Ruben Reininger

Employment History

2012⇒ Senior Physicist at the Advance Photon Source, Argonne National Laboratory

2010-12 80% time position as Physicist in charge of Beamline Development at NSLS II, Brookhaven National Laboratory.

- Optical Design of XUV beamlines at NSLS II
- Sources & Optics Interface manager for the NEXT beamlines
- Sources & Optics Interface manager for the ABBIX beamlines

2009-10 60% time position as Physicist in charge of Beamline Development at NSLS II, Brookhaven National Laboratory.

- Design of CSX beamline at NSLS II
- Advice to NSLS-II beamlines

1998-12 Owner, Scientific Answers & Solutions, a consulting company providing services for synchrotron radiation facilities and high tech-companies.

- See Company Projects below

2004-09 Half time position as Senior Scientist in charge of Advanced Monochromators Design at the Synchrotron Radiation Center (SRC), University of Wisconsin-Madison.

- Design of the beamlines for the Wisconsin free electron laser (WIFEL)
- Implementation of the full bending magnet IR microspectroscopy beamline
- Design of a XUV beamline based on an APPLE II undulator
- Optical schemes for micro ARPES

1991-98 Senior Scientist and Instrumentation Group Leader at the Synchrotron Radiation Center (SRC), University of Wisconsin-Madison.

- Led the addition of world-class instrumentation to SRC by authoring, presenting, and implementing all major projects submitted to the National Science Foundation by SRC during my tenure at the facility.
- Managed the instrumentation group, which consisted of two Ph.D., two M.S., and three B.S. The group responsibilities were the development, design, and maintenance of scientific instrumentation, including optical components, monochromators, control software, and detectors.
- Designed the optical layout of two state-of-the-art undulator-based beamlines, one for soft x-rays and one for vacuum ultraviolet radiation.
- Developed and supervised the implementation of a beamline for infrared microspectroscopy.
- Developed the algorithm for scanning a state of the art monochromator.
- Managed the budget allocated for the projects under my supervision.

1986-91 Staff Scientist at the Hamburger Synchrotronstrahlungslabor (HASYLAB) at DESY, Hamburg, Germany.

- Designed and developed an undulator-based beamline for soft x-rays.

- Designed and directed the implementation of the beam position monitors at HASYLAB.
- Managed two vacuum ultraviolet beamlines.
- Supervised two engineers working on the projects mentioned above.

1985-86 Postdoctoral Fellow, Physics Department, University of Pennsylvania.

1983-85 Postdoctoral Fellow, HASYLAB, Hamburg, Germany.

Research Expertise

Conducted research on the optical and electronic properties of gases, liquids and solids, line-shapes, kinetics of excimers and exciplexes, molecular Rydberg states, auto-ionization processes, erasable image plates, and synchrotron radiation instrumentation.

- Expertise in several types of spectroscopies, time resolved measurements, optics, ultra high vacuum, low temperatures, and high pressure.
- Thesis advisor of three Ph.D. students in physics.
- Supervised two post-docs in synchrotron radiation instrumentation.

1995 Recipient of award CHE-9506508 from the National Science Foundation. Proposal entitled "*Density Dependence of Electronic States in Non-Polar Fluids*".

1992 Recipient of award CRG 920574 from NATO in collaboration with scientists from France and Germany. Proposal entitled *"Kinetics and Spectroscopy on Dense Rare Gas Exciplexes*".

Software

Developed programs in FORTRAN, C++, Mathematica, and IGOR.

Education

1983 Ph.D. in Physics, The Hebrew University, Jerusalem, Israel.

1977 M.S. in Medical Physics (with honors), The Hebrew University, Jerusalem, Israel.

1975 B.S. in Physics and Mathematics (with honors), The Hebrew University, Jerusalem, Israel.

Professional Society Membership

American Physical Society.

Related Activities

Member of the advisory committee for grating project at BESSY-II.

Referee for: Journal of Chemical Physics, Chemical Physics, Review of Scientific Instruments, Nuclear Instruments and Methods in Physics Research,

Journal of Synchrotron Radiation, Physics Letters A, and the National Science Foundation

Member of the program committee for three national conferences related to synchrotron radiation instrumentation.

Languages

Fluent in English, Spanish, and Hebrew, knowledge of German

Refereed Publications

1. R. Reininger, U. Asaf, I.T. Steinberger, P. Laporte, and V. Saile, *"Free" Electrons and Excitons in Fluid Krypton*, Phys. Rev. B**26**, 6294 (1982).
2. R. Reininger, U. Asaf, and I.T. Steinberger, *The Density Dependence of the Quasi-Free Electron State in Fluid Xenon and Krypton*, Chem. Phys. Lett. **90**, 287 (1982).
3. R. Reininger, U. Asaf, I.T. Steinberger, and P. Laporte, *Evolution of Photoconductivity in Fluid Xenon*, J. Electrostatics **12**, 123 (1982).
4. R. Reininger, U. Asaf, I.T. Steinberger, and S. Basak, *Relationship Between the Energy Vo of the Quasi-Free Electron and its Mobility in Fluid Argon, Krypton and Xenon*, Phys. Rev. B**28**, 4426 (1983).
5. P. Laporte, V. Saile, R. Reininger, U. Asaf, and I.T. Steinberger, *Photoionization of Xenon Below the Atomic Ionization Potential,* Phys. Rev. A**28**, 3613 (1983).
6. R. Reininger, U. Asaf, I.T. Steinberger, V. Saile, and P. Laporte, *Photoconductivity and the Evolution of Energy Bands in Fluid Xenon*, Phys. Rev. B**28**, 3193 (1983).
7. U. Asaf, R. Reininger, and I.T. Steinberger, *The Energy Vo of the Quasi-Free Electron in Gaseous, Liquid and Solid Methane*, Chem. Phys. Lett. **100**, 363 (1983).
8. R. Reininger, I.T. Steinberger, S. Bernstorff, V. Saile, and P. Laporte, *Extrinsic Photoconductivity in Xenon-Doped Fluid Argon and Krypton*, Chem. Phys. **86**, 189 (1984).
9. R. Reininger, V. Saile, P. Laporte, and I.T. Steinberger, *Photoconduction in Rare-Gas Fluids Doped by Small Organic Molecules*, Chem. Phys. **89**, 473 (1984).
10. R. Reininger, V. Saile, P. Laporte, and I.T. Steinberger, *Enhancement and Quenching of Photoionization in Rare Gas Mixtures*, Chem. Phys. Lett. **111**, 549 (1984).
11. R. Reininger, V. Saile, and P. Laporte, *Photoionization Yield Spectra Below the Atomic Ionization Limit in Xenon*, Phys. Rev. Lett. **54**, 1146 (1985).
12. V. Saile, R. Reininger, A.M. Köhler, and G.L. Findley, *Electric Field Dependence of the Total Excimer Luminescence of Xenon Excited Below the Atomic Ionization Limit*, Nucl. Inst. and Methods A**238**, 558 (1985).
13. P. Laporte, J.L. Subtil, R. Reininger, V. Saile, and I.T. Steinberger, *Wannier Excitons in Liquid and Solid Krypton*, Chem. Phys. Lett. **122**, 525 (1985).
14. A.M. Köhler, R. Reininger, V. Saile, and G.L. Findley, *Density Effects on High-n Molecular Rydberg States: CH_3I in Argon,* Phys. Rev. A**33**, 771 (1986).

15. W. Eberhardt, E.W. Plummer, I.W. Lyo, R. Reininger, R. Carr, W.K. Ford and D. Sondericker, *Auger-Electron Ion Coincidence Studies to Determine the Pathways in Soft X-Ray Induced Fragmentation of Isolated Molecules*, Australian J. Phys. **39**, 633 (1986).
16. A.M. Köhler, R. Reininger, V. Saile, and G.L. Findley, *Density Effects on High n-Molecular Rydberg States. Methyl-Iodide in He, Ne, Ar, and Kr*, Phys. Rev. A**35**, 79, (1987).
17. R. Reininger, V. Saile, and A.M. Köhler, *Photoionization Yield Spectra Below the Atomic Ionization Energy in Argon and Krypton*, J. Phys. B**20**, 2239 (1987).
18. P. Laporte, J.L. Subtil, R. Reininger, V. Saile, S. Bernstorff, and I.T. Steinberger, *Evolution of Intermediate Excitons in Fluid Argon and Krypton*, Phys. Rev. B**35**, 6270 (1987).
19. E. Morikawa, R. Reininger, V. Saile, and P. Laporte, *Diffusion Controlled Quenching of the NO Emission in Rare-Gas Matrices*, Chem. Phys. Lett. **139**, 171 (1987).
20. J.L. Subtil, P. Laporte, R. Reininger, and V. Saile, *VUV Optical Constants of Liquid and Solid Xenon at the Triple Point*, Phys. Stat. Sol. (b) **143**, 783 (1987).
21. V. Saile, R. Reininger, P. Laporte, I.T. Steinberger and G.L. Findley, *Quantum Defect Method and Valence Excitons in Rare Gas Solids*, Phys. Rev. B**37**, 10901 (1988).
22. A.M. Köhler, V. Saile, R. Reininger, and G.L. Findley, *Sudden and Adiabatic Polarization Effects in Doped Rare-Gases*, Phys. Rev. Lett. **60**, 2727 (1988) and **61**, 1327 (1988).
23. E. Morikawa, A.M. Köhler, R. Reininger, V. Saile, and P. Laporte, *Medium Effects on Valence and Low-n Rydberg States: NO in Argon and Krypton,* J. Chem. Phys. **89**, 2729 (1988).
24. E. Morikawa, R. Reininger, P. Gürtler, V. Saile, and P. Laporte, *Argon, Krypton, and Xenon Excimer Luminescence: From the Dilute Gas to the Condensed Phase*, J. Chem. Phys. **91**, 1469 (1989).
25. R. Reininger, E. Morikawa, and V. Saile, *Polarization Energy of an Ion in a Medium: C_6H_6 Doped into Rare Gases*, Chem. Phys. Lett. **159**, 276 (1989).
26. P. Laporte, P. Gürtler, E. Morikawa, R. Reininger, and V. Saile, *Time and Energy Resolved Luminescence of the XeKr Exciplex*, Europhys. Lett. **9**, 533 (1989).
27. R. Reininger and V. Saile, *A Soft X-Ray Monochromator for Undulator Radiation*, Nucl. Instr. and Meth., A**288**, 343 (1990).
28. I.T. Steinberger, U. Asaf, G. Ascarelli, R. Reininger, G. Reisfeld, and M. Reshotko, *Extrinsic Photoconduction and Rydberg States due to a Methyl Iodide Impurity in Xenon*, Phys. Rev. A**42**, 3135 (1990).
29. J. Meyer, R. Reininger and U. Asaf, *Spectral Shift of Autoionizing High-n Rydberg States of CH_3I in Dense Argon: A Photoionization Study*, Chem. Phys. Lett. **173**, 384 (1990).

30. P. Laporte, J.-L. Subtil, R. Reininger, and P. Gürtler, *Time and Energy Resolved Luminescence of the KrAr Exciplex: From the Dilute to the Condensed Phase*, Chem. Phys. Lett. **174**, 61 (1990).
31. H.H. Rüter, H.v. Seggern, R. Reininger, and V. Saile, *VUV-Creation of Photostimulable Centers in BaFBr:Eu_2^+ Single Crystals*, Phys. Rev. Lett. **65**, 2438 (1990).
32. M. Reshotko, U. Asaf, G. Ascarelli, R. Reininger, G. Reisfeld, and I.T. Steinberger, *Impurity Photoconduction, Excitons and Effective Masses in Liquid Xenon*, Phys. Rev. B**43**, 14174 (1991).
33. J. Meyer, R. Reininger, U. Asaf, and I.T. Steinberger, *Autoionization Spectra of CH_3I in Dense Gaseous Methane, Ethane and Propane Observed by Photoconduction*, J. Chem. Phys. **94**, 1820 (1991).
34. E. Audouard, P. Laporte, J.L. Subtil, and R. Reininger, *$^1P_1$ Level Decay in High Pressure Krypton*, J. Chem. Phys., **95**, 3283 (1991).
35. A.R.B de Castro and R. Reininger, *Performance of a SX-700 Monochromator Exposed to Wiggler Radiation: Coupled Ray-Tracing and Finite Element Approach*, Nucl. Instr. and Meth. A **307**, 135 (1991).
36. U. Asaf, I.T. Steinberger, J. Meyer, and R. Reininger, *Electron Scattering in Dense CO_2 Gas: Photoionization Spectra of CH_3I Perturbed by CO_2*, J. Chem. Phys., **95,** 4070 (1991).
37. A.R.B. de Castro and R. Reininger, *Optimization of Undulators for a SX-700 Instrument: Finite-Element Coupled to Ray-Tracing*, Rev. Sci. Instrum. **63**, 1317 (1992).
38. H.H. Rüter, H.v. Seggern, R. Reininger, and V. Saile, *Creation Efficiency of Photostimulable Centers in BaFBr:Eu_2^+ in the VUV and XUV Spectral Range*, Phys. Stat. Sol. (a) **130**, K253 (1992).
39. R. Reininger, *Grating Monochromators for High Power Undulator Sources*, Nucl. Instr. and Meth., A**319**, 110 (1992).
40. J. Meyer, U. Asaf, and R. Reininger, *Vibrational Autoionization of Hot-Bands in Methyl Iodide*, Phys. Rev. A. **46**, 1673 (1992).
41. U. Asaf, J. Meyer, R. Reininger, and I.T. Steinberger, *High Rydberg States of Methyl Iodide Perturbed by Nitrogen: a Mutual Cancellation of Shift Terms*, J. Chem. Phys. **96**, 7885 (1992).
42. J. Meyer, and R. Reininger, *Electric Field Ionization of High Rydberg States and Vertical Ionization Potential of an Impurity in Dense Fluid Argon*, Phys. Rev. A**47**, R3491 (1993).
43. P. Laporte, J.-L Subtil, R. Reininger and P. Gürtler, *Xenon Luminescence in High Pressure Argon: Spectroscopy and Kinetics*, Chem. Phys. **177**, 257 (1993).
44. M. Chergui, R. Reininger, E. Morikawa, and A. Tramer, *Control by Density Effects of the Rydberg-Valence Configuration Mixing in Matrix Isolated NO*, Chem. Phys. Lett. **216**, 34 (1993).

45. A.K. Al-Omari and R. Reininger, *Electric Field Effects in the Photoionization and Photoabsorption of Methyl Iodide*, Chem. Phys. Lett. **220**, 437 (1994).
46. R. Reininger and Mark Bissen, *A High Resolution Variable Line Spacing Spherical Grating Monochromator with a Moveable Exit Slit*, Nucl. Instrum. and Meth. A**347**, 269 (1994).
47. R. Reininger, S.L. Crossley, M.A. Lagergren, M.C. Severson, and R.W.C. Hansen, *A Plane Grating Monochromator for the New Undulator at Aladdin: 8-240 eV*, Nucl. Instrum. and Meth. A**347**, 304 (1994).
48. R. Reininger, P. Laporte, J.-L Subtil, and P. Gürtler, *Xenon Atomic-Like* $^3P_2$ *Radiative Decay in Cold and High Pressure Argon*, Chem. Phys. Lett. **226**, 543 (1994).
49. D.L. Huber, M.A. Green, R. Hansen, H. Höchst, R. Reininger, E. Rowe, W. Trzeciak, and B.P. Tonner, *SRC: Current Activities and Plans for the Future*, Nucl. Instrum. and Meth. A**347**, 49 (1994).
50. A. Krasinsky, U. Asaf, I.T. Steinberger, and R. Reininger, *Photocurrents in Neat Methane and Ethane*, Chem. Phys. Lett. **231**, 536 (1994).
51. A.K. Al-Omari, R. Reininger, and D.L. Huber, *Polarization Energy Distribution of a Positive Ion in Liquid Argon*, Phys. Rev. Lett. **74**, 820 (1995).
52. R. Reininger, M.C. Severson, R.W.C. Hansen, W.R. Winter, M.A. Green, and W.S. Trzeciak, *Vacuum Ultraviolet High Resolution and High Flux Beamline for the Aladdin Storage Ring*, Rev. Sci. Instrum. **66**, 2194 (1995).
53. D.E. Eisert, M. Bissen, M.V. Fisher, R. Reininger, J.P. Stott, and H. Höchst, *Computer Control of the SRC High-Resolution Beamline*, Rev. Sci. Instrum. **66**, 1671 (1995).
54. P. Laporte, J.-L Subtil, R. Reininger, and P. Gürtler, *Collision Induced Decay in Rare-Gases: The Kr* $5s'[1/2]_1(^1P_1)$ *Decay in Dense Argon,* Phys. Rev. Lett. **74**, 1954 (1995).
55. A.K. Al-Omari and R. Reininger, *Density Dependence of the Ionization Potential of* CH_3I *in Argon and of the Quasi-Free Electron Energy in Argon*, J. Chem. Phys. **103**, 506 (1995).
56. A.K. Al-Omari and R. Reininger, *Density Dependence of the Ionization Potential of* CH_3I *in Krypton and of the Quasi-Free Electron Energy in Krypton*, J. Chem. Phys. **103**, 4484, (1995).
57. R. Reininger and A. Al-Omari, *Field Ionization of High Rydberg States of* CH_3I *in Liquid Argon,* 12th International Conference on Spectral Line Shapes, Toronto, Canada, June 1994, AIP Conference Proceedings **328**, 355 (1995).
58. R. Reininger, J.-L. Subtil, C. Vincent-Donnet, P. Laporte and P. Gürtler, *Temperature Dependence of the* Kr^*Ar *Exciplex Emissions Lineshapes*, 12th International Conference on Spectral Line Shapes, Toronto, Canada, June 1994, AIP Conference Proceedings **328**, 408 (1995).

59. A.K. Al-Omari and R. Reininger, *Density Dependence of the Ionization Potential of H_2S in Argon*, Journal of Electron Spectroscopy and Related Phenomena **79**, 463 (1996).
60. A.K. Al-Omari and R. Reininger, *Density and Field Induced autoionization of NO Valence States*, Journal of Electron Spectroscopy and Related Phenomena **79**, 381 (1996).
61. A.K. Al-Omari, K.N. Altmann, and R. Reininger, *Determination of the conduction band energy minimum in fluid argon by means of field ionization*, J. Chem. Phys. **105**, 1305 (1996).
62. R.A. Bosch, T.E. May, R. Reininger, and M.A. Green, *Infrared Radiation from Bending Magnet Edges in an Electron Storage Ring*, Rev. Sci. Instrum. **67,** 3346 (1996).
63. D.A. Mossessian, G.C. Rogers, Mark Bissen, M.C. Severson, and R. Reininger, *System for Monitoring Position of the Photon Beam in the New Undulator Beamline at SRC*, Rev. Sci. Instrum. **67**, 3367 (1996).
64. M.V. Fisher, Tim Kubala, M.C. Severson, and R. Reininger, *Mechanical Design of a Plane Grating Monochromator for the New Undulator at Aladdin*, Rev. Sci. Instrum. **67**, 3351 (1996).
65. E. Gratton, W.W. Mantulin, G. Weber, C.A. Royer, D.M. Jameson, R. Reininger, and R.W.C. Hansen, *Fluorescence Dynamics of Biological Systems Using Synchrotron Radiation,* Rev. Sci. Instrum. **67**, 3363 (1996).
66. I.T. Steinberger, R. Reininger, *Comment on "Effective mass of an excess electron in fluids with high polarizability"*, Chem. Phys. Lett. **258**, 680 (1996).
67. K.N. Altmann, A.K. Al-Omari, and R. Reininger, *Field ionization of Wannier excitons in liquid xenon*, Chem. Phys. Lett. **261**, 597 (1996).
68. J.L. Subtil, C. Jonin, P. Laporte, R. Reininger, F. Spiegelmann, and P. Gürtler, *Exciplex VUV emission spectra of KrAr: Temperature dependence and potentials,* J. Chem. Phys. **105**, 9021 (1996).
69. M.V. Fisher, M. Bissen, F. Bourgeois, D. Eisert, T. Kubala, R. Reininger, and M. Severson, *Precision Motion and Position Control for the Plane Grating Monochromator at SRC,* SPIE **2856**, 212 (1996).
70. A.K. Al-Omari, R. Reininger, and D.L. Huber, T*emperature effect on the ionization potential line-shape of NO doped into dense gaseous argon*, Chem. Phys. Lett. **273**, 402 (1997).
71. Mary Severson, Mark Bissen, Ruben Reininger, Mike Fisher, Greg Rogers, Dave Eisert, Tim Kubala, and William Wood, *Preliminary Results From A New Plane Grating Monochromator at SRC*, AIP Conference Proceedings **417**, 135 (1997).
72. M. Bissen, M. Fisher, R. Reininger, G. Rogers, and H. Höchst, *Expanded Capabilities from SRC's High Energy Resolution Variable Line Density Grating Monochromator Beamline: HERMON*, AIP Conference Proceedings **417**, 17 (1997).

73. Tim Kubala, Mike Fisher, Ruben Reininger, and Mary Severson, *New Actively Bent Mirror at SRC*, Synchrotron Radiation Instrumentation, AIP Conference Proceedings **417**, 130 (1997).
74. K.N. Altmann and R. Reininger, *Density dependence of the conduction-band minimum in fluid krypton and xenon from field ionization of* $(CH_3)_2S$, J. Chem. Phys. **107**, 1759 (1997).
75. A.K. Al-Omari, R. Reininger, and D.L. Huber, *Polarization energy distribution for impurity molecules in dense gases*, J. Chem. Phys. **109**, 7663 (1998).
76. C.M. Evans, R. Reininger, G.L. Findley, *Photoionization Spectra of* CH_3I *Perturbed by* SF_6*: Electron Scattering in* SF_6 *gas*, Chem. Phys. Lett., **297**, 127 (1998).
77. C.M. Evans, R. Reininger, G.L. Findley, *Subthreshold Photoionization Spectra of* CH_3I *Perturbed by* SF_6, Chem. Phys., **241**, 239 (1999).
78. C.M. Evans, R. Reininger, G.L. Findley, *Subthreshold Photoionization of* CH_3I *in Ar,* N_2*, and* CO_2, Chem. Phys. Lett. **322**, 465 (2000).
79. Mary Severson, Mark Bissen, Mike Fisher, Tim Kubala, Greg Rogers, and Ruben Reininger, *Final Results from the SRC Plane Grating Monochromator*, AIP Conference Proceedings 521, 95 (2000).
80. Ruben Reininger, Joseph Feldhaus, and Peter Gürtler*, A Beamline Based on a Varied Line Spacing Grating for Reducing the spectral Bandwidth of the DESY XUV FEL*, AIP Conference Proceedings **521**, 458 (2000).
81. R. Reininger, J. Feldhaus, P. Gürtler, and J. Bahrdt, *Wavefront Propagation Through the Beamline Designed for Seeding the DESY XUV FEL*, Nucl. Instrum. and Meth. A **467**, 38 (2001).
82. R. Reininger, K. Tan, and I. Coulthard, *An insertion device beamline for 5-250 eV at the CLS*, Rev. Sci. Instrum. **73**, 1489 (2002).
83. R. Reininger and T. May, *Wave Propagation Through The Far Infrared Beamline At The CLS*, AIP Conference Proceedings **705**, 462 (2004).
84. R. Reininger, G. De Stasio, M. Bissen, M. Severson, *An Undulator-Wiggler Beamline for Spectromicroscopy at SRC*, AIP Conference Proceedings **705**, 572 (2004).
85. R. Reininger, J. Feldhaus, E. Plönjes, R. Treusch, M.D. Roper, F.M. Quinn, and M.A. Bowler, *Spectrometer Based on a VLS Grating for Diagnostics of a Vacuum-Ultraviolet Free Electron Laser*, AIP Conference Proceedings **705**, 305 (2004).
86. R. Reininger and ARB de Castro, *High resolution, large spectral range, in variable-included-angle soft x-ray monochromators using a plane VLS grating*, Nucl. Instrum. and Meth. A538, 760 (2005).
87. J. Bahrdt, B. Faatz, R. Treusch, V. Miltchev, and R. Reininger, *The Properties Of The FEL Output For Self Seeding,* Proc. FEL 2006, p. 150.
88. R. Feng, A. Gerson, G. Ice, R. Reininger, B. Yates, and S. McIntyre, *VESPERS: A Beamline for Combined XRF and XRD Measurements*, AIP Conference Proceedings **879**, 872 (2007).

89. Y.F. Hu, L. Zuin, R. Reininger, and T.K. Sham, *VLS-PGM Beamline at the Canadian Light Source*, AIP Conference Proceedings **879**, 535 (2007).

90. R. Reininger and S. Dhesi, *The Nanostructures Beamline at Diamond, Optical Design Considerations*, AIP Conference Proceedings **879**, 567 (2007).

91. R. Reininger, J. Bozek, Y-D. Chuang, M. Howells, N. Kelez, S. Prestemon, S. Marks, T. Warwick, C. Jozwiak, A. Lanzara, M. Z. Hasan, and Z. Hussain, *MERLIN - A meV Resolution Beamline at the ALS*, AIP Conference Proceedings **879**, 509 (2007).

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93. M. Severson, M. Bissen, R. Reininger, M.V. Fisher, G. Rogers, T. Kubala, B.H. Frazer, and P.U.P.A. Gilbert, *First Results From The New Varied Line Spacing Plane Grating Monochromator at SRC*, AIP Conference Proceedings **879**, 651 (2007).

94. F. Siewert, H. Lammert, G. Reichardt, U. Hahn, R. Treusch, R. Reininger, *Inspection of a Spherical Triple VLS-Grating for Self-Seeding of FLASH at DESY*, AIP Conference Proceedings **879**, 667 (2007).

95. J. Bisognano, R.A. Bosch, M. Green, H. Hoechst, K. Jacobs, K.J. Kleman, R. Legg, R. Reininger, R. Wehlit, J. Chen, W. Graves, F.X. Kaertner, J-W. Kim, D. *Moncton, The Wisconsin VUV/Soft X-ray Free Electron Laser Project,* Proc. PAC07, 1278 (2007).

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98. M.J. Nasse, R. Reininger, T. Kubala, S. Janowski, and C. Hirschmugl, *Synchrotron infrared microspectroscopy imaging using a multi-element detector (IRMSI-MED) for diffraction-limited chemical imaging*, Nucl. Instrum. and Meth. A**582**, 107 (2007).

99. T. May, T. Ellis, and R. Reininger, *Mid-infrared spectromicroscopy beamline at the Canadian Light Source*, Nucl. Instrum. and Meth. A**582**, 111 (2007).

100. R. Reininger, K. Kriesel, S.L. Hulbert, C. Sánchez-Hanke, and D.A. Arena, *A soft x-ray beamline capable of canceling the performance impairment due to power absorbed on its optical elements*, Rev. Sci. Instr., **79**, 033108 (2008).

101. R. A. Bosch, J. J. Bisognano, M. Bissen, M. A. Green, H. Höchst, K. D. Jacobs, K. J. Kleman, R. A. Legg, R. Reininger, R. Wehlitz, W. S. Graves, F. X. Kärtner and D. E. Moncton, *WiFEL: The Wisconsin Free Electron Laser*, Proceedings of FEL2009, 651-654 (2009).

102. J. Bisognano, M. Bissen, R. Bosch, M. Green, K. Jacobs, H. Hoechst, K. Kleman, R. Legg, R. Reininger, R. Wehlitz, W. Graves, F. Kaertner, D. Moncton, *The Wisconsin Free Electron Laser Initiative*, Proc. PAC09, 1-3 (2009).
103. F. Siewert, R. Reininger and M.A. Rübhausen, *A KB−Focusing Mirror Pair for a VUV−Raman Spectrometer at FLASH − Mirror Metrology and Ray Tracing Results*, AIP Conference Proceedings **1234**, 752 (2010).
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112. V. Ravindranath and S. Sharma and R. Reininger and N. Wang, *Thermo-mechanical analyses of mirror for NSLS-II beamline*, Diamond Light Source Proceedings 1, e55 (2011). doi:10.1017/S2044820110000687
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Presentations

1. *Evolution of Energy Bands in Simple Fluids*, Annual Meeting of HASYLAB Users, Hamburg, FRG, January 1984.
2. *Electronic Properties of Simple Fluids*, Physics Colloquium, Washington State University, Pullman, March 1985.
3. *Electronic Properties of Simple Fluids*, Physics Colloquium, Michigan State University, East Lansing, March 1985.
4. *Electronic Properties of Simple Fluids*, Chemistry Seminar, New-York University, NY, March 1985.
5. *Electronic Properties: From the Gas to the Solid*, Chemistry Colloquium, Brookhaven National Laboratory, Upton, NY, January 1986.
6. *Electronic States in Liquids*, Seminar, BESSY, Berlin, FRG, January 15, 1987.
7. *Photoionization Below Threshold in Rare Gases*, Seminar, The Hebrew University, Jerusalem, Israel, February 16, 1987.
8. *Polarization in Condensed Rare-Gases*, International Workshop on Liquid State Electronics, Berlin, FRG, November 1988.
9. *Monochromators and Associated Optical Equipment*, Synchrotron Radiation and Free Electron Lasers, Chester College, U.K., April 1989.
10. *Beam Position Monitors at HASYLAB*, Workshop on Engineering Design of High Power Photon Beam Position Monitors, ESRF, Grenoble, France, June 1989.
11. *A Soft X-ray Monochromator for a High Power Undulator Beamline*, Seminar, Synchrotron Radiation Center, University of Wisconsin-Madison, Madison, WI, March 8, 1991.
12. *A Soft X-ray Monochromator for a High Power Undulator Beamline*, Seminar, CAMD, Louisiana State University, Baton Rouge, LA, March 11, 1991.
13. *Grating Monochromators for High Power Undulator Sources*, 7th National Conference on Synchrotron Radiation Instrumentation, Louisiana State University, Baton Rouge, LA, October 28-31, 1991.
14. *Beam Position Monitors at HASYLAB*, Seminar, Advanced Photon Source, Argonne National Laboratory, Argonne, IL, February 21, 1992.
15. *A Variable Polarization Undulator Beamline for Aladdin*, Seminar, Advance Light Source, Lawrence Berkeley Laboratory, Berkeley, CA, September 10, 1992.
16. *Field Ionization of Impurity Rydberg States in Dense Rare Gases*, Seminar, Laboratoire de Photophysique Moleculaire, Orsay, Paris, December 11, 1992.

17. *Vertical Ionization of an Impurity Doped in a Dense Medium*, Seminar, Physics Department, Purdue University, W. Lafayette, IN, April 30, 1993.
18. *Design and Performance of the XUV Beamline at HASYLAB*, Seminar, Advanced Photon Source, Argonne National Laboratory, Argonne, IL, September 28, 1994.
19. *Density Induced Autoionization of NO Valence States*, 11th International Conference on Vacuum Ultraviolet Radiation Physics, Tokyo, Japan, August 31, 1995.
20. *Ionization Potential of Doped Molecules in Fluids, from Gas to Liquid*, Seminar, Kobe University, Japan, September 4, 1995.
21. *Studies of Fluorescence Dynamics in Biological Systems Using the Pulsed Structure of the SRC*, Synchrotron Radiation Instrumentation '95, Argonne National Laboratory, Argonne, IL, October 19, 1995.
22. *Normal-Incidence Monochromators at the SRC*, Workshop on Low-Energy High-Resolution Spectroscopy, Lund, Sweden, September 25, 1996.
23. *New Beamlines at SRC*, 80th Canadian Society for Chemistry Conference, Windsor-Ontario, Canada, June 4, 1997.
24. *Undulator Beamlines at the Madison Synchrotron Radiation Center*, Seminar, HASYLAB-DESY, Hamburg, Germany, November 13, 1998.
25. *Wavefront Propagation Through the Beamline Designed for Seeding the DESY XUV FEL*, 7th International Conference on Synchrotron Radiation Instrumentation, Berlin Germany, August 24, 2000.
26. *An Insertion Device Beamline for 5-250 eV at the CLS*, 12th National Synchrotron Radiation Instrumentation Conference, Madison, WI, August 23, 2001.
27. *Preliminary thoughts on an XUV beamline at PETRA,* Workshop on High-Brilliance Soft X-ray Beamline for the PETRA III Storage Ring, Hamburg Germany, November 1, 2002.
28. *A seeding beamline for the XUV FEL at DESY*, Seminar, Diamond Light Source, Chilton, Didcot, Great Britain, July 28, 2003.
29. *A seeding beamline for the XUV FEL at DESY*, Seminar, LNLS, Campinas, Brazil, October 6, 2003.
30. *MERLIN Using a Variable Included Angle*, Seminar, Advanced Light Source, Berkeley, CA, January 16, 2004.
31. *MERLIN Using a Variable Included Angle*, Seminar, Advanced Light Source, Berkeley, CA, March 19, 2004.
32. *Optical Design Studies,* Technical Design Review - Workshop High-Resolution Double Monochromator at the VUV-FEL of the TESLA Test Facility, Hamburg, Germany, April 19, 2004.
33. *The Optical Design of the Nanostructures Beamline at Diamond and other projects*, ALBA, Bellaterra, Spain, March, 14 2005.
34. *The Optical Design of the Nanostructures Beamline at Diamond and other projects*, Australian Synchrotron, Melbourne, Australia, May 4, 2005
35. *MERLIN - A meV resolution beamline at the ALS*, SRI 2006, Daego, S. Korea, May 31, 2006.

36. *Beamline capabilities*, UW FEL Experimental Program Development Workshop, Madison, WI June 18, 2007.
37. *Beamlines performance*, Plans for the Wisconsin Free Electron Laser Facility, Madison, WI October 11, 2007.
38. *CSX beamline design*, Soft X-ray Beamline at NSLS-II workshop, BNL, Upton, NY, February 4, 2008.
39. *Correcting the heat load induced performance degradation on a XUV beamline*, & *Wave Propagation and Figure Errors*, Challenges in Beamline Optics Workshop, Saskatoon, June 10, 2008.
40. *The Wisconsin FEL Project*, SRI 2008, Saskatoon, June 12, 2008.
41. *Very High resolvng power Beamline at SSRF for XUV,* Seminar, NSRL, Hefei, China December 17, 2008
42. *Very High resolving power Beamline at SSRF for XUV,* Seminar, SSFR, Shanghai, China December 18, 2008
43. *A Wide Energy Range Beamline for Electron Spectro-Microscopies at NSLS II,* Electron Spectro-Microscopies with Synchrotron Radiation: Review & Perspectives workshop, Brookhaven National Laboratory, Upton, NY, May 18, 2009
44. *NSLS-II overview and the CSX beamline,* Seminar, Synchrotron Radiation Center, Stoughton, WI, March 19, 2010.
45. *Achieving 10 meV resolution at SIX*, SIX workshop, Brookhaven National Laboratory, Upton, NY, June 11, 2010.
46. *Soft x-ray beamline optics*, Seminar, Brookhaven National Laboratory, Upton, NY, June 18, 2010.
47. *NSLS-II overview and the CSX beamline,* Seminar, Synchrotron SOLEIL, GIF-sur-YVETTE CEDEX, July 22, 2010.
48. *The In-Focus Variable Line Spacing Plane Grating Monochromator,* Invited, SRI 2010, Chicago, Il, US, September 22, 2010.
49. *The Proposed SIX Beamline at NSLS-II*, Invited, VERITAS workshop, MAXLab users meeting, Lund, Sweden, November 10, 2010.
50. *Optical design of the SIX and ESM beamlines for NSLS-II*, Seminar, Diamond Light Source, Chilton, Didcot, UK, November 12, 2010
51. *Requirements and major challenges for x-ray optics at NSLS-II,* Invited ACTOP11, 4th workshop on Adaptive & Active X-ray and XUV optics, Diamond Light Source, Chilton, Didcot, UK, April 5, 2011.
52. *Project, NEXT, ABBIX beamlines at NSLS-II*, Seminar, Advanced Photon Source, IL, November 15, 2011.
53. *The short pulse x-ray beamlines for the APS Upgrade*, Seminar, Photon Sciences/DESY, Hamburg, Germany February 6, 2013.
54. *Optical Design of the Picosecond Beamlines for the APS Upgrade,* Three-Way Meeting, Advanced Photon Source August 2, 2013

55. *Optical Design of the Picosecond Beamlines for the APS Upgrade,* MEADOW Optics workshop, Trieste, Italy, October 30, 2013
56. *Codes for Simulating Performance of Beamlines Using the MBA,* The APS MBA Upgrade: Introduction and Scientific Opportunities, Advanced Photon Source, May 13, 2014.
57. *The hybrid code: combining ray tracing and wave propagation,* MaxLab, Lund, Sweden, September 25, 2014.

Company Projects

1. *Consulting on a VUV beamline,* Center for Advanced Microstructures and Devices (CAMD), Louisiana State University, Baton Rouge, LA, USA; Dr. John Scott.
2. *Design of an ultra high-resolution (>40000 at 800 eV) beamline for soft x-rays at the APS,* Materials Science Division, University of Illinois at Chicago, IL,. USA; Prof. J.C. Campuzano.
3. *Market Survey on the need of Synchrotron Radiation Instrumentation at the X-ray synchrotron radiation facilities in North America,* Physical Sciences Laboratory, University of Wisconsin, Madison, WI; Prof. David Huber.
4. *A beamline based on a variable line spacing grating for LSS2 at SRC,* Synchrotron Radiation Center, University of Wisconsin, Madison, WI, USA; Mr. Mark Bissen.
5. *Study on focusing with mosaic crystals,* X-ray Research GmbH, Hamburg, Germany; Dr. Jules Hendrix.
6. *Optical design of an undulator based beamline equipped with a variable line spacing grating monochromator*, Canadian Light Source, Saskatoon, SK, Canada; Dr. Ian Coulthard.
7. *A coma-correcting grating for the SX700 at HASYLAB*, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; Prof. Thomas Moeller.
8. *Optical design of the photon beamline to serve as an optical seeder for a soft x-ray free electron laser at DESY,* Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; Dr. Rolf Treusch.
9. *Optical design of a high throughput beamline for PEEM at U2*, Synchrotron Radiation Center, University of Wisconsin, Madison, WI, USA; Prof. Pupa de Stasio.
10. *Design of spectrometer based on a VLS grating for diagnostics of a vacuum-ultraviolet Free Electron Laser*, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; Dr. Joseph Feldhaus.
11. *Design and preliminary design reports for the mid and far IR beamlines.Wave propagation through the beamlines*, Canadian Light Source, Saskatoon, SK, Canada; Mr. Tim May, Dr. Emil Hallin.
12. *Design of a XUV beamline for PETRA III*, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; Dr. Edgar Weckert.
13. *Optical design of the nanoscience beamline at Diamond*, Diamond Light Source Limited, Oxfordshire, United Kingdom; Dr. Sarnjeet Dhesi.

14. *Optical Design for a Very High Resolution High Energy Beamline at SRC*, Synchrotron Radiation Center, University of Wisconsin, Madison, WI, USA; Prof. Juan Carlos Campuzano.
15. *Review and study of operation modes of the MERLIN beamline*, Advanced Light Source, Berkeley, CA, USA; Dr. Zahid Hussain.
16. *Advice on the optical design of the SLS IR beamline*, Swiss Light Source, Villigen, Switzerland; Dr. Joerg Wambach.
17. *Optical design of a double monochromator covering the energy range 20-200 capable of meV resolution and high straight light rejection,* Institut für Angewandte Physik, Hamburg University, Hamburg, Germany; Prof. Michael Rübhausen.
18. *Design of a normal incidence bending magnet beamline at the ALS*, Advanced Light Source, Berkeley, CA, USA; Dr. Zahid Hussain.
19. *Review of the optical design of a soft-x-ray spectrometer*, Department of Physics, University of Saskatchewan, Saskatoon, SK, Canada; Prof. Alex Moewes.
20. *Review of the optical design of the soft x-ray spectroscopy beamline at the CLS*, Department of Physics, University of Saskatchewan, Saskatoon, SK, Canada; Prof. Alex Moewes.
21. *Preliminary Design Report of the VESPERS microfocusing x-ray beamline at the CLS*, Surface Science Western,The University of Western Ontario, London, ON, Canada; Prof. Stewart McIntyre.
22. *Preliminary Technical Design Report, The Microdiffraction Fluorescence Probe, Australian Synchrotron*, Applied Centre for Structural and Synchrotron Studies, University of South Australia; Prof. Andrea Gerson.
23. *A Design for a keV beamline with 100000 Resolving Power at the ALS,* Advanced Light Source, Berkeley, CA, USA; Dr. Zahid Hussain.
24. *Intermediate Energy Double Crystal Monochromator Beamline Conceptual Design Report*, Canadian Light Source, Saskatoon, SK, Canada; Dr. Ian Coulthard.
25. *Consulting During Commissioning of the PGM Beamline*, Canadian Light Source, Saskatoon, SK, Canada; Dr. Yonfeng Hu.
26. *Review of the beamline section of the CDR,* 4GLS, Daresbury, United Kingdom; Dr. Frances Quinn, Dr. Mark Roper.
27. *Initial Design of a VUV Undulator Beamline*, 4GLS, Daresbury, United Kingdom; Dr. Frances Quinn, Dr. Mark Roper.
28. *Design of Transport System for the VUV-FEL Output to the Thz Laboratories,* 4GLS, Daresbury, United Kingdom; Dr. Frances Quinn, Dr. Mark Roper.
29. *Design of the XUV beamlines for NSLS II*, NSLS II, Brookhaven National Laboratory, Upton, NY, USA; Dr. John Hill, Dr. Steve Hulbert.
30. *Optical design of the IEX-CDT beamline,* APS, Argonne National Laboratory, Argone, IL, USA; Dr. George Srajer, Prof. Juan Carlos Campuzano.
31. *Consulting During Commissioning of the NanoScience Beamline*, Diamond Light Source Limited, Oxfordshire, United Kingdom; Dr. Sarnjeet Dhesi.

32. *Optical design of the IRMSI-MED beamline at SRC,* University of Wisconsin-Milwaukee, Milwaukee, USA; Prof. Carol Hirschmugl.
33. *Options for Upgrading the 4-ID-C at the APS*, APS, Argonne National Laboratory, Argone, IL, USA; Dr. Richard Rosenberg.
34. *Review of the Optical Design of the ALBA XMCD Beamline*, ALBA Synchrotron Light Facility, Barcelona, Spain; Dr. Alessandro Barla.
35. Advanced Light Source, Berkeley, CA, USA; Dr. David Kilcoyne, Review of SGM upgrade
36. *Consulting During Commissioning of the double monochromator at FLASH,* Institut für Angewandte Physik, Hamburg University, Hamburg, Germany; Prof. Michael Rübhausen.
37. *A microfocusing system for the VLS-PGM beamline*, Canadian Light Source, Saskatoon, SK, Canada; Dr. Yonfeng Hu.
38. *A combined soft-tender beamline for NSLSII*, NIST@NSLS, Upton, NY, USA; Dr. Daniel Fischer.
39. *A ultra-high resolution XUV beamline for SSRF*, Chinese Academy of Sciences, Shangai, China; Prof. Hong Ding.
40. *A Soft X-Ray Beamline for RIXS and XMCD at the ESRF,* ESRF, Grenoble, France; Dr. Nick Brookes.
41. *Consulting on KB mirror performance* Crystal Scientific, United Kingdom, Dr. Simon Cockerton.
42. *Optical design of the the quantum materials spectroscopy center beamline*, Canadian Light Source, Saskatoon, SK, Canada; Dr. Emil Hallin.
43. *Consulting on the optical design of the MAESTRO beamline*, Advanced Light Source, Berkeley, CA, USA, Dr. Zahid Hussain.
44. *Optical Design of the Soft X-Ray Branch at BL5*, SSRL, Stanford, CA, USA; Dr. Donghui Lu.
45. *Consulting on a beamline for HHG*, University of Colorado, Boulder, Prof. D. Dessau
46. *Consulting on a beamline for short pulse soft x-ray beamline for bending magnet 7 at the APS*, Dr. D. Keavney.
47. *Consulting on energy extension of a soft x-ray spectrograph, ALS, Berkeley,* Dr. W. Yang.
48. *Optical designs of the Micro-XRD/XFM (MMC) at an insertion device source and at a bending magnet*, Australian Synchrotron, Dr. Dean Morris