunability”
37. 2007-04-06..07: Princeton University, Symposium on Quantum Mechanics, Informatics, and Control
38. 2007-07-15..21: TAMU-Princeton-Casper College Summer School on Quantum Optics and Molecular Physics (Casper, WY), talk: “Using the Borrmann Effect to Modulate Nuclear  $\gamma$ -ray Superradiance” (invited)
39. 2007-10-02..03: LUSI workshop on “Scientific opportunities for studying laser excited dynamics at the Linac Coherent Light Source”(SLAC), presentation on *Femtosecond synchronism of x-rays and visible light in an XFEL* at the
40. 2008-01-28: Max-Planck Inst. for Quantum Optics, Garching near Munich, invited talk: “Time-resolved Science at the Advanced Photon Source”
41. 2008-06-10..13: SRI 2008 (Saskatoon, Canada) talk: “Time-resolved Science at the Advanced Photon Source”
42. 2009-01-04..08: Physics of Quantum Electronics, PQE 2009 (Snowbird, UT), plenary talk: *Nuclear  $\gamma$ -Ray Superradiance*
43. 2009-06-29: Colloquium talk at the University of Ulm (Germany): Quantum Optics with X-Rays
44. 2009-07-15..16: SAOT workshop on Absorption and Emission Spectroscopy, Erlangen (Germany): *X-Ray Absorption, Fundamentals and Applications*
45. 2009-08-03..07: TAMU/Princeton Workshop on Quantum Science and Engineering, Jackson Hole, Wyoming, talk: *Nuclear  $\gamma$ -ray Superradiance*
46. 2009-11-10: University of Houston, colloquium talk: *Quantum Optics with X-Rays*
47. 2009-12-90..11: European XFEL workshop on femtosecond x-ray experiments, KFKI (Budapest), invited talk: *Femtosecond X-Ray Diffraction Theory*

48. 2009-09-21..25: Topical Workshop on Electronics for Particle Physics, *Position Measurements with Micro-Channel Plates and Transmission lines using Pico-second Timing and Waveform Analysis*
49. 2010-01-03..07: Physics of Quantum Electronics, PQE 2010 (Snowbird, UT), invited talk: *Manipulation of Nuclear  $\gamma$ -Ray Superradiance*
50. 2010-07-13..20: Frontiers of Nonlinear Physics, FNP 2010 (Nizhny Novgorod, Russia), invited talk: *Manipulation of Nuclear  $\gamma$ -Ray Superradiance and other experiments in x-ray quantum optics*
51. 2010-09-21..24: Synchrotron Radiation Instrumentation, SRI 2010 (Argonne, IL), talk: *The hard x-ray streak camera at the Advanced Photon Source*
52. 2010-10-11..13: Workshop on Evolution and Control of Complexity: Key Experiments using Sources of Hard X-Rays (Argonne, IL), session co-chair and talk: *Nonlinear Optics and Quantum Optics with X-Rays*
53. 2011-01-06: Physics of Quantum Electronics (PQE 2011), talk *Manipulation of Nuclear  $\gamma$ -Ray Superradiance*
54. 2011-01-20: University of Bristol (UK), Physics Department: talk *X-Ray Parametric Down Conversion and Other Experiments in X-ray Quantum Optics*
55. 2011-01-21: Diamond Light Source (UK), talk *The Hard X-Ray Streak Camera at the Advanced Photon Source*
56. 2012-01-06: Physics of Quantum Electronics (PQE 2012), plenary talk *X-Ray Quantum Optics*
57. 2012-06-13: HASYLAB, Hamburg, talk *Sub-Ångström Cavity Stabilization of an X-Ray Free-Electron Laser Oscillator and Metrology with Nuclear Resonance*
58. 2012-06-20: University of Vienna (Aspelmeyer group), talk *Sub-Ångström Cavity Stabilization of an X-Ray Free-Electron Laser Oscillator and Metrology with Nuclear Resonance*
59. 2012-07-24: 21st international laser physics workshop (LPHYS 2012), Calgary, Canada, talk *Sub-Ångström Cavity Stabilization of an X-Ray Free-Electron Laser Oscillator and Metrology with Nuclear Resonance*
60. 2012-08-29: FEL 2012 (Nara, Japan), poster: B.W. Adams. K.-J. Kim, *Sub-Å Stabilization of an X-ray Free Electron Laser Oscillator and Nuclear Resonance Metrology*
61. 2012-11-19: Chess, Cornell: talk *The Hard X-ray Streak Camera at the Advanced Photon Source*

62. 2013-01-21: Colloquium at the University of Karlsruhe (Germany), Chemistry Department: *Picosecond Photochemistry Studied with X-Ray Absorption Spectroscopy, using and X-Ray Streak Camera*
63. 2013-02-04: Anka light source, Karlsruhe (Germany): talk *Picosecond Photochemistry Studied with X-Ray Absorption Spectroscopy, using and X-Ray Streak Camera*
64. 2013-02-14: workshop on Science Outlook and R&D Issues for an X-Ray Free-Electron-Laser Oscillator, POSCO International Center, Pohang, Korea: talk *Sub-Ångström stabilized XFEL for nuclear resonance metrology and fundamental physics*
65. 2013-03-28: Colloquium at Illinois Institute of Technology, Physics Department: *Nuclear-Resonance-Stabilized X-Ray Free-Electron Laser Oscillators (NRS-XFEL) for Metrology and Fundamental Physics*
66. 2013-08-25..30, FEL 2013 conference (New York) posters:  
Bernhard Adams, Kwang-Je Kim, Jörg Evers, *Applications of a Stabilized X-Ray Free-Electron Laser Oscillator for Metrology and Fundamental Physics* and Bernhard Adams, Kwang-Je Kim, *X-Ray Comb from a Nuclear-Resonance-Stabilized X-Ray Free-Electron Laser Oscillator (NRS-XFEL)*
67. 2014-12-04: Tea Seminar, Brown University, Chemistry Department *Femtosecond X-ray Spectroscopy at a Synchrotron using Coherence Conversion*
68. 2014-12-05: Physics colloquium, University of Connecticut: *Femtosecond X-ray Spectroscopy at a Synchrotron using Coherence Conversion*
69. 2015-01-14: Physics of Quantum Electronics workshop, Texas A&M University: *Coherence Conversion for Femtosecond X-ray Spectroscopy with Nanosecond X-rays and a Slow Detector*
70. 2015-02-12: Colloquium at Illinois Institute of Technology, Physics Department: *Femtosecond X-ray Spectroscopy at a Synchrotron using Coherence Conversion*
71. 2016-01-08: talk at PQE 2016 conference *Nuclear-Resonance-Stabilized X-Ray Free-Electron Laser Oscillators (NRS-XFEL) for Metrology and Fundamental Physics*
72. 2016-08-09: poster at ICHEP 2016 Chicago *The Large-Area Picosecond Photon Detector (LAP-PDTM ), an Ideal Tool for Quantum Optics* \url{https://indico.cern.ch/event/432527/contributions/1072520/}
73. 2016-09-20: physics colloquium at Old Dominion University, Newport News, VA *The Large-Area Picosecond Photon Detector (LAPPD) and Applications in Quantum Optics*
74. 2016-11-03: talk at IEEE/NSS conference Strasbourg *Capacitive Signal Coupling Through the Vacuum Package in LAPPD TM Detectors*