

## John H. Weaver

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### Education:

1967	B.S.	Physics	University of Missouri
1972	Ph.D.	Physics	Iowa State University/Ames Laboratory USDOE

### Professional Experience:

1973	Postdoctoral Fellow, University of Missouri-Rolla
1974-75	Research Associate, Synchrotron Radiation Center, University of Wisconsin-Madison
1975-85	Scientific Associate, Ames Laboratory, USDOE
1975-77	Assistant Scientist, Synchrotron Radiation Center, University of Wisconsin-Madison
1977-82	Associate Scientist, Synchrotron Radiation Center, University of Wisconsin-Madison
1981-82	Adjunct Professor, Materials Science Program, University of Wisconsin-Madison
1982-99	Professor, Department of Chemical Engineering and Materials Science, University of Minnesota
1982-99	Member of Graduate Faculties of Materials Science, Chemical Engineering, Physics, and Chemical Physics
1982-87	Faculty Associate, Argonne National Laboratory
1983-92	Director of Graduate Studies for Materials Science, University of Minnesota
1993	Lecturer, International Center for Condensed Matter Physics, University of Brasilia, Brazil
1994	University Professor, Institute for Materials Research, Tohoku University, Japan
1994	Lecturer, Summer School, Universidad Complutense de Madrid, El Escorial, Spain
1994-96	President-Elect, President, Past-President, American Vacuum Society
1995	Visiting Scientist, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin
1995	Royal Society Kan Tong Po Professor, University of Hong Kong
1997-99	Director of Graduate Studies for Materials Science, University of Minnesota
2000-03	Head, Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign
2000-	Professor of Materials Science & Engineering, University of Illinois at Urbana-Champaign
2000-	Professor of Physics, University of Illinois at Urbana-Champaign
2001-	Research Professor, Micro and Nanotechnology Laboratory, University of Illinois at Urbana-Champaign
2001	Lecturer, 26th International Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, Pakistan
2005	Lecturer, 30th International Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, Pakistan

### Awards and Research Recognition:

1978	Physics News in 1978 (AIP) for Studies of Hydrides
1980	Nominee, USDOE Outstanding Research Award, for Studies of Electronic Interactions of Hydrogen in Metals
1982	G.J. Lapeyre Award for Synchrotron Radiation Research <i>per ardua ad Bremsstrahlung</i>
1986	George Taylor/Institute of Technology Alumni Society Research Award, University of Minnesota
1986	Institute of Technology Student Board Outstanding Professor Award, University of Minnesota
1989	Naval Research Reviews for Studies of Interfaces of High Temperature Superconductors
1990	Physics News in 1990 (AIP) for Cluster Assembly of Interfaces
1991-92	NSF Special Creativity Award
1991	Naval Research Reviews for Studies of Clusters
1991	Physics News in 1991 (AIP) for Studies of Fullerenes and Fullerides
1991	Fellow, American Physical Society
1994-95	Amundson Professorship, University of Minnesota
1995-96	NSF Special Creativity Award
1995	Alexander von Humboldt Senior Research Award
1995	Royal Society Kan Tong Po Professorship, University of Hong Kong
1997	R&D Magazine's Scientist of the Year
1998-	AVS Distinguished Lecturer
1998	Distinguished Achievement Citation, Iowa State University Alumni Association
1999	Medard W. Welch Award, American Vacuum Society
2000	19 <sup>th</sup> Peter G. Winchell Lecturer, Purdue University
2000	Fellow, American Vacuum Society
2001	ISI Highly Cited Researcher (#51 of top 1000 physicists, 1981-1997)

**Awards and Research Recognition:**

- 2003 Kodak Distinguished Lecture, Rensselaer Polytechnic Institute
- 2003 Donald B. Willett Professor, University of Illinois
- 2005 Fellow, American Association for the Advancement of Science
- 2006, 07 Incomplete List of Teachers Listed as Excellent by Their Students.
- 2008 Inaugural group of Outstanding Referees of the American Physical Society
- 2009 Hirsch citation index #63 (~14,000 citations ISI)

**Service and Professional Activities:**

- 1974- Reviewer, Referee, and Arbiter, Science, Nature, Physics Today, Phys. Rev., Phys. Rev. Lett., JVST, Surf. Sci., J. Appl. Phys., Appl. Phys. Lett., J. Am. Chem. Soc., J. Mat. Res., J. Electron Spectros. & Rel. Phenom., Chem. Phys. Lett., NSF, DOE, ARO, and others
- 1976-82 Design Group for the Aladdin Synchrotron Radiation Facility; author of scientific justification in original proposal and several subsequent proposals; author and editor of SRC Abstracts, Newsletter
- 1977-86 Users Executive Committee, Synchrotron Radiation Center, University of Wisconsin-Madison
- 1978-82 Academic Staff Tenure Review Committee for Physical Sciences, University of Wisconsin-Madison
- 1980-82 Materials Science Executive Committee, University of Wisconsin-Madison
- 1981 Program Committee, Second International Conferences on VUV Instrumentation, Cornell University
- 1982-99 Director, Synchrotron Radiation Facility, University of Minnesota
- 1983 Launch Committee, Optical Physics-JOSA Part B
- 1984 Program Committee, New Directions in Photoabsorption Workshop, Asilomar
- 1984-86 Consultant for 3M
- 1984-86 University of Chicago Special Committee for the 7 GeV Synchrotron Light Source
- 1985-90 Surface Science Division, American Vacuum Society; Program Committee 1987; Morton M. Traum Award Committee Chair 1987; Surface Science Program Chair 1988; Division Chair 1989
- 1986 Co-chair, 1st Users Group Meeting of the 7 GeV Advanced Photon Source, Argonne National Laboratory
- 1986-89 Steering Committee, Advanced Photon Source Users Organization
- 1986-89 Electronic Materials and Processing Division AVS; Chair of Student Awards 1987-88; Program Committee 1988
- 1987- NSF Reviews, Panels, and Site Committees
- 1988 Co-chair, Materials Research Society Symposium on Synchrotron Radiation in Materials Research
- 1988-90 Institute of Technology Promotions and Tenure Committee, University of Minnesota (Chair 1990)
- 1988 Program Committee, 4th International Conference on Electron Spectroscopy
- 1989-93 Advisory Board, Microelectronic and Information Sciences Center, University of Minnesota
- 1989-93 Editorial Board, Journal of Vacuum Science and Technology
- 1989-92 Editorial Board, Journal of Materials Research
- 1990-91 Board of Directors, American Vacuum Society
- 1990-94 Principal Editor, Journal of Materials Research
- 1991-95 Editorial Board, Chemistry of Materials
- 1991-00 Editorial Board, Journal of Electron Spectroscopy and Related Phenomena
- 1991- Associate Editor, Surface Science Spectra
- 1991 Co-organizer and Chair, Special Session on Fullerenes, March Meeting of the American Physical Society
- 1991 Organizer and Chair, Special Session on Fullerenes, 38th National Symposium of the American Vacuum Society
- 1992 Program Chair, 39th National Symposium of the American Vacuum Society
- 1992- Associate Editor, Nanostructured Materials
- 1992- Editorial Board, Fullerene Science and Technology
- 1993- DOE Review Panels
- 1993 Co-Chair, Materials Research Society Symposium on Fullerenes and Related Materials
- 1993 International Advisory Board, International Workshop on Fullerenes, St. Petersburg, Russia
- 1993- Editorial Advisory Board, CRC Book Series Chemistry and Physics of Surfaces and Interfaces
- 1994-96 Chair, MRS Medal Award Committee
- 1994 Chair, Univ. Minnesota Microelectronics Laboratory Director Search
- 1994 Local Arrangements Chair, ONR Program Review for Surface and Solid State Chemistry, Minneapolis
- 1995 International Advisory Board, IWEPN '95, Kirchberg, Austria
- 1995 International Advisory Board, International Workshop on Fullerenes and Atomic Clusters, St. Petersburg, Russia
- 1995-01 Surface Science Division, International Union for Vacuum Science, Techniques, and Applications (IUVSTA); Vice Chair 1995-1998; Chair 1998-2001
- 1995 External Examiner, Institute for Studies in Interface Studies, Facultés Univ. Notre-Dame de la Paix, Belgium
- 1996 International Committee for Fullerenes '96
- 1996 Launch Editor for JVST Online
- 1996-97 External Referee, Department of Physics, Royal Institute of Technology, Sweden
- 1996-99 Governing Board of the American Institute of Physics; Executive Committee 1997
- 1997-02 Long Range Planning Committee, American Vacuum Society
- 1998-00 Nanoscale Science & Technology Division, AVS, Vice Chair 1998, Chair 1999, Program Chair 2000

**Service and Professional Activities:**

- 1998-04 Editorial Board, Surface Science Reports  
 1998- Judge, R&D 100 Awards  
 1998- Advisor, Physics Today, book reviewing  
 1998-04 Editorial Board, Surface Review and Letters  
 1998 IUVSTA Prize Committee  
 1998-99 Int Advs Comm, 11th International Conference on Thin Films (ICTF-11)  
 1998-99 Int Advs Comm, 5th Int Conf on Atomically Controlled Surfaces, Interfaces, and Nanostructures (ACSIN-5)  
 1998 Chief Judge, National Science Talent Search, Singapore  
 1999 Army Research Office Board of Visitors  
 1999 Advisory Board, Forecast Study on Molecular Electronics, NRC, Institute for Microstructural Sciences, Canada  
 1999-02 Editorial Board, Royal Society of Chemistry's Electronic Journal PhysChemComm  
 2000 Chair, 6th International Conference on Nanometer Science and Technology  
 2000 Program Committee, 4th International School on the Applications of Surface Science Techniques  
 2000- Editorial Board, R&D Magazine  
 2000-05 Editorial Board, Surface Science  
 2000 Judge, Nottingham Prize  
 2000-01 Int Advis Comm, 6th Int Conf on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN-6)  
 2000-03 Coordinating Committee, Beckman Institute for Advanced Science and Technology, UIUC  
 2001-04 US Councillor, Int Union Vacuum Science, Technique, and Applications (IUVSTA)  
 2001 International Advisory Committee, European Conference on Surface Science, Krakow, Poland  
 2001 Reviewer, Materials Science Division, Argonne National Laboratory  
 2001 Chair of Search Committee, Vice Chancellor for Research, UIUC  
 2001-02 Reviewer, DOE Nanoscience and Technology Centers (Argonne, Berkeley, Brookhaven, Oak Ridge, Sandia/LASL)  
 2001- Advisory Committee, School of Materials Science and Engineering, Seoul National University  
 2002- Thesis Examiner, Physics Department, Quaid-i-Azam University, Islamabad, Pakistan  
 2002-04 Board of Trustees, AVS (Chair 2004)  
 2002-03 Int Advis Comm, 7th Int Conf on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN-7)  
 2002 Co-organizer, 50th Midwest Solid State Conference, University of Illinois at Urbana-Champaign  
 2002 Assessor, Australian Research Council  
 2002 Assessor, Universiti Sains Malaysia  
 2002 Judge, R&D Magazine Innovator of the Year Award  
 2003 Reviewer, Materials Research Science and Engineering Center, University of Maryland  
 2003-05 Materials Science and Technology External Advisory Panel, Sandia National Laboratories  
 2003- Editorial Board, Central European Journal of Physics  
 2003 Site Visitor, Science and Engineering of Materials Program, Arizona State University  
 2003 External Peer Reviewer, Canadian Institute for Advanced Research  
 2003 ACSIN 2003 Prize Committee for Nanometer Science  
 2003-04 Nomination Committee, APS  
 2004 Nomination Committee, AVS  
 2004- International Science Advisory Council, National Center for Physics, Pakistan  
 2004-07 US Alternate Councillor, IUVSTA  
 2004-05 Int Advis Comm, 8th Int Conf on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN-8)  
 2004-05 Int Advis Comm, 13th International Conference on Thin Films (ICTF-13)  
 2005 Reviewer, Condensed Matter Physics and Materials Chemistry, Argonne National Laboratory  
 2005 Program Committee, 65th Annual Physical Electronics Conference  
 2005 Governing Board, American Institute of Physics  
 2005-06 School and Symposium Co-organizer, "Surfaces, Thin Films, Nanostructures, and Applications," Lahore and Islamabad, Pakistan  
 2006 Swedish Research Council Panel for Engineering Sciences  
 2006 Materials Science Review, Texas Advanced Research Program  
 2006- International Advisory Board, Ghulam Ishaq Khan Institute, Northwest Frontier Territories, Pakistan  
 2006 Salam Prize Referee, Pakistan  
 2006-07 Int Advis Comm, 9th Int Conf on Atomically Controlled Surfaces, Interfaces and Nanostructures (ACSIN-9)  
 2007 Co-organizer, 67<sup>th</sup> Annual Physical Electronics Conference  
 2007 COMSATS-IIT Medals for Innovation Committee, Pakistan  
 2007-08 International Advisory Committee, International Conference on Thin Films  
 2008-11 College of Engineering Executive Committee, University of Illinois at Urbana-Champaign  
 2009-10 Chair, Materials Science/Nanoscience panel, Texas Norman Hackerman Advanced Research Program  
 2010 External Reviewer, University of Punjab

**Research Interests:**

Physics and chemistry of surfaces, interfaces, and nanostructures; electronic materials; electronic interactions and morphologies at surfaces and interfaces; clusters and fullerene-based systems; nanostructured materials

**Patents:**

J.H. Weaver, H.M. Meyer III, D.M. Hill, D.L. Nelson, and R.K. Grasselli, "CaF<sub>2</sub> Passivation Layers for High Temperature Superconductors," Patent No. 4,965,244.

J.H. Weaver, H.M. Meyer III, D.M. Hill, D.L. Nelson, and R.K. Grasselli, "Method of Depositing Oxide Passivation Layers on High Temperature Superconductors," Patent No. 5,196,379.

**Monographs and Book Chapters:**

1. J.H. Weaver, C. Krafka, D.W. Lynch, and E.E. Koch, *Optical Properties of Metals I: Transition Metals,  $0.1 \leq h\nu \leq 500$  eV*, Zentralstelle für Atomkernenergie-Dokumentation, ZAED, 1981, 344 pp.
2. J.H. Weaver, C. Krafka, D.W. Lynch, and E.E. Koch, *Optical Properties of Metals II: Noble Metals, Aluminum, Lanthanides, and Actinides,  $0.1 \leq h\nu \leq 500$  eV*, ZAED, 1981, 320 pp.
3. J.H. Weaver, "Optical Properties of Metals," *CRC Handbook of Chemistry and Physics*, 64th Edition, E368-383 (1983-84) and subsequent printings (CRC Press, Boca Raton, Florida).
4. G. Margaritondo and J.H. Weaver, "Photoemission Spectroscopy of Valence States," Chapter 3 in *Methods in Experimental Physics: Surfaces*, edited by M.G. Lagally and R.L. Park (Academic Press, NY) 1985, pp. 127-185.
5. J.H. Weaver et al., "High T<sub>c</sub> Superconductors: Occupied and Unoccupied Electronic States, Surface Stability, and Interface Formation," Chapter 21 in *Chemistry of High-Temperature Superconductors*, edited by D.L. Nelson, M.S. Whittingham, and T.F. George, ACS Symposium Series 351, pp. 212-225 (1987).
6. J.H. Weaver, "Synchrotron Radiation Studies of Surfaces and Interfaces," Chapter 2 in *Analytical Techniques for Thin Films*, edited by K.N. Tu and R. Rosenberg (Academic Press, NY, 1988) pp. 15-63.
7. D.W. Lynch and J.H. Weaver, "Photoemission of Ce and Its Compounds," Chapter 66 in *High Energy Spectroscopy, Handbook on the Physics and Chemistry of Rare Earths*, Vol. 10, edited by K. A. Gschneidner and L. Eyring (North-Holland, Amsterdam, 1988) pp. 231-319.
8. D. Sahn, A. Langner, T.F. George, J.H. Weaver, H.M. Meyer III, D.L. Nelson, and A. Wold, "Overview of High Temperature Superconductivity: Theory, Surfaces, Interfaces, and Bulk Systems," Chapter 1 in *Physical Chemistry of High Temperature Superconductors*, edited by T.F. George and D.L. Nelson ACS Symposium Series 377, pp. 1-15 (1988).
9. H.M. Meyer III, D.M. Hill, J.H. Weaver, and D.L. Nelson, "Surface and Interface Properties of High Temperature Superconductors," Chapter 21 in *Physical Chemistry of High Temperature Superconductors*, edited by T.F. George and D.L. Nelson, ACS Symposium Series 377, pp. 280-290 (1988).
10. *Synchrotron Radiation in Materials Research*, Materials Research Society Proceedings, Vol. 143, edited by R. Clarke, J. Gland, and J.H. Weaver (1989).
11. J.H. Weaver, Zhangda Lin, and F. Xu, "Surface Segregation at Evolving Metal/Semiconductor Interfaces," Chapter 10 in *Surface Segregation Phenomena*, edited by P.A. Dowben and A. Miller (CRC Press, Boca Raton, 1990) pp. 259-289.
12. H.M. Meyer III and J.H. Weaver, "Electronic Structure, Surface Properties, and Interface Chemistry of High Temperature Superconductors," Chapter 6 in *Physical Properties of High Temperature Superconductors II*, edited by D.M. Ginsberg (World Scientific, Singapore, 1990) pp. 369-457.
13. J.H. Weaver, "The Formation and Properties of Metal-Semiconductor Interfaces," Chapter 8 in *Electronic Materials: A New Era of Materials Science*, Springer Series in Solid-State Sciences, Vol. 95, edited by J.R. Chelikowsky and A. Franciosi (Springer-Verlag, Berlin, 1991) pp. 135-214.
14. C.M. Aldao and J.H. Weaver "Atomic-Scale Chemistry of Metal-Semiconductor Interfaces," Chapter 7 in *Contacts to Semiconductor Surfaces*, edited by L.J. Brillson (Noyes Publication, New Jersey, 1993) pp. 465-555.
15. J.H. Weaver, "Overlay Formation on High Temperature Superconductors," Chapter 7 in *Interfaces in Superconducting Systems*, edited by S. Shindé and D. Rudman (Springer-Verlag, Berlin, 1993) pp. 210-235.
16. J.H. Weaver, G.D. Waddill, I.M. Vitomirov, and C.M. Aldao, "Cluster-Assembled Interfaces," in *On Clusters and Clustering: From Atoms to Fractals*, edited by Peter J. Reynolds (North Holland, 1993) pp. 179-192.

17. J.H. Weaver and H.P.R. Frederikse, "Optical Properties of Metals and Semiconductors," *CRC Handbook of Chemistry and Physics*, 74th Edition and subsequent printings (CRC Press, Boca Raton, Florida) pp. 12-109 – 12-131.
18. J.H. Weaver and D.M. Poirier, "Solid State Properties of Fullerenes and Fullerene-Based Materials," Chapter 1 in *Fullerene Fundamentals*, Solid State Physics Vol. 48, edited by H. Ehrenreich and F. Spaepen (Academic Press, Cambridge, 1994) pp. 1-108.
19. D.M. Poirier and J.H. Weaver, "Standard and Reference XPS Spectra for Cleaved Semiconductors: Group IV, III-V, and II-VI [Si(111), Ge(111), GaP(110), GaAs(110), InP(110), InAs(110), InSb(110), CdS, CdTe(110), diamond, graphite, and C<sub>60</sub>]," Special Issue of Surface Science Spectra (1993/1994) pp. 195-269.
20. J.H. Weaver, "Fullerenes Viewed with STM, Photoemission, and Inverse Photoemission," Chapter 17 in the *Handbook of Surface Imaging and Visualization*, edited by A. Hubbard (CRC Press, Boca Raton, Florida, 1995), pp. 215-222.
21. B.Y. Han and J.H. Weaver, "Spontaneous and Laser-enhanced Halogen Etching of GaAs," Special issue featuring Surface Science and Interfaces of Journal of Physics: Condensed Matter **10**, 7723-7742 (1998).
22. J.H. Weaver and C.M. Aldao, "Spontaneous Halogen Etching of Si," in *Morphological Organizations during Epitaxial Growth*, edited by Z.Y. Zhang and M.G. Lagally (World Scientific Series on Directions of Condensed Matter Physics, 1999) pp. 453-484.
23. C.M. Aldao and J.H. Weaver, "Halogen Etching of Si via Atomic-scale Processes," Review Article, Progress in Surface Science **68**, 189-230 (2001).

#### Feature Articles:

24. E.M. Rowe and J.H. Weaver, "The Uses of Synchrotron Radiation," Scientific American **236**, 32-41 (1977).
25. J.H. Weaver and E.M. Rowe, "Synchrotron Radiation and Its Influence on Modern Science: A Tutorial Article," Physics Teacher **15**, 268-274 (1977).
26. D.L. Westlake, C.B. Satterthwaite, and J.H. Weaver, "Hydrogen in Metals," Physics Today **31**, 32-39 (1978), and cover photo.
27. J.H. Weaver and G. Margaritondo, "Solid State Photoelectron Spectroscopy with Synchrotron Radiation," Science **206**, 151-156 (1979), and cover photo.
28. G. Margaritondo and J.H. Weaver, "Synchrotron Radiation Resource Letter," American Journal of Physics **52**, 590-597 (1984).
29. J.H. Weaver, "Metal/Semiconductor Interfaces," Physics Today **39**, 24-30 (1986), and cover photo. Translated into Japanese in Parity **1**, 2-11 (1986) and Parity **3**, 74-83 (1987).
30. D.L. Nelson, D. Sahn, A. Langner, T.F. George, J.H. Weaver, H.M. Meyer, and A. Wold, "Overview of High-Temperature Superconductivity: Theory, Surfaces, Interfaces, and Bulk Systems," Naval Research Reviews, Office of Naval Research, Four / 1988 - One / 1989, Vol. XL / XLI, pp. 15-23.
31. J.H. Weaver and G.D. Waddill, "Cluster-Assembly of Interfaces: Nanoscale Engineering," Science **251**, 1444-1451 (1991).
32. J.H. Weaver, "Clusters, Their Growth, and Their Interaction with Surfaces," Naval Research Reviews, Office of Naval Research, Three / 1991, Vol XLII, pp. 16-27.
33. Y.Z. Li and J.H. Weaver, "Direct Imaging of Fullerenes using Scanning Tunneling Microscopy," Research and Development Magazine, Vol. 33, December 1991, pp. 38-40.
34. J.H. Weaver, "Fullerenes and Fullerides: Photoemission and Scanning Tunneling Microscopy Studies," Accounts of Chemical Research **25**, 143-149 (1992).
35. J.H. Weaver, "Have buckyballs been put to any practical use?" in Ask the Experts, Scientific American Online, Week of July 7, 1997 <www.sciam.com/>.
36. J.J. Boland and J.H. Weaver, "A Surface View of Etching," Physics Today **51**, 34-40 (1998).

## Refereed Publications:

37. D.W. Lynch, R. Rosei, and J.H. Weaver, "Infrared and Visible Optical Properties of Single-Crystal Ni at 4 K," *Solid State Commun.* **9**, 2195-2199 (1971).
38. J.H. Weaver, D.W. Lynch, and R. Rosei, "Optical Properties of Single-Crystal Zinc," *Phys. Rev. B* **5**, 2829-2835 (1972).
39. J.H. Weaver and D.W. Lynch, "Low Energy Optical Absorption in ReO<sub>3</sub>," *Phys. Rev. B* **6**, 3620-3623 (1972).
40. J.H. Weaver, D.W. Lynch, and R. Rosei, "Optical Properties of Single-Crystal Be from 0.1 to 4.5 eV," *Phys. Rev. B* **7**, 3537-3541 (1973).
41. J.H. Weaver, D.W. Lynch, and C.G. Olson, "Optical Properties of Nb from 0.1 to 36.4 eV," *Phys. Rev. B* **7**, 4311-4318 (1973).
42. J.H. Weaver and D.W. Lynch, "Absorptivity of Single-Crystal Yttrium at 4.2 K," *Phys. Rev. B* **7**, 4737-4739 (1973).
43. R.W. Alexander, R.J. Bell, C.A. Ward, J.H. Weaver, I.L. Tyler, and B. Fischer, "Possible Applications of Surface Electromagnetic Waves to Measure Absorption Coefficients," *J. Chem. Phys.* **59**, 3492-3494 (1973).
44. J.H. Weaver, R.W. Alexander, L. Teng, R.A. Mann, and R.J. Bell, "Infrared Absorption of Small Silicon Particles with Oxide Overlayers," *Physica Status Solidi (a)* **20**, 321-329 (1973).
45. D.W. Lynch, R. Rosei, J.H. Weaver, and C.G. Olson, "Optical Properties of Some Alkali Metal Tungsten Bronzes from 0.1 to 38 eV," *J. Solid State Chem.* **8**, 242-252 (1973).
46. R. Rosei, C.H. Culp, and J.H. Weaver, "Temperature Modulation of the Optical Transitions Involving the Fermi Surface in Ag: Experimental," *Phys. Rev. B* **10**, 484-489 (1974).
47. E. Amrhein, N.J. Kreidl, D.E. Day, and J.H. Weaver, "Far Infrared Spectra of Polynary Chalcogenide Glasses," *J. Non-Crystalline Solids* **15**, 526-539 (1974).
48. J.H. Weaver, D.W. Lynch, and C.G. Olson, "Optical Properties of V, Ta, and Mo from 0.1 to 35 eV," *Phys. Rev. B* **10**, 501-516 (1974).
49. J.H. Weaver, C.A. Ward, G.S. Kovener, and R.W. Alexander, "Infrared Lattice Vibration Spectra of MnF<sub>2</sub>," *J. Phys. Chem. Solids* **35**, 1625-1628 (1974).
50. D.W. Lynch, R. Rosei, and J.H. Weaver, "Infrared Absorption of Chromium-Rich Cr-Fe, Cr-Co, and Cr-Ni Alloys at 4.2 K," *Physica Status Solidi (a)* **27**, 515-522 (1975).
51. J.H. Weaver, C.G. Olson, D.W. Lynch, and M. Piacentini, "Thermoreflectance of Mo from 0.5 to 35 eV," *Solid State Commun.* **16**, 163-166 (1975).
52. J.H. Weaver, "Optical Properties of Rh, Pd, Ir, and Pt," *Phys. Rev. B* **11**, 1416-1425 (1975).
53. D.W. Lynch, C.G. Olson, and J.H. Weaver, "Optical Properties of Ti, Zr, and Hf from 0.15 to 30 eV," *Phys. Rev. B* **11**, 3617-3624 (1975).
54. J.H. Weaver, D.W. Lynch, and C.G. Olson, "Optical Properties of Crystalline Tungsten," *Phys. Rev. B* **12**, 1293-1297 (1975).
55. J.H. Weaver and R.L. Benbow, "Low Energy Interband Absorption in Pd," *Phys. Rev. B* **12**, 3509-3510 (1975).
56. J.H. Weaver and D.W. Lynch, "Anisotropic Optical Properties of Heavy-Rare-Earth Single Crystals," *Phys. Rev. Lett.* **34**, 1234-1237 (1975).
57. J.H. Weaver, D.W. Lynch, C.H. Culp, and R. Rosei, "Thermoreflectance Studies of V, Nb, and Paramagnetic Cr," *Phys. Rev. B* **14**, 459-463 (1976).
58. J.H. Weaver and C.G. Olson, "Optical Absorption in the 4d Transition Metals from 20 to 250 eV," *Phys. Rev. B* **14**, 3251-3255 (1976).
59. J.H. Weaver and C.G. Olson, "Optical Absorption of hcp Yttrium," *Phys. Rev. B* **15**, 590-594 (1977).

60. J.H. Weaver, R.L. Benbow, and Z. Hurych, "Direct Emission and Auger Decay from Multiplet Final States in Zr Observed by Ultraviolet Photoemission CFS Techniques," *Solid State Commun.* **21**, 173-175 (1977).
61. J.H. Weaver and C.G. Olson, "Interband Structure and the Role of the 5f Electron in Thorium: An Optical Investigation," *Phys. Rev. B* **15**, 4602-4606 (1977).
62. J.H. Weaver, C.G. Olson, and D.W. Lynch, "An Optical Investigation of the Electronic Structure of Bulk Rh and Ir," *Phys. Rev. B* **15**, 4115-4118 (1977).
63. J.H. Weaver and C.G. Olson, "An Optical Examination of the Electronic Structure of Single Crystal hcp Scandium," *Phys. Rev. B* **16**, 731-735 (1977).
64. J.H. Weaver, J.A. Knapp, D.E. Eastman, D.T. Peterson, and C.B. Satterthwaite, "Electronic Structure of the Thorium Hydrides ThH<sub>2</sub> and Th<sub>4</sub>H<sub>15</sub>," *Phys. Rev. Lett.* **39**, 639-642 (1977).
65. J.H. Weaver and D.T. Peterson, "The Influence of Interstitial Hydrogen on the Band Structure of Nb and Ta: An Optical Study of NbH<sub>0.453</sub> and TaH<sub>0.257</sub>," *Phys. Lett. A* **62**, 433-435 (1977).
66. J.H. Weaver, R. Rosei, and D.T. Peterson, "Optical Interband Structure and the Low Energy Plasmon in ScH<sub>2</sub>," *Solid State Commun.* **25**, 201-203 (1978).
67. J.H. Weaver, "Optical Spectroscopy of Bulk Metals," in *Transition Metals 1977*, eds. M.J.G. Lee, J.M. Perz, and E. Fawcett (Institute of Physics Conf. Series No. 39, AIP, NY, 1978) pp. 115-127, Chapter 2.
68. R.E. Dietz, L.F. Mattheiss, and J.H. Weaver, "5d Band Structure Effects on the Line Shapes and Intensities of Core Electronic Excitations in Pt," in *Transition Metals 1977*, eds. M.J.G. Lee, J.M. Perz, and E. Fawcett, (Institute of Physics Conf. Series No. 39, NY, 1978) pp. 1435-1438.
69. J.H. Weaver, E. Colavita, D.W. Lynch, and R. Rosei, "Low Energy Interband Structures in bcc Fe and hcp Co," *Phys. Rev. B* **19**, 3850-3856 (1979).
70. J.H. Weaver, R. Rosei, and D.T. Peterson, "Electronic Structure of Metal Hydrides I: Optical Studies of ScH<sub>2</sub>, YH<sub>2</sub>, and LuH<sub>2</sub>," *Phys. Rev. B* **19**, 4855-4866 (1979).
71. D.J. Peterman, B.N. Harmon, J. Marchiando, and J.H. Weaver, "Electronic Structure of Metal Hydrides II: Band Theory of ScH<sub>2</sub> and YH<sub>2</sub>," *Phys. Rev. B* **19**, 4867-4875 (1979).
72. G. Margaritondo, J.H. Weaver, and N.G. Stoffel, "Photon Polarization Effects in Angle-Integrated Photoemission Spectroscopy: A Simple Geometry," *J. Phys. E* **12**, 662-664 (1979).
73. J.H. Weaver, D.T. Peterson, and R.L. Benbow, "Electronic Structure of Metal Hydrides III: Photoelectron Spectroscopy Studies of ScH<sub>2</sub>, YH<sub>2</sub>, and LuH<sub>2</sub>," *Phys. Rev. B* **20**, 5301-5312 (1979).
74. J.H. Weaver and D.T. Peterson, "Photoelectron Spectroscopy of Metal Dihydrides," *Zeitschrift für Physikalische Chemie* **116**, 501-506 (1979).
- 1980** 75. J. Barth, F. Gerken, K.L.I. Kobayashi, J.H. Weaver, and B. Sonntag, "3p-3d Intershell Interaction in Cr," *J. Phys. C (Solid State)* **13**, 1369-1375 (1980).
76. D.W. Lynch, C.G. Olson, D.J. Peterman, and J.H. Weaver, "Optical Properties of TiC<sub>x</sub> (0.64 ≤ x ≤ 0.90) from 0.1 to 30 eV," *Phys. Rev. B* **22**, 3391-3397 (1980).
77. R. Rosei, E. Colavita, A. Franciosi, J.H. Weaver, and D.T. Peterson, "Electronic Structure of the bcc Transition Metals: Thermoreflectance Studies of Bulk V, Nb, Ta, and α-TaH<sub>x</sub>," *Phys. Rev. B* **21**, 3152-3157 (1980).
78. R.E. Dietz, E.G. McRae, and J.H. Weaver, "Core Electron Excitation Edges in Metallic Ni, Cu, Pt, and Au," *Phys. Rev. B* **21**, 2229-2247 (1980).
79. D.J. Peterman, D.T. Peterson, and J.H. Weaver, "Optical and Photoemission Studies of Lanthanum Hydrides," *J. Less-Common Metals* **74**, 167-174 (1980).
80. J.H. Weaver and D.T. Peterson, "Electronic Structure of Metal Hydrides," *J. Less-Common Metals* **74**, 207-216 (1980).

81. J.H. Weaver and D.T. Peterson, "Photoelectron Spectroscopy Study of the Bulk Band Structure of FeTi," Phys. Rev. B **22**, 3624-3628 (1980).
82. J.H. Weaver and F.A. Schmidt, "Electronic Structure of TiC and NbC: A Photoelectron Spectroscopy Study," Phys. Lett. A **77**, 73-76 (1980).
83. G. Margaritondo, R. Rosei, J.H. Weaver, and W.M. Becker, "Direct Comparison Between Gas-Phase and Solid State Hg 5d Photoionization Processes," Solid State Commun. **34**, 401-404 (1980).
84. J.H. Weaver, A.M. Bradshaw, J.F. van der Veen, F.J. Himpsel, and D.E. Eastman, "Angle-Resolved Photo-emission Studies of TiC(111) and TiC(100)," Phys. Rev. B **22**, 4921-4930 (1980).
85. J.H. Weaver, "Low-Energy Optical Absorption in a-Uranium Metal," J. Opt. Soc. Amer. **70**, 1030-1031 (1980).
86. J.H. Weaver, A. Franciosi, W.E. Wallace, and H. Kevin Smith, "Bulk Electronic Structure and Surface Oxidation of LaNi<sub>5</sub>, Er<sub>6</sub>Mn<sub>23</sub>, and Related Systems," J. Appl. Phys. **51**, 5847-5851 (1980).
87. J. Barth, R. Bruhn, B. Sonntag, and J.H. Weaver, "Influence of Intershell Interaction in the 3d and 5d Branching Ratios of Cu and Au," Phys. Lett. **78A**, 331-332 (1980).
88. M. Campagna, W. Gudat, R. Rosei, J.H. Weaver, W. Eberhardt, E. Kaldis, and F. Hulliger, "4f Levels in Ce Pnictides and Ce Chalcogenides by Resonant Photoemission with Synchrotron Radiation," Physica B **102**, 367 (1980).
- 1981** 89. J.H. Weaver, V.L. Moruzzi, and F.A. Schmidt, "Experimental and Theoretical Band Structure Studies of Refractory Metal Silicides," Phys. Rev. B **23**, 2916-2922 (1981).
90. J.H. Weaver, D.J. Peterman, D.T. Peterson, and A. Franciosi, "Electronic Structure of Metal Hydrides IV: TiH<sub>x</sub>, ZrH<sub>x</sub>, HfH<sub>x</sub>, and the fcc-fct Lattice Distortion," Phys. Rev. B **23**, 1692-1698 (1981).
91. D.J. Peterman, J.H. Weaver, and D.T. Peterson, "Electronic Structure of Metal Hydrides V: x-Dependent Properties of LaH<sub>x</sub> (1.6 ≤ x ≤ 2.9) and NdH<sub>x</sub> (2.01 ≤ x ≤ 2.27)," Phys. Rev. B **23**, 3903-3913 (1981).
92. W. Gudat, M. Campagna, R. Rosei, J.H. Weaver, W.E. Eberhardt, F. Hulliger, and E. Kaldis, "Surface Binding Energy Shifts, Mixed Valence and Localization of 4f Electrons: Ce vs. Sm," J. Appl. Phys. **52**, 2123-2128 (1981).
93. M. Croft, A. Franciosi, J.H. Weaver, and A. Jayaraman, "Resonant Photoemission in CeS and CeP," Phys. Rev. B **24**, 544-548 (1981).
94. M. Croft, J.H. Weaver, D.J. Peterman, and A. Franciosi, "Fundamental Parameters and Mechanisms in the Ce Problem: Photoemission Results on CeAl<sub>2</sub> and CeAl<sub>2</sub> Alloys," Phys. Rev. Lett. **46**, 1104-1107 (1981).
95. A. Franciosi, D.J. Peterman, and J.H. Weaver, "Silicon Refractory-Metal Interfaces: Evidence of Room Temperature Intermixing for Si-Cr," J. Vac. Sci. Technol. **19**, 657-660 (1981).
96. J.H. Weaver, C. Krafska, D.W. Lynch, and E.E. Koch, "Optical Properties of Metals," Applied Optics **20**, 1124-1125 (1981).
97. A. Franciosi, J.H. Weaver, N. Mårtensson, and M. Croft, "Evidence of 4f Photoemission Satellites in Cerium Compounds," Phys. Rev. - Rapid Commun. B **24**, 3651-3654 (1981).
98. M. Croft, J.H. Weaver, A. Franciosi, D.J. Peterman, and A. Jayaraman, "4f Level Energy, Width, and Volume Coupling in Ce Compounds," in Valence Fluctuations in Solids, eds. L.M. Falicov, W. Hanke, and M.B. Maple (North-Holland Publishing Company, 1981) pp. 401-404.
99. D.J. Joyner, O. Johnson, D.M. Hercules, D.W. Bullett, and J.H. Weaver, "A Study of the Iron Borides IV: Relation of Bonding to Structure and Magnetic Behavior from Photoemission and *ab initio* Calculations," Phys. Rev. B **24**, 3122-3137 (1981).
100. M. Aono, T.-C. Chiang, J.H. Weaver, and D.E. Eastman, "Anomalous Two-Electron Auger Resonance in Thorium near the 5d(O<sub>5</sub>) Photothreshold," Solid State Commun. **39**, 1056-1060 (1981).
101. M.G. Mason, S.T. Lee, G. Apai, R.F. Davis, D.A. Shirley, A. Franciosi, and J.H. Weaver, "Particle Size Induced Valence Changes in Samarium Clusters," Phys. Rev. Lett. **47**, 730-733 (1981).



102. G. Margaritondo, C.M. Bertoni, J.H. Weaver, F. Levy, N.G. Stoffel, and A.D. Katnani, "Density of States Changes near the Fermi Level and the Lattice Instability in  $\text{TiSe}_2$ ," *Phys. Rev. B* **23**, 3765-3769 (1981).
- 1982**
103. A. Franciosi, D.J. Peterman, J.H. Weaver, and V.L. Moruzzi, "Structural Morphology and Electronic Properties of the Si-Cr Interface," *Phys. Rev. B* **25**, 4981-4993 (1982).
104. Y. Chabal, A. Franciosi, J.H. Weaver, J.E. Rowe, and J.M. Poate, "Stoichiometric and Structural Disorder Effects in the Electronic Structure of Ni and Pd Silicides," *Phys. Rev. B* **26**, 2748-2758 (1982).
105. J.H. Weaver, A. Franciosi, D.J. Peterman, T. Takeshita, and K.A. Gschneidner, Jr., "Electronic Structure and Surface Oxidation of the Haucke Compounds  $\text{CaNi}_5$ ,  $\text{YNi}_5$ ,  $\text{LaNi}_5$ , and  $\text{ThNi}_5$ ," *J. Less Common Metals* **86**, 195-202 (1982).
106. D.J. Peterman, J.H. Weaver, and M. Croft, "Valency and Delocalization of the Ce 4f Electron in  $\text{Ce}(\text{Ag}_{0.7}\text{Pd}_{0.3})_3$ ,  $\text{CePd}_3$ , and  $\text{CeRh}_3$ ," *Phys. Rev. B* **25**, 5530-5533 (1982).
107. A. Franciosi, J.H. Weaver, and F.A. Schmidt, "Electronic Structure of Nickel Silicides  $\text{Ni}_2\text{Si}$ ,  $\text{NiSi}$ , and  $\text{NiSi}_2$ ," *Phys. Rev. B* **26**, 546-553 (1982).
108. D. Wieliczka, J.H. Weaver, D.W. Lynch, and C.G. Olson, "Photoemission Studies of the  $\gamma$ - $\alpha$  Phase Transition in Ce: Changes in 4f Character," *Phys. Rev. B* **26**, 7056-7059 (1982).
109. A. Franciosi, J.H. Weaver, D.G. O'Neill, Y. Chabal, J.E. Rowe, J.M. Poate, O. Bisi, and C. Calandra, "Chemical Bonding at the Si-Metal Interface: Si-Ni and Si-Cr," *J. Vac. Sci. Technol.* **21**, 624-627 (1982).
110. W. Gudat, R. Rosei, J.H. Weaver, E. Kaldis, and F. Hulliger, "Mixed Valence and 4f Surface Chemical Shift in  $\text{CeN}$ ," *Solid State Commun.* **41**, 37-42 (1982).
- 1983**
111. J.H. Weaver, D.J. Peterman, and D.T. Peterson, "Electronic Structure of Metal Hydrides: A Review of Experimental and Theoretical Progress," in *Electronic Structure and Properties of Hydrogen in Metals*, edited by P. Jena and C.B. Satterthwaite (Plenum, NY, 1983) pp. 207-222.
112. D.J. Peterman, D.K. Misemer, J.H. Weaver, and D.T. Peterson, "Electronic Structure of Metal Hydrides. VI. Photoemission Studies and Band Theory of VH, NbH, and TaH," *Phys. Rev. B* **27**, 799-807 (1983).
113. A. Franciosi and J.H. Weaver, "Bulk Silicides and Si-Metal Interface Reaction:  $\text{Pd}_2\text{Si}$ ," *Phys. Rev. B* **27**, 3554-3561 (1983).
114. D.J. Peterman, J.H. Weaver, M. Croft, and D.T. Peterson, "Ce 4f Electrons in  $\text{CeH}_{2.1}$ ,  $\text{CeH}_{2.4}$ ,  $\text{CeAl}_2$ ,  $\text{CePd}_3$ ,  $\text{CeRh}_3$ ,  $\text{CeRu}_2$ : A Photoemission Study Using Synchrotron Radiation," *Phys. Rev. B* **27**, 808-818 (1983).
115. A. Franciosi and J.H. Weaver, "Si-Cr and Si-Pd Interface Reaction and Bulk Electronic Structure of Ti, V, Cr, Co, Ni, and Pd Silicides," *Surface Sci.* **132**, 324-335 (1983).
116. A. Franciosi and J.H. Weaver, "Si-Metal Interface Reaction and Bulk Electronic Structure of Silicides," *Physica B* **117-118**, 846 (1983).
117. R. Butera, J.H. Weaver, D.J. Peterman, A. Franciosi, and D.T. Peterson, "Hydrogen Diffusion and Hydride Formation at the Metal-Hydride Interface," *J. Chem. Phys.* **79**, 2395-2399 (1983).
118. A. Franciosi, D.G. O'Neill, and J.H. Weaver, "Modulation of the Morphology and Electronic Properties of the Si(111)-Au Interface," *J. Vac. Sci. Technol. B* **1**, 524-529 (1983).
119. A. Franciosi, J.H. Weaver, P. Perfetti, A.D. Katnani, and G. Margaritondo, "Samarium Valence Changes and Reactive Interdiffusion at the Si(111)-Sm Interface," *Solid State Commun.* **47**, 427 (1983).
120. M. N. Piancastelli, F. Cerrina, G. Margaritondo, A. Franciosi, and J.H. Weaver, "A Strongly Bound Chemisorption State for Benzene on Si(111)," *Appl. Phys. Lett.* **42**, 990-992 (1983).
121. J.H. Weaver, "4f Localization in Ce Compounds," *J. Less-Common Metals* **94**, 17-22 (1983).
122. A. Franciosi, J.H. Weaver, and D.G. O'Neill, "An Interface Catalytic Effect: Cr at the Si(111)-Au Interface," *Phys. Rev. - Rapid Commun. B* **28**, 4889-4892 (1983).
123. A. Franciosi, J.H. Weaver, D.G. O'Neill, F.A. Schmidt, O. Bisi, and C. Calandra, "Electronic Structure of Cr Silicides and Si-Cr Interface Reactions," *Phys. Rev. B* **28**, 7000-7008 (1983).

- 1984**
124. A. Franciosi, P. Perfetti, A.D. Katnani, J.H. Weaver, and G. Margaritondo, "Samarium Chemisorption on Group IV Semiconductors," *Phys. Rev. B* **29**, 5611-5616 (1984).
  125. J.H. Weaver, A. Franciosi, and V.L. Moruzzi, "Bonding in Metal Disilicides  $\text{CaSi}_2$  through  $\text{NiSi}_2$ : Experiment and Theory," *Phys. Rev. B* **29**, 3293-3302 (1984).
  126. J.H. Weaver, M. Gupta, and D.T. Peterson, "Electronic Structure and Bonding in Ca and  $\text{CaH}_2$ ," *Solid State Commun.* **51**, 805-808 (1984).
  127. M. Grioni, J.J. Joyce, S.A. Chambers, D.G. O'Neill, M. del Giudice, and J.H. Weaver, "Cluster Induced Reactions at a Metal-Semiconductor Interface: Ce/Si(111)," *Phys. Rev. Lett.* **53**, 2331-2334 (1984).
  128. M. Grioni, J.J. Joyce, M. del Giudice, D.G. O'Neill, and J.H. Weaver, "Modeling of a Heterogeneous Metal/Semiconductor Interface: Ce on Si(111)," *Phys. Rev - Rapid Commun. B* **30**, 7370-7373 (1984).
- 1985**
- G. Margaritondo and J.H. Weaver, "Photoemission Spectroscopy of Valence States," Chapter 3 in *Methods in Experimental Physics: Surfaces*, edited by M.G. Lagally and R.L. Park (Academic Press, NY, 1985) (#4 above).
129. A. Franciosi, J.H. Weaver, and D.T. Peterson, "Silicon Interaction with Low Electronegativity Metals: Interdiffusion and Reaction at the Si(111)-Ca Interface," *Phys. Rev. B* **31**, 3606-3610 (1985).
  130. A. Fujimori, J.H. Weaver, and A. Franciosi, "Core-Hole Screening and Plasmon Satellites in Calcium," *Phys. Rev. B* **31**, 3549-3554 (1985).
  131. J.H. Weaver, M. Grioni, and J.J. Joyce, "Critical Development Stages for the Reactive Cr-GaAs(110) Interface," *Phys. Rev. B* **31**, 5348-5354 (1985).
  132. A. Fujimori and J.H. Weaver, "Decay Channels of the  $5d \rightarrow 5f$  Excitation in Th," *Phys. Rev. B* **31**, 6411-6414 (1985).
  133. J.H. Weaver, M. Grioni, J.J. Joyce, and M. del Giudice, "Reactions at a Rare-Earth/GaAs Interface: Ce/GaAs(110)," *Phys. Rev. B* **31**, 5290-5296 (1985).
  134. A. Fujimori, M. Grioni, J.J. Joyce, and J.H. Weaver, "4f Photoemission from Ce/Si and Ce/GaAs Interfaces," *Phys. Rev. - Rapid Commun. B* **31**, 8291-8294 (1985).
  135. S.A. Chambers, G.A. Howell, T.R. Greenlee, and J.H. Weaver, "Characterization of Intermixing in Metal-Semiconductor Interfaces by Means of Angle-Resolved Auger Electron Emission: Cu/Si(111)7x7," *Phys. Rev. B* **31**, 6402-6410 (1985).
  136. M. Grioni, M. del Giudice, J.J. Joyce, and J.H. Weaver, "Modeling of Interface Reaction Products with High Resolution Core Level Photoemission," *J. Vac. Sci. Technol. A* **3**, 907-910 (1985).
  137. S.A. Chambers, T.R. Greenlee, G.A. Howell, and J.H. Weaver, "Quantitative Interdiffusion Studies of Noble Metal/Si(111)-7x7 Interfaces by Angle-Resolved Auger Electron Emission," *J. Vac. Sci. Technol. A* **3**, 1291-1294 (1985).
  138. M. Grioni, J.J. Joyce, and J.H. Weaver, "Room Temperature Reaction at a Refractory Metal-Semiconductor Interface: V/GaAs(110)," *J. Vac. Sci. Technol. A* **3**, 918-921 (1985).
  139. D.G. O'Neill, J.J. Joyce, T.W. Capehart, and J.H. Weaver, "Evolution of the Bulk Electronic Structure of Ag on Pd(100)," *J. Vac. Sci. Technol. A* **3**, 1639-1640 (1985).
  140. A. Fujimori and J.H. Weaver, "Valence Fluctuation and Electron Spectroscopies in CeN: 4f-Ligand versus 4f-Conduction-Band Hybridization," *Phys. Rev. B* **31**, 6345-6348 (1985).
  141. S.A. Chambers and J.H. Weaver, "Thermally Induced Structural and Compositional Modification of the Cu/Si(111)-7x7 Interface," *J. Vac. Sci. Technol. A* **3**, 1929-1934 (1985).
  142. S.A. Chambers, S.B. Anderson, and J.H. Weaver, "Atomic Structure of the Cu/Si (111) Interface by High-Energy Core-Level Auger Electron Diffraction," *Phys. Rev. B* **32**, 581-587 (1985).
  143. R.A. Butera, E. Franz, J.J. Joyce, and J.H. Weaver, "Photoemission and X-Ray Studies of Metal Hydrides and Hydride Formation of Metal Hydride Interfaces," *Solid State Commun.* **55**, 1089-1091 (1985).

144. M.W. Ruckman, M. del Giudice, and J.H. Weaver, "Temperature Dependent Growth Morphology of a Semiconductor/Metal Interface: Ge/Ta(110)," Phys. Rev. B **32**, 1077-1084 (1985).
145. M. Grioni, J.J. Joyce, and J.H. Weaver, "Adatom Aggregation, Reaction, and Chemical Trapping at the Sm/GaAs(110) Interface," Phys. Rev. B **32**, 962-968 (1985).
146. J.H. Weaver, D.T. Peterson, R.A. Butera, and A. Fujimori, "Electronic Interactions in Metal-Hydrogen Solid Solutions: ScH<sub>x</sub>, YH<sub>x</sub>, and V<sub>75</sub>Nb<sub>25</sub>H<sub>x</sub>," Phys. Rev. B **32**, 3562-3567 (1985).
147. S.A. Chambers, T.R. Greenlee, C.P. Smith, and J.H. Weaver, "Quantitative Characterization of Abrupt Interfaces by Angle-Resolved Auger Emission," Phys. Rev. - Rapid Commun. B **32**, 4245-4248 (1985).
148. A. Fujimori and J.H. Weaver, "4f-5d Hybridization in the  $\alpha\gamma$  Phase Transition in Cerium," Phys. Rev. B **32**, 3422-3428 (1985).
149. G. Paolucci, E. Colavita, and J.H. Weaver, "Thermoreflectance Investigation of Zirconium Hydrides in the Face Centered Tetragonal Phase," Phys. Rev. B **32**, 2610-2613 (1985).
150. M. del Giudice, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "Cluster Formation and Atomic Intermixing at the Reactive V/Ge(111) Interface," Phys. Rev. B **32**, 5149-5155 (1985).
151. S.A. Chambers, S.B. Anderson, and J.H. Weaver, "Structural Characterization of Metal/Metal Interfaces by Intermediate-Energy Auger Electron Diffraction," Phys. Rev. B **32**, 4872-4875 (1985).
- 1986** J.H. Weaver, "Metal/Semiconductor Interfaces," Physics Today **39**, 24-30 (1986), and cover photo. Translated into Japanese in Parity **1**, 2-11 (1986) and Parity **3**, 74-83 (1987) (#28 above).
152. A. Fujimori, M. Grioni, and J.H. Weaver, "Rare-Earth-Metal/Semiconductor Interfacial Reactions: Thermodynamic Aspects," Phys. Rev. B **33**, 726-735 (1986).
153. M.W. Ruckman, M. del Giudice, J.J. Joyce, and J.H. Weaver, "Photoemission Study of the Development of the Ti/GaAs(110) Interfaces," Phys. Rev. B **33**, 2191-2197 (1986).
154. M. del Giudice, M. Grioni, J.J. Joyce, M.W. Ruckman, S.A. Chambers, and J.H. Weaver, "Modeling Homogeneous and Heterogeneous Metal/Semiconductor Interface Reactions with Photoemission and Angle Resolved Auger Spectroscopies," Surf. Sci. **168**, 309-322 (1986).
155. S.A. Chambers, S.B. Anderson, and J.H. Weaver, "Surface Structural Determination of Metal/Semiconductor Interfaces by Angle-Resolved Auger Electron Emission," Appl. Surf. Sci. **26**, 542-549 (1986).
156. R.A. Butera, M. del Giudice, and J.H. Weaver, "Quantitative Modeling of Reactive Metal/Semiconductor Interface Growth using High Resolution Photoemission Results," Phys. Rev. B **33**, 5435-5449 (1986).
157. M.W. Ruckman, J.J. Joyce, and J.H. Weaver, "Interdiffusion and Reaction at the Fe/GaAs(110) Interface," Phys. Rev. B **33**, 7029-7035 (1986).
158. M.W. Ruckman, M. del Giudice, J.J. Joyce, and J.H. Weaver, "Comparative Study of the Formation of Cr/Ge and Ge/Cr Thin Film Interfaces," Phys. Rev. B **33**, 8039-8047 (1986).
159. S.A. Chambers, H.-W. Chen, I.M. Vitomirov, S.B. Anderson, and J.H. Weaver, "Direct Observation of Elastic Strain and Relaxation at a Metal/Metal Interface By Auger Electron Diffraction: Cu/Ni(001)," Phys. Rev. Rapid Commun. B **33**, 8810-8813 (1986).
160. M.W. Ruckman, M. del Giudice, J.J. Joyce, and J.H. Weaver, "Soft X-Ray Photoemission Study of Cr-Ge Atomic Intermixing on Crystalline and Amorphous Ge Surfaces," Phys. Rev. B **34**, 4010-4016 (1986).
161. M. Grioni, J.J. Joyce, and J.H. Weaver, "Metal-Anion Bond Strength and Room Temperature Diffusion at Metal/GaAs Interfaces: Transition vs. Rare-Earth Metals," J. Vac. Sci. Technol. A **4**, 965-968 (1986).
162. S.A. Chambers, M. del Giudice, M.W. Ruckman, S.B. Anderson, J.H. Weaver, and G.J. Lapeyre, "High-Resolution Electron Energy Loss Spectroscopy as a Probe of Surface Electronic States at Metal/Semiconductor Interfaces," J. Vac. Sci. Technol. A **4**, 1595-1598 (1986).
163. M. del Giudice, R.A. Butera, M.W. Ruckman, J.J. Joyce, and J.H. Weaver, "V/Ge(111) - Temperature Dependent Intermixing Studied with High Resolution Photoemission and Quantitative Modeling," J. Vac. Sci. Technol. A **4**, 879-881 (1986).

164. M. del Giudice, R.A. Butera, M.W. Ruckman, J.J. Joyce, and J.H. Weaver, "Temperature Dependent Intermixing at the V/Ge(111) Interface," Materials Research Society Symposia Proceedings **54**, 91-96 (1986).
165. J.J. Joyce and J.H. Weaver, "Characterization of an Extended Reactive Noble-Metal/III-V Semiconductor Interface: Cu/GaAs(110)," Materials Research Society Symposia Proceedings **54**, 349-354 (1986).
166. S.A. Chambers, H.-W. Chen, S.B. Anderson, and J.H. Weaver, "Incident Beam Effects in Angle-Resolved Auger Electron Spectroscopy," Phys. Rev. B **34**, 3055-3059 (1986).
167. S.A. Chambers, S.B. Anderson, H.-W. Chen, and J.H. Weaver, "High-Temperature Nucleation and Silicide Formation at the Co/Si(111)-7x7 Interface - A Structural Study," Phys. Rev. B **34**, 913-920 (1986).
168. M.W. Ruckman, J.J. Joyce, F. Boscherini, and J.H. Weaver, "Asymmetries in Atomic Intermixing at Au/Ge and Ge/Au Interfaces," Phys. Rev. B **34**, 5118-5124 (1986).
169. S.A. Chambers, F. Xu, H.-W. Chen, I.M. Vitomirov, S.B. Anderson, and J.H. Weaver, "Simultaneous Epitaxy and Substrate Outdiffusion at a Metal/Semiconductor Interface: Fe/GaAs(001)-c(8x2)," Phys. Rev. B **34**, 6605-6611 (1986).

**1987**

- J.H. Weaver et al., "High  $T_c$  Superconductors: Occupied and Unoccupied Electronic States, Surface Stability, and Interface Formation," Chapter 21 in Chemistry of High-Temperature Superconductors, D.L. Nelson, M.S. Whittingham, and T.F. George, eds., ACS Symposium Series 351, pp. 212-225 (#5 above).
170. S.A. Chambers, D.M. Hill, F. Xu, and J.H. Weaver, "Silicide Formation at the Ti/Si(111) Interface: Diffusion Parameters and Behavior at Elevated Temperatures," Phys. Rev. B **35**, 634-640 (1987).
  171. F. Xu, J.J. Joyce, M.W. Ruckman, H.-W. Chen, F. Boscherini, D.M. Hill, S.A. Chambers, and J.H. Weaver, "Epitaxy, Overlayer Growth, and Surface Segregation for Co/GaAs(110) and Co/GaAs(100)-c(8x2)," Phys. Rev. B **35**, 2375-2382 (1987).
  172. S.A. Chambers, I.M. Vitomirov, S.B. Anderson, and J.H. Weaver, "Medium-Energy Backscattered Electron Diffraction as a Probe of Elastic Strain in Epitaxial Overlayers," Phys. Rev. Rapid Commun. B **35**, 2490-2493 (1987).
  173. S.A. Chambers, S.B. Anderson, H.-W. Chen, and J.H. Weaver, "Growth of Metastable fcc Co on Ni(001)," Phys. Rev. B **35**, 2592-2597 (1987).
  174. F. Boscherini, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "High Resolution Photoemission Study of Co/Si(111) Interface Evolution," Phys. Rev. B **35**, 4216-4220 (1987).
  175. D.G. O'Neill and J.H. Weaver, "Evolution of a Surface State into an Interface State: A Probe of the Buried Epitaxial Cr/Au(100) Interface," Phys. Rev. Rapid Commun. B **35**, 5892-5895 (1987).
  176. M. del Giudice, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "Silicide Formation at the Ti/Si(111) Interface: Reaction and Schottky Barrier Formation," Phys. Rev. B **35**, 6213-6221 (1987).
  177. F. Xu, Yoram Shapira, D.M. Hill, and J.H. Weaver, "Atom Profiles of Interfaces with Polar-Angle-Dependent Photoemission: Au/GaAs(100)," Phys. Rev. B **35**, 7417-7422 (1987).
  178. F. Xu, Zhangda Lin, D.M. Hill, and J.H. Weaver, "Temperature Dependent Reaction and Buried Interface Movement for Ti/GaAs(100) and Cr/GaAs(100)," Phys. Rev. B Rapid Commun. **35**, 9353-9356 (1987).
  179. Y. Gao, B. Smandek, T.J. Wagener, J.H. Weaver, F. Levy, and G. Margaritondo, "Bremsstrahlung Isochromat Studies of Conduction Band States in SnS<sub>2</sub> and SnSe<sub>2</sub>," Phys. Rev. B Rapid Commun. **35**, 9357-9359 (1987).
  180. F. Boscherini, Yoram Shapira, C. Capasso, C. Aldao, M. del Giudice, and J.H. Weaver, "Exchange Reaction, Clustering, and Surface Segregation at the Al/InSb(110) Interface," Phys. Rev. B **35**, 9580-9585 (1987).
  181. A. Fujimori, M. Grioni, J.J. Joyce, and J.H. Weaver, "Chemical Bonding in Ordered Ce Overlayers on Si(111)," Phys. Rev. B **36**, 1075-1079 (1987).
  182. J.J. Joyce, F. Boscherini, M.W. Ruckman, and J.H. Weaver, "Chemical Trapping and Modification of the Au/GaAs(110) Interface using Sm Interlayers," Phys. Rev. B **36**, 1605-1611 (1987).
  183. S.A. Chambers, I.M. Vitomirov, and J.H. Weaver, "Incident Beam Effects in Medium-Energy Backscattered Electron Diffraction," Phys. Rev. B **36**, 3007-3014 (1987).

184. F. Xu, C.M. Aldao, I.M. Vitomirov, Zhangda Lin, and J.H. Weaver, "Direct Evidence of the Onset of In Surface Segregation for Co/InP(110)," *Phys. Rev. Rapid Commun. B* **36**, 3495-3498 (1987).
185. T.J. Wagener, Y. Gao, J.H. Weaver, A.J. Arko, B. Flandermeyer, and D.W. Capone II, "Unoccupied Electronic States and Surface Phenomena for YBa<sub>2</sub>Cu<sub>3</sub>O<sub>6.9</sub>," *Phys. Rev. B* **36**, 3899-3903 (1987).
186. Y. Gao, T.J. Wagener, J.H. Weaver, A.J. Arko, B. Flandermeyer, and D.W. Capone II, "Inverse Photoemission Studies of the Empty Electronic States and Surface Stability of La<sub>1.85</sub>Sr<sub>0.15</sub>CuO<sub>4</sub>," *Phys. Rev. Rapid Commun. B* **36**, 3971-3974 (1987).
187. J.H. Weaver, Y. Gao, T.J. Wagener, B. Flandermeyer, and D.W. Capone II, "Reaction and Disruption for Fe/La<sub>1.85</sub>Sr<sub>0.15</sub>CuO<sub>4</sub>: Interface Formation for High-Temperature Superconductors" *Phys. Rev. Rapid Commun. B* **36**, 3975-3978 (1987).
188. D.M. Hill, H.M. Meyer III, and J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Oxygen Withdrawal, Copper Valency, and Interface Reaction for Fe/La<sub>1.85</sub>Sr<sub>0.15</sub>CuO<sub>4</sub>," *Phys. Rev. Rapid Commun. B* **36**, 3979-3982 (1987).
189. R. Butera, M. del Giudice, and J.H. Weaver, "Temperature Dependent Interface Evolution: Modeling of Core Level Photoemission Results for V/Ge(111)," *Phys. Rev. B* **36**, 4754-4760 (1987).
190. M. del Giudice, J.J. Joyce, and J.H. Weaver, "Core Level Binding Energy Shifts, Thermodynamic Predictions, and Morphologies for Metal/Si and Metal/Ge Interfaces," *Phys. Rev. B* **36**, 4761-4768 (1987).
191. Zhangda Lin, F. Xu, and J.H. Weaver, "Surface Segregation at Metal/III-V Semiconductor Interfaces," *Phys. Rev. B* **36**, 5777-5784 (1987).
192. F. Xu, Zhangda Lin, D.M. Hill, and J.H. Weaver, "Temperature Dependent Interface Evolution for Ti/GaAs(100) and Cr/GaAs(100)," *Phys. Rev. B* **36**, 6624-6630 (1987).
193. Yoram Shapira, F. Boscherini, C. Capasso, F. Xu, D.M. Hill, and J.H. Weaver, "Au/InSb(110) Interface Profiles from Synchrotron Radiation and Polar Angle Dependent XPS," *Phys. Rev. B* **36**, 7656-7659 (1987).
194. S.A. Chambers, T.J. Wagener, and J.H. Weaver, "Formation and Structure of Fe/Cu(001) Interfaces, Sandwiches, and Superlattices," *Phys. Rev. B* **36**, 8992-9002 (1987).
195. Yoram Shapira, F. Xu, D.M. Hill, and J.H. Weaver, "Use of Polar Angle Dependent Photoemission for Atom Profiling: Au on Compound Semiconductors," *Appl. Phys. Lett.* **51**, 118-120 (1987).
196. Y. Gao, T.J. Wagener, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Reaction and Intermixing for Metal-Superconductor Interfaces: Inverse Photoemission of Fe/YBa<sub>2</sub>Cu<sub>3</sub>O<sub>6.9</sub>," *Appl. Phys. Lett.* **51**, 1032-1034 (1987).
197. H.M. Meyer III, T.J. Wagener, D.M. Hill, Y. Gao, S.G. Anderson, S.D. Krahn, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Spectroscopic Evidence for Passivation of the La<sub>1.85</sub>Sr<sub>0.15</sub>CuO<sub>4</sub> Surface with Gold," *Appl. Phys. Lett.* **51**, 1118-1120 (1987).
198. H.M. Meyer III, D.M. Hill, S.G. Anderson, J.H. Weaver, and D.W. Capone II, "Titanium-Oxygen Reaction at the Ti/La<sub>1.85</sub>Sr<sub>0.15</sub>CuO<sub>4</sub> Interface," *Appl. Phys. Lett.* **51**, 1750-1752 (1987).
199. F. Xu, C.M. Aldao, I.M. Vitomirov, and J.H. Weaver, "Abruptness of Au-Si Contacts with Thin CoSi<sub>2</sub> Interlayers," *Appl. Phys. Lett.* **51**, 1946-1948 (1987).
200. J.J. Joyce, M. Grioni, M. del Giudice, M.W. Ruckman, F. Boscherini, and J.H. Weaver, "Systematics of Electronic Structure and Local Bonding for Metal/GaAs(110) Interfaces," *J. Vac. Sci. Technol. A* **5**, 2019-2023 (1987).
201. Lj. Atanasoska, S.G. Anderson, H.M. Meyer III, Zhangda Lin, and J.H. Weaver, "Aluminum/Polyimide Interface Formation: An XPS Study of Selective Chemical Bonding," *J. Vac. Sci. Technol. A* **5**, 3325-3333 (1987).
202. F. Boscherini, Yoram Shapira, C. Capasso, C. Aldao, and J.H. Weaver, "Cr/InSb(110): A Study of Interface Development with High Resolution Core Level Photoemission," *J. Vac. Sci. Technol. B* **5**, 1003-1006 (1987).
203. M. del Giudice, J.J. Joyce, F. Boscherini, C. Capasso, and J.H. Weaver, "High-Resolution Core Level Studies of Interdiffusion and Reaction at Metal-Semiconductor Interfaces," *Materials Research Society Symposia Proceedings* **77**, 277-282 (1987).

204. F. Xu, J.J. Joyce, M.W. Ruckman, H.-W. Chen, F. Boscherini, D.M. Hill, S.A. Chambers, and J.H. Weaver, "Atom Profiling at Epitaxial Co/GaAs Interfaces," Asia Pacific Symposium on Surface Physics (World Scientific Publishing, Singapore, 1987) 122-130.
205. S.A. Chambers, I.M. Vitomirov, S.B. Anderson, H.-W. Chen, T.J. Wagener, and J.H. Weaver, "High-Energy Auger and Medium-Energy Backscattered Electron Diffraction as a Probe of Ultra-Thin Epitaxial Overlayers, Sandwiches, and Superlattices," Superlattices and Microstructures **3**, 563-571 (1987).
- 1988**
- J.H. Weaver, "Synchrotron Radiation Studies of Surfaces and Interfaces," Chapter 2 in *Analytical Techniques for Thin Films*, edited by K.N. Tu and R. Rosenberg (Academic Press, NY, 1988) pp. 15-63 (#6 above).
- D.W. Lynch and J.H. Weaver, "Photoemission of Ce and Its Compounds," in *High Energy Spectroscopy, Handbook on the Physics and Chemistry of Rare Earths*, Vol. 10, edited by K. A. Gschneidner and L. Eyring (North-Holland, Amsterdam) pp. 231-319 (#7 above).
- D. Sahn, A. Langner, T.F. George, J.H. Weaver, H.M. Meyer III, D.L. Nelson, and A. Wold, "Overview of High Temperature Superconductivity: Theory, Surfaces, Interfaces, and Bulk Systems," Chapter 1 in *Physical Chemistry of High Temperature Superconductors*, edited by T.F. George and D.L. Nelson, ACS Symposium Series 377 (#8 above).
- H.M. Meyer III, D.M. Hill, J.H. Weaver, and D.L. Nelson, "Surface and Interface Properties of High Temperature Superconductors," Chapter 21 in *Physical Chemistry of High Temperature Superconductors*, edited by T.F. George and D.L. Nelson, ACS Symposium Series 377 (#9 above).
206. D.M. Hill, Y. Gao, H.M. Meyer III, T.J. Wagener, J.H. Weaver, and D.W. Capone II, "Cu-Induced Surface Disruption of  $\text{La}_{1.85}\text{Sr}_{0.15}\text{CuO}_4$ ," Phys. Rev. B **37**, 511-514 (1988).
207. Y. Gao, T.J. Wagener, J.H. Weaver, and D.W. Capone II, "Interface Formation of Semiconductors with High  $T_c$  Superconductors: Ge/ $\text{La}_{1.85}\text{Sr}_{0.15}\text{CuO}_4$ ," Phys. Rev. B **37**, 515-518 (1988).
208. Y. Gao, I.M. Vitomirov, C.M. Aldao, T.J. Wagener, J.J. Joyce, C. Capasso, J.H. Weaver, and D.W. Capone II, "Synchrotron Radiation Photoemission Studies of Interface Formation between Metals and Superconductors: Al and In on  $\text{YBa}_2\text{Cu}_3\text{O}_{6.9}$ ," Phys. Rev. B - Rapid Commun. **37**, 3741-3744 (1988).
209. B. Smandek, Y. Gao, T.J. Wagener, J.H. Weaver, F. Lévy, and G. Margaritondo, "Bremsstrahlung Isochromat Study of the Layered Compounds  $\text{InSe}_2$ ,  $\text{TiSe}_2$ ,  $\text{SnSe}_2$ ,  $\text{SnS}_2$ , and  $\text{Bi}_2\text{Te}_3$ ," Phys. Rev. B **37**, 4196-4200 (1988).
210. C.M. Aldao, I.M. Vitomirov, F. Xu, and J.H. Weaver, "3d Transition Metals on InP(110): A Comparative Study of Reactive Interface Evolution," Phys. Rev. B **37**, 6019-6026 (1988).
211. F. Boscherini, Yoram Shapira, C. Capasso, and J.H. Weaver, "Synchrotron Radiation Photoemission Studies of Cu/InSb(110) Interface Evolution and Modification by Al Interlayers," Phys. Rev. B **37**, 8022-8026 (1988).
212. D.G. O'Neill and J.H. Weaver, "Evolution of the Electronic Structure of the Cr/Au(001) Interface," Phys. Rev. B **37**, 8122-8129 (1988).
213. F. Xu, D.M. Hill, Zhangda Lin, S.G. Anderson, Yoram Shapira, and J.H. Weaver, "Temperature Dependent Reaction and Atomic Redistribution for Ti/GaAs(100) Interfaces," Phys. Rev. B **37**, 10295-10300 (1988).
214. T.J. Wagener, Y. Gao, I.M. Vitomirov, C.M. Aldao, J.J. Joyce, C. Capasso, J.H. Weaver, and D.W. Capone II, "Disruption, Segregation, and Passivation for Pd and Noble Metal Overlayers on  $\text{YBa}_2\text{Cu}_3\text{O}_{6.9}$ ," Phys. Rev. B **38**, 232-239 (1988).
215. D.M. Hill, F. Xu, Zhangda Lin, and J.H. Weaver, "Atomic Distributions Across Metal/III-V Compound Semiconductor Interfaces," Phys. Rev. B **38**, 1893-1900 (1988).
216. Y. Hu, T.J. Wagener, Y. Gao, H.M. Meyer III, and J.H. Weaver, "Empty Electronic States of Graphite and the Growth of Au and Pd Clusters" Phys. Rev. B **38**, 3037-3044 (1988).
217. J.H. Weaver, H.M. Meyer III, T.J. Wagener, D.M. Hill, Y. Gao, D. Peterson, Z. Fisk, and A.J. Arko, "Valence Bands, Oxygen in Planes and Chains, and Surface Changes for Single Crystals of  $\text{M}_2\text{CuO}_4$  and  $\text{MBa}_2\text{Cu}_3\text{O}_x$  (M = Pr, Nd, Eu, Gd)," Phys. Rev. B **38**, 4668-4676 (1988).
218. H. M. Meyer III, D.M. Hill, T.J. Wagener, Y. Gao, J.H. Weaver, D.W. Capone II, and K.C. Goretta, "Electronic Structures of the  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$  Surface and Its Modification by Sputtering and Adatoms of Ti and Cu," Phys. Rev. B **38**, 6500-6512 (1988).

219. H.M. Meyer III, D.M. Hill, J.H. Weaver, D.L. Nelson, and C.F. Gallo, "Occupied Electronic States of Single Crystal  $\text{Bi}_2\text{Ca}_{1+x}\text{Sr}_{2-x}\text{Cu}_2\text{O}_{8+y}$ ," Phys. Rev. B - Rapid Commun. **38**, 7144-7147 (1988).
220. F. Xu, M. Vos, J.P. Sullivan, Lj. Atanasoska, S.G. Anderson, J.H. Weaver, and H. Cheng, "Band Gap Discontinuities for Ge/ZnSe(100) and Si/ZnSe(100): A Photoemission Study," Phys. Rev. B **38**, 7382-7385 (1988).
221. I.M. Vitomirov, C.M. Aldao, Zhangda Lin, Y. Gao, B.M. Trafas, D.M. Hill, H.M. Meyer III, and J.H. Weaver, "Pd Overlayer Growth on InP(110), GaAs(110), and InSb(110): Comparison of Anion Surface Segregation," Phys. Rev. B **38**, 10776-10786 (1988).
222. D.M. Hill, H.M. Meyer III, J.H. Weaver, C.F. Gallo, and K.C. Goretta, "Cu Adatom Interactions with Single- and Polycrystalline  $\text{Bi}_2\text{Ca}_{1+x}\text{Sr}_{2-x}\text{Cu}_2\text{O}_{8+y}$  and  $\text{YBa}_2\text{Cu}_3\text{O}_{6.9}$ ," Phys. Rev. B **38**, 11331-11336 (1988).
223. Yongjun Hu, T.J. Wagener, Y. Gao, and J.H. Weaver, "Resonant Inverse Photoemission Involving Transition Metal 3p-3d Subshell Interactions," Phys. Rev. B Rapid Commun. **38**, 12708-12711 (1988).
224. F. Xu, M. Vos, J.H. Weaver, and H. Cheng, "Interface Dipoles, Surface Work Functions, and Schottky Barrier Formation at Au/ZnSe(100) Interfaces," Phys. Rev. B **38**, 13418-13412 (1988).
225. H.M. Meyer III, D.M. Hill, J.H. Weaver, D.L. Nelson, and K.C. Goretta, "Reactivity and Passivation for Bi Adatoms on  $\text{YBa}_2\text{Cu}_3\text{O}_{6.9}$  and  $\text{Bi}_2\text{Ca}_{1+x}\text{Sr}_{2-x}\text{Cu}_2\text{O}_{8+y}$ ," Appl. Phys. Lett. **53**, 1004-1006 (1988).
226. M. Vos, F. Xu, J.H. Weaver, and H. Cheng, "Influence of Metal Interlayers on Schottky Barrier Formation for Au/ZnSe(100) and Al/ZnSe(100) Interfaces," Appl. Phys. Lett. **53**, 1530-1532 (1988).
227. D.M. Hill, H.M. Meyer III, J.H. Weaver, and D.L. Nelson, "Passivation of High  $T_c$  Superconductor Surfaces with  $\text{CaF}_2$  and Bi, Al, and Si Oxides," Appl. Phys. Lett. **53**, 1657-1659 (1988).
228. C.M. Aldao, I.M. Vitomirov, G.D. Waddill, and J.H. Weaver, "Interface Growth with Atoms and Preformed Clusters: Morphology and Schottky Barrier Variations for Au/InP(110)," Appl. Phys. Lett. **53**, 2647-2649 (1988).
229. Y. Gao, T.J. Wagener, C.M. Aldao, I.M. Vitomirov, J.H. Weaver, and D.W. Capone II, "Photoemission and Inverse Photoemission Studies of La Adatom Interactions with  $\text{YBa}_2\text{Cu}_3\text{O}_{6.9}$ ," J. Appl. Phys. **64**, 1296-1300 (1988).
230. H.M. Meyer III, S.G. Anderson, Lj. Atanasoska, and J.H. Weaver, "X-Ray Photoemission Investigations of Clustering and Electron Emission, Injection, and Trapping at the Au/PI Interface," J. Vac. Sci. Technol. A **6**, 30-37 (1988).
231. S.G. Anderson, H.M. Meyer III, Lj. Atanasoska, and J.H. Weaver, "Dynamics of Polyimide Curing and Degradation: An *in situ* X-ray Photoemission Study," J. Vac. Sci. Technol. A **6**, 38-43 (1988).
232. D.G. O'Neill and J.H. Weaver, "Two-Dimensional Energy Bands for Cr/Au(001)," J. Vac. Sci. Technol. A **6**, 582-584 (1988).
233. Lj. Atanasoska, H.M. Meyer III, S.G. Anderson, and J.H. Weaver, "Semiconductor/Polyimide Interface Formation: An X-ray Photoelectron Spectroscopy Study of Germanium Chemical Bonding," J. Vac. Sci. Technol. A **6**, 2175-2181 (1988).
234. S.G. Anderson, H.M. Meyer III, and J.H. Weaver, "Temperature-dependent X-ray Photoemission Studies of Metastable Co/Polyimide Interface Formation," J. Vac. Sci. Technol. A **6**, 2205-2212 (1988).
235. Y. Gao, B. Smandek, M. Nikaido, J.H. Weaver, F. Levy, and G. Margaritondo, "Bremsstrahlung Isochromat Studies of Conduction Band States in GaSe," Solid State Commun. **65**, 11-13 (1988).
236. Y. Gao, M. Grioni, B. Smandek, J.H. Weaver, and T. Tyrie, "Inverse Photoemission Spectrometer for Interface Studies," J. Phys. E: Scientific Instrum. **21**, 489-494 (1988).
237. H.M. Meyer III, Y. Gao, D.M. Hill, T.J. Wagener, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "High Temperature Superconductors: Occupied and Unoccupied Electronic States," in Thin Film Processing and Characterization of High Temperature Superconductors, edited by J.M.E. Harper, R.J. Colton, and L.C. Feldman, AIP Conference Proceedings No. 165, 254-263 (1988).
238. T.J. Wagener, Y. Gao, H.M. Meyer III, I.M. Vitomirov, C.M. Aldao, D.M. Hill, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Spectroscopic Examinations of the Surface Stability of High Temperature Superconductors," *ibid*, 368-373.

239. Y. Gao, H.M. Meyer III, T.J. Wagener, D.M. Hill, S.G. Anderson, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Interface Formation: High Temperature Superconductors with Noble Metals, Reactive Transition Metals, and Semiconductors," *ibid*, 358-367.

**1989**

- Synchrotron Radiation in Materials Research*, Materials Research Society Proceedings, Vol. 143, edited by R. Clarke, J. Gland, and J.H. Weaver (1989) (#10 above).
- D.L. Nelson, D. Sahn, A. Langner, T.F. George, J.H. Weaver, H.M. Meyer, and A. Wold, "Overview of High-Temperature Superconductivity: Theory, Surfaces, Interfaces, and Bulk Systems," *Naval Research Reviews*, Office of Naval Research, Four / 1988 - One / 1989, Vol. XL / XLI, pp. 15-23 (#29 above).
240. G.D. Waddill, I.M. Vitomirov, C.M. Aldao, and J.H. Weaver, "Cluster Deposition on GaAs(110): Formation of Abrupt, Defect-Free Interfaces," *Phys. Rev. Lett.* **62**, 1568-1572 (1989).
241. T.J. Wagener, Yongjun Hu, Y. Gao, M.B. Jost, J.H. Weaver, N. Spencer, and K.C. Goretta, "Resonant Inverse Photoemission of  $\text{Bi}_2\text{Ca}_{1-x}\text{Sr}_{2-x}\text{Cu}_2\text{O}_{8+y}$  and  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ , Unoccupied Oxygen States, and Plasmons," *Phys. Rev. B - Rapid Commun.* **39**, 2928-2931 (1989).
242. M. Vos, S.G. Anderson, and J.H. Weaver, "Inelastic Mean Free Paths for Electrons at Disordered Interfaces," *Phys. Rev. B* **39**, 3274-3278 (1989).
243. B.M. Trafas, I.M. Vitomirov, C.M. Aldao, Y. Gao, F. Xu, J.H. Weaver, and D.L. Partin, "Au, Co, Cr, Pd, and In Overlayers on PbS(100) Surfaces: Adatom Interactions and Interface Formation," *Phys. Rev. B* **39**, 3625-3273 (1989).
244. S.G. Anderson, M. Vos, F. Xu, J.H. Weaver, and H. Cheng, "Schottky Barrier Formation and Atomic Intermixing at Au/ZnSe(100) and Co/ZnSe(100) Interfaces with Co and Au Interlayers," *Phys. Rev. B* **39**, 5079-5090 (1989).
245. H.M. Meyer III, T.J. Wagener, J.H. Weaver, and D.S. Ginley, "Photoemission and Resonant Inverse Photoemission Studies of  $\text{Tl}_2\text{Ba}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+y}$ ," *Phys. Rev. B Rapid Commun.* **39**, 7343-7346 (1989).
246. F. Xu, M. Vos, and J.H. Weaver, "Influence of Au Overlayers on Valence Band Offsets for Buried  $\text{CaF}_2/\text{Si}(111)$  Interfaces," *Phys. Rev. B Rapid Commun.* **39**, 8008-8011 (1989).
247. Y. Hu, T.J. Wagener, Y. Gao, and J.H. Weaver, "Empty Electronic State Evolution for Sc and Electronic Dynamics of the 3p-3d Giant Dipole Resonance," *Phys. Rev. B* **39**, 8162-8168 (1989).
248. M. Vos, S.G. Anderson, J.H. Weaver, and H. Cheng, "Photoemission Studies of Interface Chemistry and Schottky Barriers for ZnSe(100) with Ti, Co, Cu, Pd, Ag, Au, Ce, and Al," *Phys. Rev. B* **39**, 10744-10751 (1989).
249. C.M. Aldao, S.G. Anderson, C. Capasso, I.M. Vitomirov, G.D. Waddill, and J.H. Weaver, "Dopant Concentration Dependences and Symmetric Fermi Level Movement for Metal/n- and p-GaAs(110) Interfaces Formed at 60 K," *Phys. Rev. B Rapid Commun.* **39**, 12977-12980 (1989).
250. Y. Hu, T.J. Wagener, M.B. Jost, and J.H. Weaver, "Evolution of Empty State Bands for Bi/GaAs(110): From Bi zig-zag Chains to Ordered Overlayers," *Phys. Rev. B* **40**, 1146-1151 (1989).
251. C.M. Aldao, G.D. Waddill, S.G. Anderson, and J.H. Weaver, "Temperature Effects for Ti/GaAs(110) Interface Formation Involving Cluster and Atom Deposition," *Phys. Rev. B* **40**, 2932-2939 (1989).
252. I.M. Vitomirov, G.D. Waddill, C.M. Aldao, S.G. Anderson, C. Capasso, and J.H. Weaver, "Reversible Temperature-Dependent Fermi Level Movement for Metal-GaAs(110) Interfaces," *Phys. Rev. B - Rapid Commun.* **40**, 3483-3486 (1989).
253. C.M. Aldao, I.M. Vitomirov, F. Xu, and J.H. Weaver, "Disruption, Morphology, and Energy Levels for Ge/GaAs(110), Ge/InP(110), and Ge/InSb(110) Heterojunctions," *Phys. Rev. B* **40**, 3711-3719 (1989).
254. B.M. Trafas, F. Xu, M. Vos, C.M. Aldao, and J.H. Weaver, "Systematics of Metal/GaP(110) Interface Formation: Ti, Pd, Au, and Ag Adatom Deposition," *Phys. Rev. B* **40**, 4022-4029 (1989).
255. T.J. Wagener, H.M. Meyer III, D.M. Hill, Y. Hu, M.B. Jost, J.H. Weaver, and D.G. Hinks, "X-Ray and Resonance Inverse Photoemission Studies of  $\text{Ba}_{0.625}\text{K}_{0.375}\text{BiO}_{3-y}$ ," *Phys. Rev. B* **40**, 4532-4537 (1989).
256. S.G. Anderson, C.M. Aldao, G.D. Waddill, I.M. Vitomirov, S.J. Severtson, and J.H. Weaver, "Al/GaAs(110) Temperature Dependent Interface Formation and Overlayer Energy References," *Phys. Rev. B* **40**, 8305-8312 (1989).



257. J.R. Chelikowsky, T.J. Wagener, and J.H. Weaver, and A. Jin "Valence and Conduction Band Densities of States for Tetrahedral Semiconductors: Theory and Experiment," Phys. Rev. B **40**, 9644-9651 (1989).
258. B.M. Trafas, C.M. Aldao, C. Capasso, Yoram Shapira, F. Boscherini, I.M. Vitomirov, and J.H. Weaver, "Development of Rare Earth/Semiconductor Interfaces: Ce/InP(110), Sm/InSb(110), and Ce/CdTe(110)," Phys. Rev. B **40**, 9811-9817 (1989).
259. A. Franciosi, A. Wall, Y. Gao, J.H. Weaver, M.-H Tsai, J.D. Dow, R.V. Kasowski, R. Reifenberger, and F. Pool, "d States, Exchange Splitting, and Mn Electronic Configuration in Cd<sub>1-x</sub>Mn<sub>x</sub>Te," Phys. Rev. B - Rapid Commun. **40**, 12009-12012 (1989).
260. A. Wall, A. Franciosi, Y. Gao, J.H. Weaver, M.-H. Tsai, J.D. Dow, and R.V. Kasowski, "Inverse Photoemission and Resonant Photoemission Characterization of Semimagnetic Semiconductors," J. Vac. Sci. Technol. A **7**, 656-662 (1989).
261. I.M. Vitomirov, C.M. Aldao, M.C. Schabel, G.D. Waddill, S.G. Anderson, and J.H. Weaver, "Energies and Symmetries in Interface Formation: In/GaP(110) and Ga/InP(110)," J. Vac. Sci. Technol. A **7**, 758-764 (1989).
262. C.M. Aldao, G.D. Waddill, I.M. Vitomirov, and J.H. Weaver, "Interface Formation by Atom and Cluster Deposition: Novel Electronic and Structural Properties," J. Vac. Sci. Technol. A **7**, 817-821 (1989).
263. G.D. Waddill, C.M. Aldao, I.M. Vitomirov, Y. Gao, and J.H. Weaver, "Temperature Dependent Interface Morphology and Schottky Barrier Evolution for Au/InP(110)," J. Vac. Sci. Technol. A **7**, 865-869 (1989).
264. G.D. Waddill, C. Aldao, I.M. Vitomirov, S.G. Anderson, C. Capasso, and J.H. Weaver, "Ag and Co Cluster Deposition on GaAs(110): Fermi Level Pinning in the Absence of Metal-Induced Gap States and Defects," J. Vac. Sci. Technol. B **7**, 950-957 (1989).
265. F. Xu, D.M. Hill, P.J. Benning, and J.H. Weaver, "Activated Metal Deposition and Oxide Growth on Semiconductors: TiO<sub>2</sub>/Si(111)-2x1," J. Vac. Sci. Technol. A **7**, 2593-2597 (1989).
266. S.G. Anderson, C.M. Aldao, G.D. Waddill, I.M. Vitomirov, C. Capasso, and J.H. Weaver, "Fermi Level Movement for Metal/n- and p-GaAs Interfaces: Effects of Temperature and Dopant Concentrations," Appl. Phys. Lett. **55**, 2547-2549 (1989).
267. H.M. Meyer III, D.M. Hill, T.J. Wagener, J.H. Weaver, C.F. Gallo, and K.C. Goretta, "Single Crystal YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> and Bi<sub>2</sub>Ca<sub>1-x</sub>Sr<sub>2-x</sub>Cu<sub>2</sub>O<sub>8+y</sub> Surfaces and Ag Adatom-Induced Modification," J. Appl. Phys. **65**, 3130-3135 (1989).
268. D.M. Hill, H.M. Meyer III, and J.H. Weaver, "Y, Ba, Cu, and Ti Interface Reactions with SrTiO<sub>3</sub>(100) Surfaces," J. Appl. Phys. **65**, 4943-4950 (1989).
269. M. Vos, F. Xu, and J.H. Weaver, "Metal/CaF<sub>2</sub>/Si Heterostructures: Interface Evolution and Electronic Properties," J. Appl. Phys. **66**, 2467-2474 (1989).
270. H.M. Meyer III, T.J. Wagener, J.H. Weaver, M. Feyereisen, and J. Almlöf, "Occupied and Unoccupied Electronic Structure of Polyimide," Chem. Phys. Lett. **164**, 527-532 (1989).
271. J.J. Joyce, M. del Giudice, and J.H. Weaver, "Quantitative Analysis of Synchrotron Radiation Photoemission Core Level Data," J. Electron Spectros. & Rel. Phenom. **49**, 31-45 (1989).
272. J.H. Weaver, H.M. Meyer III, T.J. Wagener, D.M. Hill, and Y. Hu, "Surface and Interface Properties of High Temperature Superconductors," American Institute of Physics **182**, 399-408 (1989).
273. Lj. Atanasoska and J.H. Weaver, "Study of Chemical Interaction on Interface between Aluminum and Germanium with Polyimide by XPS," Informacije Midem **48**, 214-223 (1989).

**1990**

J.H. Weaver, Zhangda Lin, and F. Xu, "Surface Segregation at Evolving Metal-Semiconductor Interfaces," Chapter 10 in *Surface Segregation Phenomena*, edited by P.A. Dowben and A. Miller (CRC Press, Boca Raton, 1990) pp. 369-457 (#11 above).

H.M. Meyer III and J.H. Weaver, "Electronic Structure, Surface Properties, and Interface Chemistry of High Temperature Superconductors," Chapter 6 in *Physical Properties of High Temperature Superconductors II*, edited by D.M. Ginsberg (World Scientific, 1990) pp. 369-457 (#12 above).

274. M. Vos, C.M. Aldao, D.J.W. Aastuen, and J.H. Weaver, "Deposition of Ag Ions and Neutral Atoms on ZnSe(100): Influence of Interface Morphology on Schottky Barrier Formation," Phys. Rev. B **41**, 991-994 (1990).
275. C.M. Aldao, I.M. Vitomirov, G.D. Waddill, S.G. Anderson, and J.H. Weaver, "Dynamic Coupling Model: Temperature-, Dopant-Concentration, and Coverage-Dependent Schottky Barrier Formation," Phys. Rev. B **41**, 2800-2812 (1990).
276. T.J. Wagener, H.M. Meyer III, Y. Hu, M.B. Jost, J.H. Weaver, and K.C. Goretta, "O 2p Holes: Temperature Effects and Surface Characteristics of Cuprate Superconductors," Phys. Rev. B **41**, 4201-4211 (1990).
277. G.D. Waddill, I.M. Vitomirov, C.M. Aldao, S.G. Anderson, C. Capasso, J.H. Weaver, and Z. Liliental-Weber, "Abrupt Interfaces with Novel Structural and Electronic Properties: Metal Cluster Deposition and Metal-Semiconductor Junctions," Phys. Rev. B **41**, 5293-5305 (1990).
278. J.M. Seo, S.G. Anderson, T. Komeda, C. Capasso, and J.H. Weaver, "Dynamic Photo-Induced Low Temperature Oxidation of GaAs(110)," Phys. Rev. B Rapid Commun. **41**, 5455-5458 (1990).
279. Y.-J. Hu, T.J. Wagener, M.B. Jost, and J.H. Weaver, "Epitaxial Sn and Bi on GaAs(110): Inverse Photoemission, Shallow Core-Hole Emission, and Ga 3d Excitons," Phys. Rev. B **41**, 5817-5824 (1990).
280. G.D. Waddill, C.M. Aldao, C. Capasso, P.J. Benning, Yongjun Hu, T.J. Wagener, M.B. Jost, and J.H. Weaver, "Thermally-Reversible Band Bending for Bi/GaAs(110): Photoemission and Inverse Photoemission Investigations," Phys. Rev. B **41**, 5960-5968 (1990).
281. C.M. Aldao, G.D. Waddill, P.J. Benning, C. Capasso, and J.H. Weaver, "Photovoltaic Effects in Temperature-Dependent Fermi Level Movement for GaAs(110)," Phys. Rev. B Rapid Commun. **41**, 6092-6095 (1990).
282. T. Komeda, Toshiyuki Hirano, G.D. Waddill, S.G. Anderson, J.P. Sullivan, and J.H. Weaver, "CoSi<sub>2</sub>(111), FeSi<sub>2</sub>(001), MoSi<sub>2</sub>(001) Surfaces and Interfaces with Ti," Phys. Rev. B **41**, 8345-8352 (1990).
283. I.M. Vitomirov, C.M. Aldao, G.D. Waddill, C. Capasso, and J.H. Weaver, "Metal-InP(110) Interface Properties: Temperature-, Dopant-Concentration-, and Cluster Dependencies," Phys. Rev. B **41**, 8465-8476 (1990).
284. G.D. Waddill, T. Komeda, Y.-N. Yang, and J.H. Weaver, "Photoemission from Metal Dots on GaAs(110): Surface Photovoltages and Surface Conductance," Phys. Rev. B Rapid Commun. **41**, 10283-10286 (1990).
285. T.R. Ohno, J.C. Patrin, H.M. Meyer, J.H. Weaver, Y. Kimachi, and Y. Hidaka, "Atom- and Cluster-Assembled Interfaces: Cr/Bi<sub>2</sub>Sr<sub>2-x</sub>Ca<sub>1+x</sub>Cu<sub>2</sub>O<sub>8+y</sub>," Phys. Rev. B Rapid Commun. **41**, 11677-11680 (1990).
286. T.J. Wagener, Y. Hu, M.B. Jost, and J.H. Weaver, "YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> (001) Studied at 60 K with Momentum-Resolved Inverse Photoemission," Phys. Rev. B - Rapid Commun. **42**, 1041-1044 (1990).
287. C.M. Aldao, D.J.W. Aastuen, M. Vos, I.M. Vitomirov, G.D. Waddill, P.J. Benning, and J.H. Weaver, "Interface Formation with Ions and Neutral Atoms," Phys. Rev. B **42**, 2878-2885 (1990).
288. M.B. Jost, T.J. Wagener, Y.-J. Hu, and J.H. Weaver, "Ga 3d Excitons at Surfaces and Interfaces," Phys. Rev. B **42**, 2937-2940 (1990).
289. B.M. Trafas, D.M. Hill, R.L. Siefert, and J.H. Weaver, "Adsorption and Interaction of Sm on GaAs(110) Studied by Scanning Tunneling Microscopy," Phys. Rev. B Rapid Commun. **42**, 3231-3234 (1990).
290. S.G. Anderson, T. Komeda, J.M. Seo, C. Capasso, G.D. Waddill, P.J. Benning, and J.H. Weaver, "O<sub>2</sub>/GaAs(110) Interface Formation at 20 K: Photon-Induced Reaction and Desorption," Phys. Rev. B **42**, 5082-5092 (1990).
291. T.J. Wagener, Y.-J. Hu, M.B. Jost, J.H. Weaver, Y.F. Yan, X. Chu, and Z.X. Zhao, "Comparison of the Empty Electronic States of Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8</sub> (001) and Bi<sub>2</sub>Sr<sub>2</sub>Cu<sub>2</sub>O<sub>6</sub> (001) at 60 K and 300 K," Phys. Rev. B **42**, 6317-6321 (1990).
292. Y.-J. Hu, M.B. Jost, T.J. Wagener, and J.H. Weaver, "Long-Range Ordering of Sb Multilayers on GaAs(110): Evolution of Resonant Inverse Photoemission," Phys. Rev. B **42**, 7050-7057 (1990).
293. J.M. Seo, Y.Z. Li, S.G. Anderson, D.J.W. Aastuen, U.S. Ayyala, G.H. Kroll, and J.H. Weaver, "X-Ray Induced Low Temperature Oxidation: N<sub>2</sub>O/GaAs(110)," Phys. Rev. B **42**, 9080-9087 (1990).

294. J.P. Sullivan, T. Hirano, T. Komeda, H.M. Meyer III, B.M. Trafas, G.D. Waddill, and J.H. Weaver, "Reaction and Stability of Metal/Silicide Interfaces: Ti/MoSi<sub>2</sub>(001)," Appl. Phys. Lett. **56**, 671-673 (1990).
295. Z. Liliental-Weber, E.R. Weber, J. Washburn, and J.H. Weaver, "Schottky Barrier Contacts on Defect-Free GaAs(110)," Appl. Phys. Lett. **56**, 2507-2509 (1990).
296. S.G. Anderson, J.M. Seo, T. Komeda, C. Capasso, and J.H. Weaver, "Production of Highly Oxidized As on GaAs(110) at 20 K," Appl. Phys. Lett. **56**, 2510-2512 (1990).
297. T.R. Ohno, Y.-N. Yang, J.H. Weaver, Y. Kimachi, and Y. Hidaka, "Ge on Bi<sub>2</sub>Sr<sub>2-x</sub>Ca<sub>1+x</sub>Cu<sub>2</sub>O<sub>8+y</sub>: Reduced Reactivity through Cluster Assembly," Appl. Phys. Lett. **57**, 718-720 (1990).
298. H.M. Meyer III, J.H. Weaver, and K.C. Goretta, "Surface Reactivity and Interface Morphology for Ti Growth on YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub>, Y<sub>2</sub>BaCuO<sub>5</sub>, and CuO," J. Appl. Phys. **67**, 1995-2002 (1990).
299. D.M. Hill, H.M. Meyer III, and J.H. Weaver, "Ba Oxides: Core Level Binding Energies and Defect-Related Fermi Level Pinning," Surf. Sci. **225**, 63-71 (1990).
300. D.M. Hill, H.M. Meyer III, and J.H. Weaver, "Silicon Interfaces with High Temperature Superconductors," Surf. Sci. **236**, 377-384 (1990).
301. B.M. Trafas, C.M. Aldao, R.L. Siefert, M. Vos, F. Xu, and J.H. Weaver, "CdTe(110) Interface Formation with Reactive and Nonreactive Overlayers: Al, Ti, Pd, Ag, Au, In, and Ce Overlayers," J. Vac. Sci. Technol. A **8**, 2055-2061 (1990).
302. I.M. Vitomirov, C.M. Aldao, G.D. Waddill, and J.H. Weaver, "A 20 K to 350 K Variable-Temperature Sample Holder with Sample Interchangeability," J. Vac. Sci. Technol. A **8**, 3368-3369 (1990).
303. Y. Hu, T.J. Wagener, M.B. Jost, and J.H. Weaver, "Inverse Photoemission on Epitaxial Bi/GaAs(110): Electrovoltaic Effects and Symmetric Band Bending from 60 to 300 K," J. Vac. Sci. Technol. B **8**, 1001-1007 (1990).
304. Lj. Atanasoska, S.G. Anderson, H.M. Meyer III, and J.H. Weaver, "XPS Study of Chemical Bonding at Polyimide Interfaces with Metal and Semiconductor Overlayers," Vacuum **40**, 12-17 (1990).

**1991**

- J.H. Weaver, "The Formation and Properties of Metal-Semiconductor Interfaces," Chapter 8 in *Electronic Materials: A New Era of Materials Science*, edited by J.R. Chelikowsky and A. Franciosi (Springer-Verlag, 1991) pp. 135-214 (#13 above).
- J.H. Weaver and G.D. Waddill, "Cluster-Assembly of Interfaces: Nanoscale Engineering," Science **251**, 1444-1451 (1991) (#30 above).
- J.H. Weaver, "Clusters, Their Growth, and Their Interaction with Surfaces," Naval Research Reviews, Office of Naval Research, Three / 1991, Vol. XLIII, pp. 16-27 (#31 above).
- Y.Z. Li and J.H. Weaver, "Direct Imaging of Fullerenes using Scanning Tunneling Microscopy," Research and Development Magazine, Vol. 33, December 1991, pp. 38-40 (#32 above).
305. Y.Z. Li, J.C. Patrin, M. Chander, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Ordered Overlayers of C<sub>60</sub> on GaAs(110) Studied with Scanning Tunneling Microscopy," Science **252**, 547-548 (1991).
306. P.J. Benning, J.L. Martins, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Electronic Structure of K<sub>x</sub>C<sub>60</sub>: Insulating, Metallic, and Superconducting Character," Science **252**, 1417-1419 (1991).
307. Y.Z. Li, M. Chander, J.C. Patrin, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Order and Disorder in C<sub>60</sub> and K<sub>x</sub>C<sub>60</sub> Multilayers: Direct Imaging with Scanning Tunneling Microscopy," Science **253**, 429-433 (1991).
308. D.M. Poirier, T.R. Ohno, G.H. Kroll, Y. Chen, P.J. Benning, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Formation of Fullerides and Fullerene-Based Heterostructures," Science **253**, 646-648 (1991).
309. J.H. Weaver, J.L. Martins, T. Komeda, Y. Chen, N. Troullier, T.R. Ohno, G.H. Kroll, R.E. Haufler, and R.E. Smalley, "Electronic Structure of C<sub>60</sub>: Experiment and Theory," Phys. Rev. Lett. **66**, 1741-1744 (1991).
310. Y. Chen, Y.S. Luo, J.M. Seo, and J.H. Weaver, "The Role of O<sub>2</sub> Negative-Ion Formation in Low Energy Electron-Induced Oxidation of InP(100)," Phys. Rev. B Rapid Commun. **43**, 4527-4530 (1991).

311. B.M. Trafas, D.M. Hill, P.J. Benning, G.D. Waddill, Y.-N. Yang, R.L. Siefert, and J.H. Weaver, "Clustering and Reaction for Cr/GaAs(110): Scanning Tunneling Microscopy and Photoemission," Phys. Rev. B **43**, 7174-7184 (1991).
312. T.R. Ohno, Y.-N. Yang, G.H. Kroll, K. Krause, L.D. Schmidt, J.H. Weaver, Y. Kimachi, Y. Hidaka, S.H. Pan, and A.L. deLozanne "Cluster-Assembled Overlayers on High Temperature Superconductors," Phys. Rev. B **43**, 7980-7990 (1991).
313. T. Komeda, G.D. Waddill, P.J. Benning, and J.H. Weaver, "Photoelectron Microscopy and Photoelectron Spectroscopy of Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8</sub>(100)," Phys. Rev. B Rapid Commun. **43**, 8713-8716 (1991).
314. S.G. Anderson, Y. Chen, J.M. Seo, and J.H. Weaver, "InP(110) Oxidation with O<sub>2</sub>, NO, and N<sub>2</sub>O at 20 K: Temperature and Photon Energy Dependencies," Phys. Rev. B **43**, 9621-9625 (1991).
315. J.M. Seo, S.E. Harvey, Y. Chen, and J.H. Weaver, "Initial Stages of Oxidation of Si(111) with Condensed O<sub>2</sub> and N<sub>2</sub>O at 20 K," Phys. Rev. B **43**, 11893-11902 (1991).
316. Y. Chen, F. Stepniak, J.M. Seo, S.E. Harvey, and J.H. Weaver, "Effects of Surface Band Bending on Low Energy Photon-Induced Oxidation of GaAs(110)," Phys. Rev. B. Rapid Commun. **43**, 12086-12089 (1991).
317. C.M. Aldao, I.M. Vitomirov, G.D. Waddill, and J.H. Weaver, "Effects of Growth Temperature on Atom Distributions, Fermi Level Positions, and Valence-Band Offsets for the Ge/n-InP(110) Heterojunction," Phys. Rev. B **43**, 13952-13956 (1991).
318. B.M. Trafas, Y.-N. Yang, R.L. Siefert, and J.H. Weaver, "Scanning Tunneling Microscopy of Ag Growth on GaAs(110) at 300 K: From Clusters to Crystallites," Phys. Rev. B **43**, 14107-14114 (1991).
319. Y. Chen, J.M. Seo, S.G. Anderson, and J.H. Weaver, "Photon-Induced Oxidation of InP(110) with Condensed O<sub>2</sub> at 25 K," Phys. Rev. B **44**, 1699-1706 (1991).
320. T.R. Ohno, J.C. Patrin, U.S. Ayyala, and J.H. Weaver, "Ag Deposition onto Xe: Clustering, Incorporation, and Surface Attraction," Phys. Rev. B **44**, 1891-1895 (1991).
321. P.J. Benning, D.M. Poirier, N. Troullier, J.L. Martins, J.H. Weaver, R.E. Haufler, L.P.F. Chibante, and R.E. Smalley, "Electronic States of Solid C<sub>60</sub>: Symmetries and Photoionization Cross Sections," Phys. Rev. B Rapid Commun. **44**, 1962-1965 (1991).
322. M.B. Jost, N. Troullier, D.M. Poirier, J.L. Martins, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Empty Electronic States and Band Dispersion in Solid C<sub>60</sub>: Inverse Photoemission and Theory," Phys. Rev. B Rapid Commun. **44**, 1966-1969 (1991).
323. Y.-N. Yang, B.M. Trafas, R.L. Siefert, and J.H. Weaver, "GaAs(110) Terrace Width Distributions and Kink Formation," Phys. Rev. B **44**, 3218-3221 (1991).
324. Y.-N. Yang, B.M. Trafas, R.L. Siefert, and J.H. Weaver, "Effect of Nonthermally-activated Hopping on Overlayer Morphology: An STM Study of Ti/GaAs(110)," Phys. Rev. B **44**, 5720-5725 (1991).
325. Y.Z. Li, J.C. Patrin, Y. Chen, and J.H. Weaver, "Mg Ordering, Reaction, and Crystallite Formation on GaAs(110): Scanning Tunneling Microscopy and Photoemission Studies," Phys. Rev. B **44**, 8843-8849 (1991).
326. Y.Z. Li, J.C. Patrin, M. Chander, and J.H. Weaver, "Rare Earth Growth Structures on GaAs(110): Ce, Sm, and Yb," Phys. Rev. B **44**, 12903-12907 (1991).
327. Y.J. Hu, R. Yang, D.F. Evans, and J.H. Weaver, "Direct Measurements of Bipolaron Band Development in Doped Polypyrrole with Inverse Photoemission," Phys. Rev. B **44**, 13660-13665 (1991).
328. T.R. Ohno, Y. Chen, S.E. Harvey, G.H. Kroll, J.H. Weaver, R.E. Haufler, and R.E. Smalley, "C<sub>60</sub> Bonding and Energy Level Alignment on Metal and Semiconductor Surfaces," Phys. Rev. B **44**, 13747-13755 (1991).
329. G.H. Kroll, T.R. Ohno, and J.H. Weaver, "Nondisruptive Oxide Overlayer Growth on GaAs(110)," Appl. Phys. Lett. **58**, 2249-2251 (1991).
330. T. Komeda, F. Stepniak, and J.H. Weaver, "Schottky-Limit Barrier Heights for CO-Coated Metal Clusters on GaAs(110)," Appl. Phys. Lett. **58**, 2809-2811 (1991).

331. J.L. Martins, N. Troullier, and J.H. Weaver, "Analysis of the Occupied and Empty Electronic States of C<sub>60</sub>" Chem. Phys. Lett. **180**, 457-460 (1991).
332. G.H. Kroll, P.J. Benning, T.R. Ohno, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Interaction of O<sub>2</sub> with C<sub>60</sub>: Photon-Induced Oxidation," Chem. Phys. Lett. **181**, 112-116 (1991).
333. M.B. Jost, P.J. Benning, D.M. Poirier, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Occupied and Unoccupied Electronic States of Solid C<sub>70</sub> with Comparison to C<sub>60</sub>," Chem. Phys. Lett. **184**, 423-427 (1991).
334. Y. Kimachi, Y. Hidaka, T.R. Ohno, G.H. Kroll, and J.H. Weaver, "Reactive Metal Overlayer Formation on High Temperature Superconductor Single Crystals at 20 K," J. Appl. Phys. **69**, 3176-3181 (1991).
335. J.M. Seo, Y. Chen, and J.H. Weaver, "Oxide Films Grown on GaAs(110) at 20 K: Stability during Cr Overlayer Formation," J. Appl. Phys. **70**, 4336-4341 (1991).
336. Y. Chen, J.M. Seo, F. Stepniak, and J.H. Weaver, "Visible-Light-Induced Oxidation for O<sub>2</sub> on GaAs(110): The Role of Hot Electrons," J. Chem. Phys. **95**, 8442-8448 (1991).
337. Y.Z. Li, D.J.W. Aastuen, J.M. Seo, U.S. Ayyala, and J.H. Weaver, "Ti Overlayer Growth on Oxidized GaAs(110) vs. Ti Oxidation on Physisorbed O<sub>2</sub> on GaAs(110) at 25 K," Surf. Sci. **250**, 201-208 (1991).
338. Y.-J. Hu, M.B. Jost, and J.H. Weaver, "Resonant Inverse Photoemission of Sb Multilayers on GaAs(110) and InP(110) Surfaces," J. Vac. Sci. Technol. B **9**, 255-263 (1991).
339. G.D. Waddill, T. Komeda, P.J. Benning, and J.H. Weaver, "Photoelectron Microscopy and Spectroscopy using Synchrotron Radiation," J. Vac. Sci. Technol. A **9**, 1634-1639 (1991).
340. T. Komeda, S.G. Anderson, J.M. Seo, M.C. Schabel, and J.H. Weaver, "Sm/GaAs(110) Interface Formation: Surface Instabilities and Kinetic Constraints," J. Vac. Sci. Technol. A **9**, 1964-1971 (1991).
341. M.B. Jost, Y.-J. Hu, D.M. Poirier, and J.H. Weaver, "Inverse Photoemission Study of Epitaxial Bi Overlayers on InP(110): Effect of Surface Relaxation," J. Vac. Sci. Technol. A **9**, 1972-1976 (1991).
342. H.M. Meyer III, D.M. Hill, J.H. Weaver, K.C. Goretta, and U. Galachandran, "Ni/YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> and Ni/Bi<sub>2</sub>Sr<sub>2</sub>Ca<sub>0.8</sub>Y<sub>0.2</sub>Cu<sub>2</sub>O<sub>x</sub> Interface Formation: Reactivity, Segregation, and Chemical Trapping," J. Mat. Res. **6**, 270-277 (1991).
343. M.C. Schabel, I.M. Vitomirov, G.D. Waddill, and J.H. Weaver, "Photoelectron Mean Free Paths and Thermal Broadening for GaAs(110)," J. Electron Spectros. & Rel. Phenom. **56**, 211-216 (1991).
344. C.M. Aldao, I.M. Vitomirov, and J.H. Weaver, Properties of InP, Datareview Series No. 6, Inspec, "Structure of the Ag/InP Interface; Structure of the Au/In Interface; Barrier Heights at the Ag/InP Interface; Barrier Height at the Au/InP Interface," Sections 14.3-14.6, pp. 304-314 (1991).
- 1992** J.H. Weaver, "Fullerenes and Fullerides: Photoemission and Scanning Tunneling Microscopy Studies," Accounts of Chemical Research **25**, 143-149 (1992) (#33 above).
345. T.R. Ohno, G.H. Kroll, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Doping of C<sub>60</sub> with Iodine," Nature **355**, 401 (1992).
346. T. Guo, M.D. Diener, Y. Chai, M.J. Alford, R.E. Haufler, S.M. McClure, T.R. Ohno, J.H. Weaver, G.E. Scuseria, and R.E. Smalley, "Uranium Stabilization of C<sub>28</sub>: A Tetravalent Fullerene," Science **257**, 1661-1664 (1992).
347. J.C. Patrin, Y.Z. Li, and J.H. Weaver, "Cluster Growth of Al on Stepped and Unstepped GaAs(110) at 300 K: A Scanning Tunneling Microscopy Examination," Phys. Rev. B **45**, 1756-1761 (1992).
348. Y.-N. Yang, Y.S. Luo, and J.H. Weaver, "Ag Crystallite Formation and Coalescence on Hydrogen-terminated GaAs(110)," Phys. Rev. B **45**, 3606-3611 (1992).
349. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Orientational Ordering and Domain Wall Formation in Sb Overlayers on GaAs(110)," Phys. Rev. B Rapid Commun. **45**, 3918-3921 (1992).
350. C. Gu, F. Stepniak, D.M. Poirier, M.B. Jost, P.J. Benning, Y. Chen, T.R. Ohno, J.L. Martins, J.H. Weaver, J. Fure, and R.E. Smalley, "Metallic and Insulating Phases of Li<sub>x</sub>C<sub>60</sub>, Na<sub>x</sub>C<sub>60</sub>, and Rb<sub>x</sub>C<sub>60</sub>," Phys. Rev. B Rapid Commun. **45**, 6348-6351 (1992).

351. P.J. Benning, D.M. Poirier, T.R. Ohno, Y. Chen, M.B. Jost, F. Stepniak, G.H. Kroll, J.H. Weaver, J. Fure, and R.E. Smalley, "C<sub>60</sub> and C<sub>70</sub> Fullerenes and Potassium Fullerides," *Phys. Rev B* **45**, 6899-6909 (1992).
352. S.C. Wu, D.M. Poirier, M.B. Jost, and J.H. Weaver, "Inverse Photoemission Study of the Pd(001) Surface," *Phys. Rev. B* **45**, 8709-8713 (1992).
353. Y. Chen, F. Stepniak, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Fullerides of Alkaline Earth Metals," *Phys. Rev. B Rapid Commun.* **45**, 8845-8848 (1992).
354. Y.-N. Yang, Y.S. Luo, and J.H. Weaver, "Anisotropic Kinetics in Overlayer Growth: An STM Study of Ge/GaAs(110)," *Phys. Rev. B Rapid Commun.* **45**, 13803-13806 (1992).
355. Y.Z. Li, M. Chander, J.C. Patrin, and J.H. Weaver, "Adsorption of Individual C<sub>60</sub> Molecules on Si(111)," *Phys. Rev. B Rapid Commun.* **45**, 13837-13840 (1992).
356. Y.S. Luo, Y.-N. Yang, and J.H. Weaver, "Mechanisms for Adatom-Induced Disruption of Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8</sub>(001): STM Studies of Ag, Au, and Cr Growth," *Phys. Rev. B* **46**, 1114-1121 (1992).
357. Y. Chen, D.M. Poirier, M.B. Jost, C. Gu, T.R. Ohno, J.L. Martins, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Electronic Structure of Ca<sub>x</sub>C<sub>60</sub> Fullerides," *Phys. Rev. B Rapid Commun.* **46**, 7961-7964 (1992).
358. C. Gu, Y. Chen, T.R. Ohno, and J.H. Weaver, "Br<sub>2</sub> Adsorption on GaAs(110) and Surface Etching at Low Temperature," *Phys. Rev. B* **46**, 10197-10200 (1992).
359. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Sb and Bi on GaAs(110): Substrate Stabilized Overlayer Structures Studied with Scanning Tunneling Microscopy," *Phys. Rev. B* **46**, 10221-10231 (1992).
360. T.R. Ohno, G.H. Kroll, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Yb and Yb-K-Fulleride Formation, Bonding, and Electrical Character," *Phys. Rev. B* **46**, 10437-10441 (1992).
361. Y.Z. Li, J.C. Patrin, M. Chander, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Real-Space Imaging of Ca<sub>x</sub>C<sub>60</sub> Using Scanning Tunneling Microscopy," *Phys. Rev. B Rapid Commun.* **46**, 12914-12917 (1992).
362. Y.-N. Yang, Y.S. Luo, and J.H. Weaver, "An STM Study of Ge/GaAs(110) I: Initial Nucleation and Growth," *Phys. Rev. B* **46**, 15387-15393 (1992).
363. Y.-N. Yang, Y.S. Luo, and J.H. Weaver, "An STM Study of Ge/GaAs(110) II: Coalescence and Layer-by-Layer Growth," *Phys. Rev. B* **46**, 15394-15403 (1992).
364. Y.-N. Yang, Y.S. Luo, J.H. Weaver, L.T. Florez, and C.J. Palmström, "The Effects of Annealing on the Surface Morphology of Decapped GaAs(001)," *Appl. Phys. Lett.* **61**, 1930-1932 (1992).
365. J.H. Weaver, Y. Chai, T.R. Ohno, G.H. Kroll, C. Jin, R.E. Haufler, T. Guo, J.M. Alford, J. Conceicao, L.P.F. Chibante, G.A. Palmer, and R.E. Smalley, "XPS Probes of Carbon-Caged Metals," *Chem. Phys. Lett.* **190**, 460-464 (1992).
366. J.H. Weaver, "Electronic Structures of C<sub>60</sub>, C<sub>70</sub>, and the Fullerides: Photoemission and Inverse Photoemission Studies," *J. Phys. Chem. Solids* **53**, 1433-1447 (1992).
367. J.H. Weaver, P.J. Benning, F. Stepniak, and D.M. Poirier, "K<sub>x</sub>C<sub>60</sub>: Nonequilibrium Thin Film Growth and Spectroscopic Results," *J. Phys. Chem. Solids* **53**, 1707-1711 (1992).
368. C.M. Aldao, A. Palermo, and J.H. Weaver, "Calculated Photocurrents and Surface Barrier Heights," *J. Vac. Sci. Technol. A* **10**, 493-496 (1992).
369. R. Duszak, C.J. Palmström, L.T. Florez, Y.-N. Yang, and J.H. Weaver, "Dramatic Work Function Variations of MBE Grown GaAs(100) Surfaces," *J. Vac. Sci. Technol. B* **10**, 1891-1897 (1992).
370. D.L. Lichtenberger, C.D. Ray, F. Stepniak, Y. Chen, and J.H. Weaver, "The Electronic Nature of the Metal-Metal Quadruple Bond: Variable Photon Energy Photoelectron Spectroscopy of Mo<sub>2</sub>(O<sub>2</sub>CCH<sub>3</sub>)<sub>4</sub>," *J. Am. Chem. Soc.* **114**, 104922-10497 (1992).

**1993**

C.M. Aldao and J.H. Weaver "Atomic-Scale Chemistry of Metal-Semiconductor Interfaces," Chapter 7 in *Contacts to Semiconductor Surfaces*, edited by L.J. Brillson (Noyes Publication, New Jersey, 1993) pp. 465-555 (#14 above).

- J.H. Weaver, "Overlayer Formation on High Temperature Superconductors," Chapter 7 in *Interfaces in Superconducting Systems*, edited by S. Shindé and D. Rudman (Springer-Verlag, 1993) (#15 above) pp. 210-235.
- J.H. Weaver, G.D. Waddill, I.M. Vitomirov, and C.M. Aldao, "Cluster-Assembled Interfaces," in *On Clusters and Clustering: From Atoms to Fractals*, edited by Peter J. Reynolds (North Holland, 1993) pp. 179-192 (#16 above).
- J.H. Weaver and H.P.R. Frederikse, "Optical Properties of Metals and Semiconductors," 74th and subsequent editions of *CRC Handbook of Chemistry and Physics* (CRC Press, Boca Raton, 1993) (#17 above) pp. 12-109 – 12-131.
371. M. Chander, Y.Z. Li, and J.H. Weaver, "Patterning of Si(100): Spontaneous Etching with Br<sub>2</sub>," *Phys. Rev. Lett.* **71**, 4154-4157 (1993).
372. P.J. Benning, T.R. Ohno, J.H. Weaver, P. Mukherjee, J.L. Adcock, R.N. Compton, and B.I. Dunlap, "Electronic Structure of Highly Fluorinated C<sub>60</sub>," *Phys. Rev. B* **47**, 1589-1592 (1993).
373. T.R. Ohno, Y. Chen, S.E. Harvey, G.H. Kroll, P.J. Benning, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Metal Overlayer Formation on C<sub>60</sub> for Ti, Cr, Au, La, and In: Dependence on Metal-C<sub>60</sub> Bonding," *Phys. Rev. B* **47**, 2389-2393 (1993).
374. D.M. Poirier, T.R. Ohno, G.H. Kroll, P.J. Benning, F. Stepniak, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "X-Ray Photoemission Investigations of Binary and Ternary Fullerides of Na, K, Rb, and Cs," *Phys. Rev. B* **47**, 9870-9877 (1993).
375. Y.Z. Li, J.C. Patrin, M. Chander, J.H. Weaver, and K. Kikuchi, Y. Achiba, "Overlayer Growth and Molecular Structures of C<sub>84</sub> and Other Large Fullerenes: An STM Study," *Phys. Rev. B* **47**, 10867-10872 (1993).
376. D.M. Poirier and J.H. Weaver, "K<sub>1</sub>C<sub>60</sub> Fulleride Phase Formation: An X-ray Photoemission Study," *Phys. Rev. B Rapid Commun.* **47**, 10959-10962 (1993).
377. M. Chander, Y.Z. Li, J.C. Patrin, and J.H. Weaver, "Layer-by-Layer Etching of Si(100)-2×1 with Br<sub>2</sub>: An STM Study," *Phys. Rev. B Rapid Commun.* **47**, 13035-13038 (1993).
378. P.J. Benning, F. Stepniak, D.M. Poirier, J.L. Martins, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Electronic Properties of K-doped C<sub>60</sub>(111): Photoemission and Electron Correlation," *Phys. Rev. B* **47**, 13843-13847 (1993).
379. T.R. Ohno, C. Gu, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Electronic Properties of Hydrogen-Bonded Fullerenes and Potassium Fullerides," *Phys. Rev. B* **47**, 13848-13853 (1993).
380. F. Stepniak, P.J. Benning, D.M. Poirier, and J.H. Weaver, "Electrical Transport in Na, K, Rb, and Cs Fullerides: Phase Transformation, Microstructure, and Metallicity," *Phys. Rev. B* **48**, 1899-1906 (1993).
381. M. Chander, Y.Z. Li, J.C. Patrin, and J.H. Weaver, "Si(001)-2×1 Surface Defects and Dissociative and Nondissociative Adsorption of H<sub>2</sub>O: An STM Study," *Phys. Rev. B* **48**, 2493-2499 (1993).
382. P.J. Benning, F. Stepniak, and J.H. Weaver, "Electron Diffraction and Photoelectron Spectroscopy Studies of Fullerene and Alkali-Metal Fulleride Films," *Phys. Rev. B* **48**, 9086-9096 (1993).
383. J.C. Patrin and J.H. Weaver, "Br<sub>2</sub> and Cl<sub>2</sub> Adsorption and Etching of GaAs(110) Studied by Scanning Tunneling Microscopy," *Phys. Rev. B* **48**, 17913-17921 (1993).
384. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Atomic Layer Etching of GaAs(110) with Br<sub>2</sub> Studied by STM," *Appl. Phys. Lett.* **62**, 1277-1279 (1993).
385. T.R. Ohno, G.H. Kroll, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "C<sub>60</sub> Matrix-Isolated Xe: Plasmon Shifts and Polarization Effects," *Surf. Sci. Lett.* **294**, L964-968 (1993).
386. Y.B. Zhao, D.M. Poirier, and J.H. Weaver, "K<sub>x</sub>C<sub>60</sub> Structural Evolution: Scanning Tunneling Microscopy and Low Energy Electron Diffraction," *J. Phys. Chem. Solids* **54**, 1684-1692 (1993).
387. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Bi Thin Film Growth Structures Prepared at 30 K on GaAs(110) and InP(110)," *J. Vac. Sci. Technol. A* **11**, 2073-2077 (1993).
388. D.M. Poirier, J.H. Weaver, K. Kikuchi, and Y. Achiba, "Electronic Structure of C<sub>84</sub> and K<sub>x</sub>C<sub>84</sub>: Comparison to C<sub>60</sub> and Graphite" *Z. Physik D* **26**, 79-83 (1993).

389. J.H. Weaver, D.M. Poirier, and Y.B. Zhao, "K-C<sub>60</sub>: Growth Structures, Phase Formation, and Electronic Properties," Springer Series of Solid State Sciences **117**, 146-153 (1993).
- 1994**
- J.H. Weaver and D.M. Poirier, "Solid State Properties of Fullerenes and Fullerene-Based Materials," Chapter 1 in *Fullerene Fundamentals*, Solid State Physics Vol. 48, edited by H. Ehrenreich and F. Spaepen (Academic Press, Cambridge, 1994) pp. 1-108 (#18 above) .
- D.M. Poirier and J.H. Weaver, "Standard and Reference XPS Spectra for Cleaved Semiconductors: Group IV, III-V, and II-VI [Si(111), Ge(111), GaP(110), GaAs(110), InP(110), InAs(110), InSb(110), CdS, CdTe(110), diamond, graphite, and C<sub>60</sub>]," Special Issue of Surface Science Spectra (1993/1994) pp. 195-269 (#19 above).
390. J.H. Weaver, Review of *Buckminsterfullerenes*, edited by W.E. Billups and M.A. Ciufolini (VCH Publishers, New York, 1993), Physics Today **47**, 64-66 (1994).
391. J.H. Weaver, Review of *The Fullerenes: New Horizons for the Chemistry, Physics, and Astrophysics of Carbon*, edited by H.W. Kroto and D.R.M. Walton (Cambridge University Press, Cambridge, 1993), Physics Today **47**, 64-66 (1994).
392. J.H. Weaver, "Totally Tubular: A Perspective on Carbon Nanotubes," Science **265**, 611-612 (1994).
393. J.H. Weaver, "Vacuum Physics," Physics News in 1994 (December 1994).
394. Y.S. Luo, Y.-N. Yang, J.H. Weaver, L.T. Florez, and C.J. Palmström, "Multi-Orientational Growth of Al on GaAs(001) Studied with STM," Phys. Rev. B **49**, 1893-1899 (1994).
395. M. Knupfer, D.M. Poirier, and J.H. Weaver, "Electron Correlation and Phase Dependent Electronic Structure of C<sub>70</sub>," Phys. Rev. B Rapid Commun. **49**, 2281-2284 (1994).
396. M. Knupfer, F. Stepniak, and J.H. Weaver, "Electronic States of the BaC<sub>60</sub> Compounds" Phys. Rev. B **49**, 7620-7624 (1994).
397. M. Knupfer, D.M. Poirier, and J.H. Weaver, "K-C<sub>70</sub>: Stable Phases and Electronic Structure," Phys. Rev. B **49**, 8465-8474 (1994).
398. D. Rioux, M. Chander, Y.Z. Li, and J.H. Weaver, "Bromine Interaction with Si(100)-2×1: Chemisorption and the Initial Stages of Etching," Phys. Rev. B **49**, 11071-11079 (1994).
399. D. Rioux, R.J. Pechman, M. Chander, and J.H. Weaver, "Temperature Dependent Surface Morphologies for Br-etched Si(100)-2×1," Phys. Rev. B **50**, 4430-4438 (1994).
400. D.M. Poirier, M. Knupfer, J.H. Weaver, W. Andreoni, K. Laasonen, M. Parrinello, D.S. Bethune, K. Kikuchi, and Y. Achiba, "Electronic Structure of La@C<sub>82</sub> and C<sub>82</sub>: Theory and Experiment," Phys. Rev. B **49**, 17403-17412 (1994).
401. F. Stepniak, D. Rioux, and J.H. Weaver, "Prelude to Etching: Surface Interaction of Chlorine on GaAs(110)," Phys. Rev. B **50**, 1929-1934 (1994).
402. P.J. Benning, C.G. Olson, D.W. Lynch, and J.H. Weaver, "Band Dispersion in C<sub>60</sub>(111): An Angle Resolved Photoemission Study," Phys. Rev. B Rapid Commun. **50**, 11239-11242 (1994).
403. Y.B. Zhao, D.M. Poirier, R.J. Pechman, and J.H. Weaver, "Electron Stimulated Polymerization of Solid C<sub>60</sub>," Appl. Phys. Lett. **64**, 577-579 (1994).
404. X.-S. Wang, R.J. Pechman, and J.H. Weaver, "Interaction of 300-5000 eV Ions with GaAs(110)," Appl. Phys. Lett. **65**, 2818-2820 (1994).
405. F. Stepniak and J.H. Weaver, "Effect of Cl Incorporation during the Oxidation of Si," J. Vac. Sci. Technol. B **12**, 3031-3035 (1994).
406. R.T. Laaksonen, D.A. Goetsch, D.W. Owens, D.M. Poirier, F. Stepniak, and J.H. Weaver, "Supersonic Cluster Source with Mass Selection and Energy Control," Rev. Sci. Instr. **65**, 2267-2275 (1994).
407. D.M. Poirier and J.H. Weaver, "Alkali-Metal-Fulleride Phase Diagram Determination with X-ray Photoemission Spectroscopy," in *Progress in Fullerene Research*, edited by H. Kuzmany, J. Fink, M. Mehring, and S. Roth (World Scientific Publishing, 1994) pp. 247-256.



408. D.T. Colbert, J. Zhang, S.M. McClure, P. Nikolaev, Z. Chen, J.H. Hafner, D.W. Owens, P.G. Kotula, C.B. Carter, J.H. Weaver, A.G. Rinzler, and R.E. Smalley, "Growth and Sintering of Fullerene Nanotubes," *Science* **266**, 1218-1222 (1994).
- 1995** J.H. Weaver, "Fullerenes Viewed with STM, Photoemission, and Inverse Photoemission," Chapter 17 in the *Handbook of Surface Imaging and Visualization*, edited by A. Hubbard (CRC Press, Boca Raton, Florida, 1995), pp. 215-222 (#20 above).
409. M. Chander, D.A. Goetsch, C.M. Aldao, and J.H. Weaver, "Determination of Dynamic Parameters Controlling Atomic Scale Etching of Si(100)-2x1 by Chlorine," *Phys. Rev. Lett.* **74**, 2014-2017 (1995).
410. D.M. Poirier, D.W. Owens, and J.H. Weaver, "Alkali-Metal-Fulleride Phase Equilibria," *Phys. Rev. B* **51**, 1830-1843 (1995).
411. R.J. Pechman, X.-S. Wang, and J.H. Weaver, "Vacancy Kinetics on GaAs(110)," *Phys. Rev. B* **51**, 10929-10936 (1995).
412. D. Rioux, F. Stepniak, R.J. Pechman, and J.H. Weaver, "Chemisorption and Thermally-activated Etching of Si(100)-2x1 by Iodine," *Phys. Rev. B* **51**, 10981-10988 (1995).
413. D.W. Owens, C.M. Aldao, D.M. Poirier, and J.H. Weaver, "Charge Transfer, Doping, and Interface Morphologies for Al/C<sub>60</sub>," *Phys. Rev. B* **51**, 17068-17072 (1995).
414. M. Chander, D.A. Goetsch, C.M. Aldao, and J.H. Weaver, "Etching of Si(100)-2x1 with Chlorine: Reaction Pathways, Energy Anisotropies, and Atomic Scale Phenomena," *Phys. Rev. B* **52**, 8288-8294 (1995).
415. X.-S. Wang, R.J. Pechman, and J.H. Weaver, "Ion Sputtering of GaAs(110): From Individual Bombardment Events to Multilayer Removal," *J. Vac. Sci. Technol. B* **13**, 2031-2040 (1995).
416. R.J. Pechman, X.-S. Wang, and J.H. Weaver, "Interactions of Br with Si(111)-7x7: Chemisorption, Step Retreat, and Terrace Etching," *Phys. Rev. B* **52**, 11412-11423 (1995).
417. J.R. Sánchez, C.M. Aldao, and J.H. Weaver, "Analysis and Monte Carlo Simulations of Spontaneous Etching: Cl-Si(100)-2x1," *J. Vac. Sci. Technol. B* **13**, 2230-2233 (1995).
418. R.J. Pechman, T. Moriwaki, J.H. Weaver, and G.S. Khoo, "Formation of Br-terminated Si<sub>6</sub> Rings during Etching of Si(111)-7x7," *Surf. Sci. Lett.* **341**, L1085-1090 (1995).
419. D.M. Poirier, C.G. Olson, and J.H. Weaver, "Electronic States and Stability of the Insulating RbC<sub>60</sub> Dimer Phase," *Phys. Rev. B Rapid Commun.* **52**, R11662-11664 (1995).
- 1996** 420. X.-S. Wang, J. Brake, R.J. Pechman, and J.H. Weaver, "Effect of Ion Sputtering on Ge Epitaxy on GaAs(110)," *Appl. Phys. Lett.* **68**, 1660-1662 (1996).
421. J. Brake, X.-S. Wang, R.J. Pechman, and J.H. Weaver, "Enhanced Epitaxial Growth on Substrates Modified by Ion Sputtering: Ge on GaAs(110)," *Phys. Rev. B* **53**, 11170-11175 (1996).
422. Y. Gong, D.W. Owens, and J.H. Weaver, "Etching of Double-height-stepped Si(100)-2x1: A Study of Steps and Their Interactions," *Phys. Rev. B Rapid Commun.* **53**, R16144-R16147 (1996).
423. S.A. Ding, G. Neuhold, J.H. Weaver, P. Häberle, K. Horn, O. Brandt, H. Yang, and K. Ploog, "Electronic Structure of Cubic Gallium Nitride Films grown on GaAs," *J. Vac. Sci. Technol. B* **14**, 819-824 (1996).
424. F.J. Williams, C.M. Aldao, and J.H. Weaver, "Surface Morphologies for Br-etched Si(100)-2x1: Kinetics of Pit Growth and Step Retreat," *J. Vac. Sci. Technol.* **14**, 2519-2523 (1996).
425. X.-S. Wang, R.J. Pechman, and J.H. Weaver, "Trends in Surface Roughening: Analysis of Ion-sputtered GaAs(110)," *Surf. Sci.* **364**, 511-518 (1996).
426. C.Y. Cha and J.H. Weaver, "Layer-by-Layer Removal of GaAs(110) by Bromine," *J. Vac. Sci. Technol. B* **14**, 3559-3562 (1996).
- 1997** J.H. Weaver, "Have buckyballs been put to any practical use?," in Ask the Experts, Scientific American Online, Week of July 7, 1997 <www.sciam.com/> (#34 above).

427. F.J. Williams, C.M. Aldao, Y. Gong, and J.H. Weaver, "Why Si(100) Steps are Rougher after Etching," Phys. Rev. B **55**, 13829-13834 (1997).
428. B.Y. Han, C.Y. Cha, and J.H. Weaver, "Etch Pit Development and Growth on GaAs(110)," Phys. Rev. B **56**, 4966-4970 (1997).
429. C.Y. Cha, B.Y. Han, and J.H. Weaver, "Pulsed-laser-induced Etching of Br-GaAs(110)," Surf. Sci. Lett. **381**, L636-L643 (1997).
430. C.Y. Cha, J. Brake, B.Y. Han, D.W. Owens, and J.H. Weaver, "Surface Morphologies Associated with Thermal Desorption: Scanning Tunneling Microscopy Studies of Br-GaAs(110)," J. Vac. Sci. Technol. B **15**, 605-609 (1997).
431. J. Brake, C.Y. Cha, B.Y. Han, D.W. Owens, and J.H. Weaver, "Coverage-dependent Etching Pathways for Br-GaAs(110)," J. Vac. Sci. Technol. B **15**, 670-674 (1997).
432. C.M. Aldao and J.H. Weaver, "Scanning Tunneling Microscopy Observations and Analysis of Thermal Etching of Si(100) with Br and Cl," Japanese J. Appl. Phys. **36**, 2456-2459 (1997).

**1998**

- J.J. Boland and J.H. Weaver, "A Surface View of Etching," Physics Today **51**, 34-40 (1998) (#35 above).
- B.Y. Han and J.H. Weaver, "Spontaneous and Laser-enhanced Halogen Etching of GaAs," Special issue featuring Surface Science and Interfaces of Journal of Physics: Condensed Matter **10**, 7723-7742 (1998) (#21 above).
433. Lin Huang, S.J. Chey, and J.H. Weaver, "Buffer-Layer-Assisted Growth of Nanocrystals: Ag-Xe-Si(111)," Phys. Rev. Lett. **80**, 4095-4098 (1998).
434. B.Y. Han, C.Y. Cha, and J.H. Weaver, "Layer-by-Layer Etching of GaAs(110) with Halogenation and Pulsed-Laser Interaction," J. Vac. Sci. Technol. A **16**, 490-493 (1998).
435. S. J. Chey, Lin Huang, and J.H. Weaver, "Manipulation and Writing with Ag Nanocrystals on Si(111)-7x7," Appl. Phys. Lett. **72**, 2698-2700 (1998). See also C&E News **76**, 34-36 (June 22, 1998).
436. S.J. Chey, Y. Gong, and J.H. Weaver, "Surface Morphologies of Br-etched Ge/Si(001)," Surf. Sci. **409**, 421-427 (1998).
437. J.L. Iguain, H.O. Martin, C.M. Aldao, Y. Gong, S.J. Chey, and J.H. Weaver, "Dimer Chain Patterns during Submonolayer Growth of Silicon on Si(100)," J. Vac. Sci. Technol. A **16**, 3460-3463 (1998).
438. L. Huang, S.J. Chey, and J.H. Weaver, "Metastable Structures and Critical Thicknesses: Ag on Si(111)-7x7," Surf. Sci. Lett. **416**, L1101-1106 (1998).
439. B.Y. Han and J.H. Weaver, "Laser Interaction with Br-GaAs(110): Etching and Atomic Desorption," Phys. Rev. B **58**, 10981-10990 (1998).
440. S.J. Chey, L. Huang, and J.H. Weaver, "Self-Assembly of Multilayer Arrays from Ag Nanoclusters Delivered to Ag(111) by Soft Landing," Surf. Sci. Lett. **419**, L100-106 (1998).

**1999**

- J.H. Weaver and C.M. Aldao, "Spontaneous Halogen Etching of Si," in *Morphological Organizations during Epitaxial Growth*, edited by Z.Y. Zhang and M.G. Lagally (World Scientific Series on Directions of Condensed Matter Physics, 1999) pp. 453-484 (#22 above).
441. K. Nakayama, C.M. Aldao, and J.H. Weaver, "Vacancy-assisted Halogen Etching Si(100)-2x1," Phys. Rev. Lett. **82**, 568-571 (1999). See also Physical Review Focus, 21 January 1999 at <<http://focus.aps.org/v3/st4.html>>.
442. K. Nakayama and J.H. Weaver, "Electron-Stimulated Modification of Si Surfaces," Phys. Rev. Lett. **82**, 980-983 (1999). See also, Parity, **14**, 44-46 (1999); Search & Discovery in Physics Today, 20 April 1999; and C&E News **77**, 8-9 (January 25, 1999).
443. S. Jay Chey, L. Huang, and J.H. Weaver, "Interface Bonding and Manipulation of Ag and Cu Nanocrystals on Si(111)-(7x7)-based Surfaces" Phys. Rev. B **59**, 16033-16041 (1999).
444. K.S. Nakayama, C.M. Aldao, and J.H. Weaver, "Halogen Etching of Si(100)-2x1: Dependence on Surface Concentration and Vacancy Creation," Phys. Rev. B **59**, 15893-15901 (1999).

445. P. Baumgärtel, J.J. Paggel, M. Hasselblatt, K. Horn, V. Fernandez, O. Schaff, J.H. Weaver, A.M. Bradshaw, D.P. Woodruff, E. Rotenberg, and J. Denlinger, "Structure Determination of the ( $\sqrt{3}\times\sqrt{3}$ )R30° Boron Phase on the Si(111) Surface using Photoelectron Diffraction," *Phys. Rev. B* **59**, 13014-13019 (1999).
446. K.S. Nakayama and J.H. Weaver, "Si(100)-2x1 Etching with Fluorine: Planar Removal vs. Three Dimensional Pitting," *Phys. Rev. Lett.* **83**, 3210-3213 (1999).
447. B.Y. Han, K.S. Nakayama, and J.H. Weaver, "Electron and Photon-stimulated Modification of GaAs(110), Si(100), and Si(111)," *Phys. Rev. B* **60**, 13846-13853 (1999).
- 2000** 448. M.M.R. Evans, B.Y. Han, and J.H. Weaver, "Ag Films on GaAs(110): Dewetting and Void Growth," *Surf. Sci.* **465**, 90-96 (2000).
449. K.S. Nakayama, T. Sakurai, and J.H. Weaver, "Electrochemical Fluorine Source for Ultrahigh Vacuum Dosing," *J. Vac. Sci. Technol. A* **18**, 2606-2607 (2000).
- K.S. Nakayama, B.Y. Han, and J.H. Weaver, "Electron- and Photon-stimulated Modification of Semiconductor Surfaces," *Butsuri (The Physical Society of Japan)* **55**, 281-285 (2000). In Japanese, same as #447
- 2001** C.M. Aldao and J.H. Weaver, "Halogen Etching of Si via Atomic-scale Processes," review article, *Progress in Surface Science* **68**, 189-230 (2001) (#23 above).
- 2002** 450. K.S. Nakayama, E. Graugnard, and J.H. Weaver, "Surface Modification without Desorption: Recycling of Cl on Si(100)-2x1," *Phys. Rev. Lett.* **88**, 125508 (2002). See also *C&E News* **80**, 38 (March 25, 2002).
451. C.L. Haley and J.H. Weaver, "Buffer-Layer-Assisted Growth via Two-Dimensional Diffusion-Limited Cluster Aggregation," *Surf. Sci.* **518**, 243-250 (2002).
452. K.S. Nakayama, E. Graugnard, and J.H. Weaver, "Tunneling-Electron-Induced Bromine Hopping on Si(100)-2x1," *Phys. Rev. Lett.* **89**, 266106 (2002).
- 2003** 453. V.N. Antonov and J.H. Weaver, "CO-induced Morphology Modification in Buffer-Layer-Assisted Growth of Pd Nanostructures," *Surf. Sci.* **526**, 97-106 (2003).
454. G.J. Xu, E. Graugnard, V. Petrova, K.S. Nakayama, and J.H. Weaver, "Dynamics of Surface Roughening of Cl-terminated Si(100)-2x1 at 700 K," *Phys. Rev. B* **67**, 125320 (2003).
455. G.J. Xu, K.S. Nakayama, B.R. Trenhaile, C.M. Aldao, and J.H. Weaver, "Equilibrium Morphologies for Cl-Roughened Si(100) at 700-750 K: Dependence on Cl Concentration," *Phys. Rev. B* **67**, 125321 (2003).
456. G.J. Xu, E. Graugnard, B.R. Trenhaile, K.S. Nakayama, and J.H. Weaver, "Atom Vacancy Lines and Surface Patterning: The Role of Stress for Br- Si(100)-(2x1) at 700 K," *Phys. Rev. B* **68**, 75301(2003).
457. V.N. Antonov, J.S. Palmer, A.S. Bhatti, and J.H. Weaver, "Nanostructure Diffusion and Aggregation on Desorbing Rare Gas Solids: Slip on an Incommensurate Lattice" *Phys. Rev. B* **68**, 205418 (2003)
458. G.J. Xu, S.V. Khare, K.S. Nakayama, C.M. Aldao, and J.H. Weaver, "Step Free Energies, Surface Stress, and Adsorbate Interactions for Cl-Si(100) at 700 K," *Phys. Rev. B* **68**, 235318 (2003).
- 2004** 459. C.M. Aldao, S.E. Guidoni, G.J. Xu, K.S. Nakayama, and J.H. Weaver, "Monte Carlo Modeling of Si(100) Roughening due to Adsorbate-Adsorbate Repulsion," *Surf. Sci.* **551**, 143-149 (2004).
460. J.H. Weaver and V.N. Antonov, "Synthesis and Patterning of Nanostructures of (Almost) Anything on Anything," *Surf. Sci.* **557**, 1-3 (2004). See also *C&E News* **82**, 6 (May 3, 2004), *Science Editor's Choice* **304**, 797 (2004), and *Physics Today* **57** (6), 22 (2004).
461. V.N. Antonov, J.S. Palmer, P.S. Waggoner, A.S. Bhatti, and J.H. Weaver, "Nanoparticle Diffusion on Desorbing Solids: The Role of Elementary Excitations in Buffer-Layer-Assisted Growth," *Phys. Rev. B* **70**, 45406 (2004).
462. G.J. Xu and J.H. Weaver, "Si Epitaxial Growth on Br-Si(100): How Steric Repulsive Interactions Influence Overlayer Development," *Phys. Rev. B* **70**, 165321 (2004).
- 2005** 463. K.S. Nakayama and J.H. Weaver, "Ag Multilayer Island Growth on Br-Si(100)-(2x1) and Ag-induced Nano-pitting," *Surf. Sci.* **574**, 331-337 (2005).

464. G.J. Xu, A.W. Signor, Abhishek Agrawal, K.S. Nakayama, B.R. Trenhaile, and J.H. Weaver, "Halogen Chemisorption, Pairwise Diffusion of Iodine, and Trapping by Defects," *Surf. Sci.* **577**, 77-85 (2005).
465. G.J. Xu, N.A. Zarkevich, Abhishek Agrawal, A.W. Signor, B.R. Trenhaile, D.D. Johnson, and J.H. Weaver, "Cross-over Energetics for Halogenated Si(100): Vacancy Line Defects, Dimer Vacancy Lines, and Atom Vacancy Lines," *Phys. Rev. B* **71**, 115332 (2005).
466. B.R. Trenhaile, V.N. Antonov, G.J. Xu, K.S. Nakayama, and J.H. Weaver, "Electron Stimulated Desorption from a Surprising Source: Internal Hot Electrons for Br-Si(100)-(2x1)," *Surf. Sci. Lett.* **583/1**, L135-L141, accompanied by Perspective by R.J. Hamers, "Bond-breaking at Surfaces: Electrons or Phonons?" See also Physics Update "A New Mode for Desorption," *Physics Today* **58**, 9 (2005); Editor's Choice, "Not-So-Thermal Desorption," *Science* **308**, 604 (2005); News of the Week, "Surface Bonding Reconsidered," *C&E News* **83**, 7 (2005); and Chemical Highlights of 2005, *C&E News* **83**, 20 (2005).
467. J.S. Palmer, V.N. Antonov, A.S. Bhatti, P. Swaminathan, P.S. Waggoner, and J.H. Weaver, "The Effects of Buffer Structure on Buffer-Layer-Assisted Growth: Grain Boundaries, Grooves, and Pattern Transfer," *Surf. Sci.* **595**, 64-72 (2005).
468. P.S. Waggoner, J.S. Palmer, V.N. Antonov, and J.H. Weaver, "Metal Nanostructure Growth on Buffer Layers of Molecular CO<sub>2</sub>," *Surf. Sci.* **596**, 12-20 (2005).
- 2006** 469. K.S. Nakayama, T. Sugano, K. Ohmori, A.W. Signor, and J.H. Weaver, "Chemical Fingerprinting at the Atomic Level with Scanning Tunneling Spectroscopy," *Surf. Sci.* **600**, 716-723 (2006).
470. K.S. Nakayama, M.M.G. Alemany, H. Kwak, T. Sugano, K. Ohmori, J.R. Chelikowsky, and J.H. Weaver, "Electronic Structure of Si(001)-c(4x2) Analyzed by Scanning Tunneling Spectroscopy and *ab initio* Simulations," *Phys. Rev. B* **73**, 035330 (2006).
471. V.N. Antonov, P. Swaminathan, J.A.N.T. Soares, J.S. Palmer, and J.H. Weaver, "Photoluminescence of CdSe Quantum Dots and Rods from Buffer-Layer-Assisted Growth," *Appl. Phys. Lett.* **88**, 121906 (2006).
472. B.R. Trenhaile, V.N. Antonov, G.J. Xu, A. Agrawal, A.W. Signor, R. Butera, K.S. Nakayama, and J.H. Weaver, "Phonon-Activated, Electron-Stimulated Desorption of Halogens from Si(100)-(2x1)," *Phys. Rev. B* **73**, 125318 (2006).
473. P. Swaminathan, V.N. Antonov, J.A.N.T. Soares, J.S. Palmer, and J.H. Weaver, "Cd-based II-VI Semiconductor Nanostructures Produced by Buffer Layer Assisted Growth: Structural Evolution and Photoluminescence," *Phys. Rev. B* **73**, 125430 (2006).
474. B.R. Trenhaile, G.J. Xu, and J.H. Weaver, "Bromine as a Surfactant in Germanium Growth on Si(100)," *Surf. Sci.* **600**, 2907-12 (2006).
475. B.R. Trenhaile, A. Agrawal, and J.H. Weaver, "Oxygen Atoms on Si(100)-(2x1): Imaging with Scanning Tunneling Microscopy," *Appl. Phys. Lett.* **89**, 151917 (2006).
- 2007** 476. A.S. Bhatti, V.N. Antonov, P. Swaminathan, J.S. Palmer, and J.H. Weaver, "Anomalous Photoluminescence Behavior for Amorphous Ge Quantum Dots Produced by Buffer-Layer-Assisted Growth," *Appl. Phys. Lett.* **90**, 011903 (2007).
477. J.H. Weaver, Review of "The Physics of Semiconductors: An Introduction Including Devices and Nanophysics," by Marius Grundmann, *Physics Today* **60**, 63-64 (2007).
478. A. Agrawal, R.E. Butera, and J.H. Weaver, "Cl Insertion on Si(100)-(2x1): Etching under Conditions of Super-saturation," *Phys. Rev. Lett.* **98**, 136104 (2007).
479. P. Swaminathan, R.A. Rosenberg, G.K. Shenoy, J.S. Palmer, and J.H. Weaver, "Induced Magnetism in Cu Nanoparticles Embedded in Co," *Appl. Phys. Lett.* **91**, 202506 (2007).

- 2008** 480. R.E. Butera, A. Agrawal, and J.H. Weaver, "Coverage-dependent Chemisorption of Cl on Si(114)," Surf. Sci. **602**, 475-480 (2008).
481. J.S. Palmer, P. Swaminathan, S. Babar, and J.H. Weaver, "Solid State Dewetting-mediated Aggregation of Nanoparticles," Phys. Rev. B **77**, 195422 (2008). Editors' suggestions.
482. J.S. Palmer, S. Sivaramakrishnan, P.S. Waggoner, and J.H. Weaver, "Particle Aggregation on Dewetting Solid Water Films," Surf. Sci. **602**, 2278-2283 (2008).
483. P. Swaminathan, J.S. Palmer, and J.H. Weaver, "Competition between Particle Formation and Burrowing: Gold on Bismuth," Phys. Rev. B **78**, 115416 (2008).
484. W. Chern, J.S. Palmer, P. Swaminathan, and J.H. Weaver, "Nanoparticle Aggregation due to Dewetting of Sandwiched Buffer Layers," Surf. Sci. **602**, 2816-2818 (2008).
- 2009** 485. C.M. Aldao, Abhishek Agrawal, R.E. Butera, and J.H. Weaver, "Atomic Processes during Cl Supersaturation Etching of Si(100)-(2x1)," Phys. Rev. B **79**, 125303 (2009).
486. P. Swaminathan, S. Sivaramakrishnan, J.S. Palmer, and J.H. Weaver, "Size Dependence of Nanoparticle Dissolution in a Matrix: Gold in Bismuth," Phys. Rev. B **79**, 144113 (2009).
487. R.E. Butera, Yuji Suwa, Tomihiro Hashizume, and J.H. Weaver, "Adsorbate-Mediated Step Transformations and Terrace Rearrangement of Si(100)-(2x1)," Phys. Rev. B **80**, 193307 (2009).
- 2010** 488. R. E. Butera, D. A. Mirabella, C. M. Aldao, and J.H. Weaver, "Adsorbate-induced Roughening of Si(100) by Interactions at Steps," Phys. Rev. B **82**, 045309 (2010).
- 2011** 489. A. W. Signor and J.H. Weaver, "Preferential Nucleation and High Mobility of Linear Cu Trimers on Ag(111)," Phys. Rev. B **84**, 165441 (2011).

**Invited Papers:**

1. J.H. Weaver, "Optical Spectroscopy of Bulk Metals," International Conference on Physics of Transition Metals, Toronto, Canada, August 1977.
2. J.H. Weaver, "Optical and Photoelectron Spectroscopy of Metal Hydrides," American Physical Society Meeting, Washington, DC, March 1978.
3. J.H. Weaver, "Photons as a Probe of Hydrogen in Metals: Photoelectron and Optical Studies," Analysis of Hydrogen in Solids Workshop, Sandia National Laboratory, January 1979.
4. J.H. Weaver, "Synchrotron Radiation and the Photoelectric Effort," Public Lecture sponsored by Linda Hall Library and University of Missouri to commemorate the Einstein Centennial, Kansas City, November 1979.
5. M. Campagna, W. Gudat, R. Rosei, J.H. Weaver, W. Eberhardt, F. Hulliger, and E. Kaldis, "Surface Binding Energy Shifts, Mixed Valence and Localization," Magnetism and Magnetic Materials, Dallas, November 1980.
6. J.H. Weaver, "Electronic Structure of Metal Hydrogen Systems: Photoelectron Spectroscopy Studies," American Chemical Society, Pittsburgh, November 1980.
7. J.H. Weaver, "The Factors that Determine the Binding Energies of Hydrogen to the Interstice and How the Binding Energy Changes with Hydrogen Content," Gordon Research Conference, Tilton School, July 1981.
8. J.H. Weaver, "Electronic Structure of Metal Hydrides," International Symposium on the Electronic Structure and the Properties of Hydrogen in Metals, Richmond, March 1982.
9. J.H. Weaver, "Optical and Photoemission Investigations of Hydrogen in Metals," Symposium on Hydrogen in Metals and Alloys, Metallurgical Society of AIME, October 1982.
10. A. Franciosi and J.H. Weaver, "Metal Silicides and Metal-Silicon Interfaces," Trieste Conference on Surfaces and Interfaces: Physics and Electronics, Trieste, Italy, September 1982.
11. J.H. Weaver, "Electronic Properties of Metal-Silicon Interfaces and Bulk Metal Silicides," American Physical Society, Los Angeles, March 1983.
12. J.H. Weaver, "The Role of the 4f Electrons in Rare Earth Chemistry: Ce Compounds," Rare Earth Research Conference, Tallahassee, April 1983.
13. J.H. Weaver, "Synchrotron Radiation - An Overview of Its Capabilities," American Vacuum Society, Minneapolis, January 1983.
14. J.H. Weaver, "The Properties of Hydrogen in Solids," Symposium on Prospective Hydrogen Energy Cycles, American Vacuum Society, Detroit, May 1983.
15. J.H. Weaver, "Overview of Low Energy Experimental Results and Techniques," Workshop on New Directions in Photoabsorption, Asilomar, March 1984.
16. J.H. Weaver, "Resonance Photoemission as a Probe of the Local Environment," Workshop on New Directions in Photoabsorption, Asilomar, March 1984.
17. J.H. Weaver, "Metal/Semiconductor Reactions," MEIS Workshop on New Frontiers in Semiconductor Materials, University of Minnesota, Minneapolis, August 1984.
18. J.H. Weaver, "Synchrotrons and Materials Science Research: VUV Applications," an address to the DEPTH Committee, AIME/ASM, Detroit, September 1984.
19. J.H. Weaver, "Modeling Homogeneous and Heterogeneous Metal/Semiconductor Interface Reactions with Photoemission and Angle Resolved Auger Spectroscopies," International Conference on the Formation of Semiconductor Interfaces, Marseilles, France, June 1985.
20. J.H. Weaver, "Materials Science of Complex Systems: Microelectronics," Control Data High Technology Futures Workshop, Minneapolis, 1985.
21. J.H. Weaver, "High Resolution Core Level Photoemission of Interfaces," Workshop on an Advanced Soft X-Ray and Ultraviolet Synchrotron Source, Berkeley, November 1985.

**Invited Papers:**

22. J.H. Weaver, "High Resolution Photoemission Studies of Reactive Metal/Semiconductor Interfaces," International Workshop on Physics of Interfaces by Synchrotron Radiation and Other High Energy Probes, Bad Honnef, West Germany, April 1986.
23. J.H. Weaver, "Synchrotron Radiation Studies of Defects in Solids," Workshop on the Electronic Structure of Defects in Metals and Alloys, Argonne National Laboratory, Argonne, June 1986.
24. J.H. Weaver, "The Chemistry and Morphology of Metal/III-V Semiconductor Interfaces," Workshop on III-V Semiconductors: Interfacial Chemistry and Its Effect on Electrical Properties, Stanford, November 1986.
25. J.H. Weaver, "Reactions at Metal/Semiconductor Interfaces," Materials Research Society Meeting, Boston, Massachusetts, December 1986.
26. J.H. Weaver, "Reactions at Metal/Semiconductor Interfaces," Workshop on Synchrotron Radiation Research, University of Western Ontario, London, Ontario, Canada, March 1987.
27. J.H. Weaver, "Metal/Semiconductor Interface Formation," Asia-Pacific Symposium on Surface Physics, Shanghai, China, April 1987.
28. J.H. Weaver, featured lectures on metal/semiconductor interface formation and synchrotron radiation photoemission, Institutes for Physics, Semiconductor Physics, and High Energy Physics, Chinese Academy of Science, Beijing, April 1987.
29. J.H. Weaver, "Electronic Structures of Defects and Disordered Solids," US-Japan Seminar on Electronic Structure and Lattice Defects in Alloys, Honolulu, May 1987.
30. J.H. Weaver, Panelist on Microelectronics Research and Development, Congress of the United States, Office of Technology Assessment, Washington, DC, June 1987.
31. J.H. Weaver, "Growth and Characterization of Metal Overlayers on Compound Semiconductors," AIChE Conference on Emerging Technologies in Materials, Minneapolis, August 1987.
32. J.H. Weaver, "High  $T_c$  Superconductors: Occupied and Unoccupied Electronic States, Surface Stability, and Interface Formation," American Chemical Society, New Orleans, September 1987.
33. J.H. Weaver, "High Temperature Superconductors: Occupied and Unoccupied Electronic States," 20th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1987.
34. Zhangda Lin and J.H. Weaver, "Surface Segregation at Metal/III-V Semiconductor Interfaces," Solvay Conference on Surface Science, Austin, December 1987.
35. J.H. Weaver, "High Temperature Superconductors," AIChE Symposium, Minneapolis, February 1988.
36. J.H. Weaver, "Surface Stability, Chemisorption, and Interface Formation of High Temperature Superconductors," Gordon Conference on the Chemistry of Electronic Materials, Ventura, March 1988.
37. J.H. Weaver, "High Temperature Superconductors: Electronic States, Surface Stability, and Interface Formation," American Chemical Society, Minneapolis, April 1988.
38. J.H. Weaver, "The Physics and Chemistry of Interfaces," Keynote lecture, Symposium on Advanced Materials: Science and Applications, The Royal Society of Canada, Windsor, Ontario, Canada, June 1988.
39. J.H. Weaver, "Unoccupied Electronic States," International Centre for Theoretical Physics, Trieste, Italy, June 1988.
40. J.H. Weaver, "Electronic Structure of High Temperature Superconductors," Gordon Conference on Electron Spectroscopy, Brewster Academy, July 1988.
41. J.H. Weaver, "High Temperature Superconductors: Electronic States, Surface Stability, and Interface Formation," American Chemical Society, Los Angeles, September 1988.
42. J.H. Weaver, "Metal-Semiconductor Interfaces," World Materials Congress: Interface Science and Engineering, Chicago, September 1988.
43. J.H. Weaver, "Surface and Interface Properties of Semiconductors and High  $T_c$  Superconductors," Argonne Colloquium on Frontiers of Surface Analysis, Argonne, September 1988.

## Invited Papers:

44. J.H. Weaver, "High Temperature Superconductors: Electronic States, Surface Stability, and Interface Formation," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
45. J.H. Weaver, "Physics and Chemistry of Metal/Semiconductor Interfaces," Symposium on Chemistry and Defects in Semiconductor Heterostructures, Spring Meeting of the Materials Research Society, San Diego, April 1989.
46. J.H. Weaver, "Surfaces and Interfaces of High Temperature Superconductors," 1st Gordon Conference on Superconductivity, Ventura, February 1989.
47. J.H. Weaver, "Photoemission Studies of Surfaces and Interfaces of High  $T_c$  Superconductors," Scanning Electron Microscopy Conference, Salt Lake City, May 1989.
48. J.H. Weaver, "Physics and Chemistry of Metal/Semiconductor Interfaces," American Vacuum Society, Albuquerque, May 1989.
49. J.H. Weaver, "Reactions at Semiconductor Interfaces," Special Seminar Series on Electronic Materials: A New Era of Materials Science, University of Minnesota, Minneapolis, May 1989.
50. J.H. Weaver, C.M. Aldao, G.D. Waddill, and S.G. Anderson, "Temperature Effects for Ti/GaAs(110) Interface Formation Involving Cluster and Atom Deposition," Electronic Materials Conference, Boston, June 1989.
51. J.H. Weaver, "Adatom Interactions on Semiconductor Surfaces," American Vacuum Society, College Station, September 1989.
52. J.H. Weaver, "Physics and Chemistry of Metal/Semiconductor Interfaces," International Conference on Semiconductor and Integrated Circuit Technology, Beijing, October 1989. [Conference canceled]
53. J.H. Weaver, "Temperature-, Dopant-Concentration-, and Coverage-Dependent Schottky Barrier Formation," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
54. J.H. Weaver, NSF Workshop on "Interfaces and Atomic, Molecular, and Surface Physics," Perth, Australia, February 1990. [Unable to attend.]
55. J.H. Weaver, "Metal/Semiconductor Interfaces: Temperature-Dependent Atom and Cluster Deposition," Australian Physical Society, Perth, Australia, February 1990. [Unable to attend.]
56. J.H. Weaver, "Temperature-, Dopant-Concentration-, and Coverage-Dependent Schottky Barrier Formation," 17th Annual Conference on Physics and Chemistry of Semiconductor Interfaces," Clearwater Beach, February 1990.
57. J.H. Weaver, "Temperature-, Dopant-Concentration-, and Coverage-Dependent Schottky Barrier Formation for III-V Semiconductors," Symposium on Metallization for Electronics Applications, Annual Meeting of The Minerals, Metals and Materials Society, Anaheim, February 1990.
58. J.H. Weaver, "Surfaces and Interfaces of High Temperature Superconductors," American Physical Society, Anaheim, March 1990.
59. J.H. Weaver, "Metal/Semiconductor Interfaces: Temperature-Dependent Atom and Cluster Deposition," 8th International Conference on Thin Films, San Diego, April 1990.
60. J.H. Weaver, "Clusters and Cluster-Assembled Interfaces," Materials Research Society, Boston, November 1990.
61. J.H. Weaver, "Photoemission and STM Studies of  $C_{60}$ ," American Vacuum Society, Minneapolis, February 1991.
62. J.H. Weaver, "Surface and Interface Stability of High Temperature Superconductors," Corrosion of Advanced Materials, 1991 NACE Research in Progress Symposium, Cincinnati, March 1991.
63. J.H. Weaver, "Occupied and Empty Electronic States of Solid  $C_{60}$  and the Interaction of  $C_{60}$  with the Environment: Photoemission, Inverse Photoemission, and STM," Special Session on  $C_{60}$ , American Physical Society, Cincinnati, March 1991.
64. J.H. Weaver, "Interface Effects for High Temperature Superconductors," Materials Research Society, Anaheim, April 1991.
65. J.H. Weaver, "Interface Effects for High Temperature Superconductors," 179th Electrochemical Society Meeting, Washington, D.C., May 1991.



**Invited Papers:**

66. J.H. Weaver, Distinguished Lecturer, NSF Workshop on "Thin Film Science and Technology for the 21st Century," Evanston, July/August 1991.
67. J.H. Weaver, "Clusters and Cluster-Assembled Interfaces," Gordon Conference, Brewster Academy, August 1991.
68. J.H. Weaver, "Electronic Structure and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerenes," American Chemical Society Meeting, New York, August 1991.
69. J.H. Weaver, Plenary Lecture, "Electronic Structure and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerenes," European Conference on Surface Science, Stockholm, Sweden, September 1991.
70. J.H. Weaver, "Electronic Structure and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerenes," Midwest Solid State Conference, Ames, September 1991.
71. J.H. Weaver, "Electronic Structure and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerenes," 24th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1991.
72. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," 38th National Symposium of the American Vacuum Society, Seattle, November 1991.
73. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," American Chemical Society, Eau Claire, January 1992.
74. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," Engineering Foundation Conference on Fullerenes, Tucson, January 1992. [Conference canceled.]
75. J.H. Weaver, "Electronic Interactions in Fullerene Materials," International School on Band Structure and Applications, Madras, India, February 1992. [Conference postponed.]
76. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," International Winterschool on Electronic Properties of High Temperature Superconductors, Kirchberg, Tyrol, Austria, March 1992.
77. J.H. Weaver, "Electronic Structures and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerenes," American Physical Society, Indianapolis, March 1992.
78. J.H. Weaver, "Fullerenes and Fullerenes: Photoemission and Scanning Tunneling Microscopy Studies," 94th Annual Meeting and Exposition of the American Ceramic Society, Minneapolis, April 1992.
79. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," 181st Electrochemical Society Meeting, St. Louis, May 1992.
80. J.H. Weaver, "Electronic Structures and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerenes," International Summer Institute for Surface Studies, Milwaukee, June 1992.
81. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," Gordon Conference on Electron Spectroscopy, Wolfeboro, July 1992.
82. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerenes," US/Japan Fermiology Workshop, Sendai, Japan, July 1992.
83. J.H. Weaver, "Clusters and Their Interactions with Surfaces," Sixth International Symposium on Small Particles and Inorganic Clusters, Chicago, September 1992.
84. J.H. Weaver, "Electronic Structures and Properties of Fullerenes and Fullerenes," 1st Nishina Symposium on Nanoscale Science, Sendai, Japan, September 1992.
85. J.H. Weaver, "Electronic Structures and Properties of Fullerenes and Fullerenes," Symposium on the Third Form of Carbon: Fullerenes - Properties and Prospects, Annual Meeting of the TMS, Chicago, November 1992.
86. J.H. Weaver, "Electronic Structure of C<sub>60</sub> Assemblies," International Symposium on Local Order in Condensed Matter Physics, Orissa, India, December 1992. [Unable to attend.]
87. J.H. Weaver, "Electronic Interactions for Fullerene-Based Systems," Euroconference on Superconductivity in Fullerenes, Oxides, and Organic Materials, Pisa, Italy, January 1993.

## Invited Papers:

88. J.H. Weaver, "Fullerene Films: Their Growth and Properties," American Association for the Advancement of Science, Boston, February 1993.
89. J.H. Weaver, "Structural and Electronic Properties of Fullerenes and Fullerides: STM and Photoemission," International Winterschool on Electronic Properties of Novel Materials: Fullerenes and Related Compounds," Kirchberg, Austria, March 1993.
90. J.H. Weaver, "Chemical Bonding and Electronic Structure of Fullerene-Based Compounds," Symposium on Chemistry and Physics of Fullerenes, American Chemical Society, Denver, March 1993.
91. J.H. Weaver, "Fullerene Films and Their Compounds: Growth Morphologies, Electronic Properties, and Superconductivity," After Dinner Lecturer, American Chemical Society, Duluth, April 1993.
92. J.H. Weaver, "Electronic Structures and Properties of Fullerenes and Fullerides," Spring Meeting of the Materials Research Society, San Francisco, April 1993. [Unable to attend.]
93. J.H. Weaver, "Electronic Structures and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerides," Symposium on Fullerenes, International Centre of Condensed Matter Physics, Brasilia, Brazil, April 1993. [A series of four lectures.]
94. J.H. Weaver, "Electronic Properties of the Alkali and Alkaline Earth Fullerides: Successes and Limitations of Band Calculations," Sixth SCF Users Group Meeting: Computed Properties of Carbon-Based Materials, Namur, Belgium, May 1993.
95. J.H. Weaver, "Electronic Structures and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerides," Tennessee Valley Chapter American Vacuum Society, Oak Ridge, June 1993.
96. J.H. Weaver, "Physics of Fullerenes," Fullerenes '93 Symposium, Santa Barbara, June 1993.
97. J.H. Weaver, "Electronic Structures and Properties of Fullerenes and Fullerides," US-Japan Workshop on Fullerenes, Honolulu, July 1993.
98. J.H. Weaver, "Electronic Structures and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerides," Illinois Chapter of the American Vacuum Society, Chicago, September 1993.
99. J.H. Weaver, "Electronic Structures and Properties of Fullerenes and Fullerides," International Workshop on Fullerenes, St. Petersburg, October 1993. [Unable to attend.]
100. J.H. Weaver, Plenary Lecture on "Physics and Chemistry of Fullerene Films," Japanese Physical Society, Okayama, October 1993.
101. J.H. Weaver, "Photoelectron Spectroscopy of Fullerenes," Japanese Physical Society, Okayama, October 1993.
102. J.H. Weaver, "Electronic Structures and Properties of Fullerenes and Fullerides," 184th Meeting of the Electrochemical Society," New Orleans, October 1993. [Unable to attend.]
103. J.H. Weaver, Plenary Lecture on "Electronic Structures and Properties of Fullerenes and Fullerides," XXVI Congreso Nacional de Fisica, Acapulco, October 1993.
104. J.H. Weaver, "Physics of Fullerenes," First International Conference on the Physics of Low Dimensional Structures, Moscow, December 1993. [Unable to attend.]
105. J.H. Weaver, "Chemistry and Physics of Fullerenes and Fullerides," 2nd Nishina Symposium on Nanoscale Science, Sendai, Japan, January 1994.
106. J.H. Weaver, "Fullerene Research in the U.S.A.," Japanese Society for the Promotion of Science, Tokyo, January 1994.
107. J.H. Weaver, "K<sub>x</sub>-C<sub>70</sub>: Stable Phases and Electronic Structures," Workshop on Fullerenes, Yuya-Onsen, Japan, February 1994.
108. J.H. Weaver, Plenary Lecture on "Semiconductor Etching with Halogens," Korean Vacuum Society, Seoul, February 1994.
109. J.H. Weaver, "STM Investigations of Patterning of Si," First Asian Workshop on Scanning Tunneling Microscopy, Japan, February 1994.

## Invited Papers:

110. J.H. Weaver, "Electronic Structure of La@C<sub>82</sub> and C<sub>82</sub>: Photoemission Investigations," International Winterschool on Electronic Properties of Novel Materials: Progress in Fullerene Research," Kirchberg, Austria, March 1994.
111. D.M. Poirier and J.H. Weaver, "Alkali-Fulleride Phase Diagrams and Distillation Studied with X-ray Photoemission Spectroscopy," International Winterschool on Electronic Properties of Novel Materials: Progress in Fullerene Research," Kirchberg, Austria, March 1994.
112. J.H. Weaver, "Fulleride Metallicity," International Winterschool on Electronic Properties of Novel Materials: Progress in Fullerene Research," Kirchberg, Austria, March 1994.
113. J.H. Weaver, "Angle-Resolved Photoemission Spectroscopy Studies of C<sub>60</sub>(111): Implications for Band Theory and Superconductivity," Euroconference on the Physics and Chemistry of Unconventional Superconducting Materials," Pisa, May 1994.
114. J.H. Weaver, "Physics and Chemistry of Fullerenes," Symposium on Fullerenes: Chemistry, Physics, and New Directions VI, 185th Meeting of the Electrochemical Society, San Francisco, May 1994. [Unable to attend.]
115. J.H. Weaver, "Physics and Chemistry of Fullerenes," International Conference on Science and Technology of Synthetic Metals, Seoul, July 1994. [Unable to attend.]
116. J.H. Weaver, "Physics and Chemistry of Fullerenes and Fullerides," Summer School for Spanish Students, El Escorial, Madrid, August 1994. [Two lectures.]
117. J.H. Weaver, "Surface Etching of Semiconductors," Pacific Northwest Chapter American Vacuum Society, Portland, September 1994.
118. J.H. Weaver, Plenary Lecture on "Physics and Chemistry of Fullerenes," 8th Congreso Latinoamericano de Ciencias de Superficies y sus Aplicaciones, Cancun, September 1994.
119. J.H. Weaver, "Semiconductor Etching with Halogens: Scanning Tunneling Microscopy Investigations," 41st National Symposium of the American Vacuum Society, Denver, October 1994.
120. J.H. Weaver, "Photoelectron Spectroscopy and STM of Etched Semiconductor Surfaces," Gordon Research Conference on Excitations at Semiconductor Surfaces -- Fundamental Concepts and Application to Semiconductor Processing, Oahu, November 1994.
121. J.H. Weaver, Plenary Lecture on "Fullerenes, Fullerides, Endofullerenes, and Tubes," Fall Meeting of the Materials Research Society, Boston, December 1994.
122. J.H. Weaver, "Spectroscopic Investigations of Fullerenes and Fullerides: What Can One Learn?," Fall Meeting of the Materials Research Society, Boston, December 1994.
123. J.H. Weaver, "Semiconductor Etching with Halogens: STM Imaging of Atomic Scale Processes," 23rd Annual Symposium on Applied Vacuum Science & Technology, Clearwater Beach, February 1995.
124. J.H. Weaver, "STM Characterization of Surface Processing: Semiconductor Etching," Microphysics of Surfaces, Santa Fe, February 1995.
125. J.H. Weaver, "Equilibrium and Nonequilibrium  $x = 1$  Phases: An Overview," International Winterschool on Electronic Properties of Novel Materials: Fullerides and Fulleroides," Kirchberg, Austria, March 1995.
126. D.M. Poirier and J.H. Weaver, "Spectroscopic Investigations of Fullerenes and Fullerides," Spring Meeting of the Electrochemical Society, Reno, May 1995.
127. J.H. Weaver, "Semiconductor Etching with Halogens: Scanning Tunneling Microscopy Investigations," Symposium on Microscopies and Imaging, American Chemical Society, Anaheim, April 1995. [Unable to attend.]
128. J.H. Weaver, "Electronic Properties of Fullerenes and Fullerides," The Chemical Physics of Fullerenes 10(5) Years Later, Verenna Italy, June 1995.
129. J.H. Weaver, Plenary Lecture on "Physics and Chemistry of Fullerenes and Fullerides," Second International Workshop on Fullerenes and Atomic Clusters, St. Petersburg, June 1995.
130. J.H. Weaver, International Conference on Surface Science: Critical Review and Outlook, Hong Kong, June 1995. [Unable to attend.]

**Invited Papers:**

131. J.H. Weaver, "Physics and Chemistry of Fullerenes and Fullerides," Fullerenes and Photonics II, International Symposium on Optical Science, Engineering, and Instrumentation, San Diego, July 1995. [Unable to attend.]
132. J.H. Weaver, "Semiconductor Etching with Halogens: STM Imaging of Atomic Scale Processes," Gordon Research Conference on Dynamics at Surfaces, Andover, New Hampshire, August 1995.
133. J.H. Weaver, "Fullerenes: What Are They and How Can They be Used?," Medtronic Research Dinner, Minneapolis, August 1995.
134. J.H. Weaver, "Expanded Horizons in Fullerene Science and Technology," IV International Conference on Advanced Materials, Cancun, August 1995.
135. J.H. Weaver, "Electronic Structure of Fullerides from Photoemission and Inverse Photoemission," 11th International Conference on Vacuum Ultraviolet Radiation Physics, Tokyo, August 1995.
136. J.H. Weaver, "Semiconductor Etching: An Atomic Scale Perspective of Surface Processes," Royal Society Kan Tong Po Lectureship, University of Hong Kong, September 1995.
137. J.H. Weaver, "Fullerenes, Nanotubes, and Onions," Royal Society Kan Tong Po Lectureship, University of Hong Kong, September 1995.
138. J.H. Weaver, "Atomic Structure and Evolution of Semiconductor Surfaces during Etching," 3rd International Symposium on Atomically Controlled Surfaces and Interfaces, Raleigh, North Carolina, October 1995.
139. J.H. Weaver, "Semiconductor Etching with Halogens: STM Imaging of Atomic Scale Processes," 3rd International Colloquium on Scanning Tunneling Microscopy, Kanazawa, Japan, December 1995. [Unable to attend.]
140. J.H. Weaver, "Fullerenes: The New Soccer Ball Molecules," Presentation to the Wayzata School District's Young Scientist Roundtable, Wayzata, Minnesota, February 1996.
141. J.H. Weaver, "Halogen Etching of Semiconductor Surfaces: STM Investigations of Atomic Scale Processes," Brazilian Vacuum Congress, Belo Horizonte, Brazil, July 1996.
142. J.H. Weaver, "Etching of Semiconductors: What Happens after Chemisorption as Studied with STM," 3rd European Conference on Gas-Surface Dynamics and 2nd European Conference on Lasers in Surface Science, Kerkrade, The Netherlands, September 1996.
143. J.H. Weaver, "Interaction of Halogens with Si," 18th Dry Process Symposium, Tokyo, Japan, November 1996.
144. J.H. Weaver, "Etching Investigations on an Atomic Level: Br-GaAs(110)," 1996 Fall Meeting of the Materials Research Meeting, Boston, December 1996.
145. J.H. Weaver, "Electronic and Structural Properties of Fullerenes: A Perspective," Seventh Namur Scientific Computing Facility Workshop, Namur, Belgium, January 1997.
146. J.H. Weaver, "Highlights of Surface Science," 7th Joint Vacuum Conference of Hungary, Austria, Croatia, and Slovenia, Debrecen, Hungary, May 1997.
147. J.H. Weaver, "STM Visualization of Halogen Etching of GaAs(110)," 19th IUVESTA Workshop on Surface Chemistry on the Nanoscopic Scale, Oegstgeest, The Netherlands, September 1997.
148. J.H. Weaver, "Halogen Etching of Semiconductor Surfaces: STM Investigations of Atomic Scale Processes," 4th International Symposium on Atomically Controlled Surfaces and Interfaces, Tokyo, Japan, October 1997.
149. J.H. Weaver, "Semiconductor Etching with Halogens: STM Imaging of Atomic Scale Processes," 5th Chemical Congress of North America, Cancun, Mexico, November 1997. [Unable to attend.]
150. J.H. Weaver, "Semiconductor Etching with Halogens: STM Imaging of Atomic Scale Processes," 18th IUVESTA Workshop on Diffusion and Growth in Ultrathin Layers, Newcastle, Australia, November 1997.
151. J.H. Weaver, "Visualization of Semiconductor Surface Etching with Scanning Tunneling Microscopy," Plenary Presentation, 4th Congress of the Vacuum Society of Australia, Canberra, November 1997.
152. J.H. Weaver, "Visualization of Semiconductor Surface Etching with Scanning Tunneling Microscopy," March Meeting of the American Physical Society, Los Angeles, March 1998.

**Invited Papers:**

153. J.H. Weaver, "Etching and Other Treatments of Semiconductor Surfaces," Three Lectures at the 3rd International School on the Applications of Surface Science Techniques, Erice, Trapani, Italy, April 1998.
154. J.H. Weaver, "Atomic Processes at Surfaces," Plenary Lecture, International Conference on Metallurgical Coatings and Thin Films '98, San Diego, April 1998.
155. J.H. Weaver, "Surface Engineering of Semiconductors," Feature Presentation at the ARO 6-1 Program Review, Research Triangle Park, May 1998.
156. J.H. Weaver, "Visualization of Silicon Etching using STM," Iowa State University Distinguished Alumni Award Presentation, Ames, Iowa, October 1998.
157. J.H. Weaver, "Buffer-Layer-Assembled Nanostructures and their Interactions with Surfaces," Joint Midwest Solid State Conference and Solid State Theory Conference, Ames, Iowa, October 1998.
158. J.H. Weaver, "Semiconductor Surfaces and their Modifications," Keynote Lecture, LINK Surface Engineering Conference, Manchester, England, November 1998.
159. J.H. Weaver, "Nanostructures on Si: Synthesis, Integration, and Manipulation," The 1st Harima International Forum and Conference on the Frontiers of Surface Science, Harima Science Garden City, Japan, December 1998.
160. J.H. Weaver, "Nanostructures on Silicon: Synthesis, Integration, and Manipulation," 26th Conference on the Physics and Chemistry of Semiconductor Interfaces, La Jolla, January 1999. [Unable to attend.]
161. J.H. Weaver, "Challenges in Materials Science," National Science Talent Search Award Ceremony, Singapore, April 1999.
162. J.H. Weaver, "Atomic Processes at Surfaces: Visualization with Scanning Tunneling Microscopy," 12th Kongsberg Seminar, Kongsberg, Norway, May 1999.
163. J.H. Weaver, Plenary Lecture on the Uses of Photoemission, Workshop on Optical and Electron Spectroscopies, Mexico City, June 1999. [Unable to attend.]
164. J.H. Weaver, "Nanostructures and their Interactions," Fifth International Conference on Advanced Materials, International Union of Materials Research Societies, Beijing, June 1999. [Unable to attend.]
165. J.H. Weaver, "The Formation of Nanoclusters and their Interaction with Surfaces," Gordon Conference on Dynamics at Surfaces, Andover, New Hampshire, August 1999.
166. J.H. Weaver, "Semiconductor Surface Modification with Electrons and Photons, Viewed with Scanning Tunneling Microscopy," European Conference on Surface Science-18, Vienna, Austria, September 1999.
167. J.H. Weaver, "Halogen Etching of Si with Emphasis on Atomic-Scale Processes," 46th International Symposium of the American Vacuum Society, Seattle, October 1999 [Medard W. Welch Award Presentation].
168. J.H. Weaver, "Atomic Processes at Surfaces," Okazaki International Conference on Advantages of Utilization of Synchrotron Radiation in Nano-structure Creation, Okazaki, Japan, January 2000.
169. J.H. Weaver, "Halogen Etching of Si with Emphasis on Atomic-Scale Processes," 4th Symposium on Atomic-Scale Surface and Interface Dynamics, Tsukuba, Japan, March 2000.
170. J.H. Weaver, "Visualization of Surface Processes," 19<sup>th</sup> Winchell Memorial Lecture, Purdue University, April 2000.
171. J.H. Weaver, "Three Dimensional Nanostructures and Their Interactions," International Symposium on Nanoscale Science and Technology, Tel Aviv, May 2000.
172. J.H. Weaver, "Surface Modifications by Etchants, Low Energy Electrons, and Photons," Plenary Talk, Tenth International Conference on Solid Films and Surfaces, Princeton, NJ, July 2000.
173. J.H. Weaver, "Nanostructures and Their Interactions," The International Union of Materials Research Societies 6th International Conference in Asia, Hong Kong, July 2000.
174. J.H. Weaver, "The Formation, Characterization, and Integration of Nanostructures: Ag and Si," EURESCO Conference on Fundamentals of Surface Science, Tuscany, October 2000.

**Invited Papers:**

175. J.H. Weaver, "The Formation, Characterization, and Integration of Nanostructures: Ag and Si," Midwest Solid State Conference, Grand Forks, North Dakota, October 2000.
176. J.H. Weaver, US-European Workshop on Materials Aspects of Nanoscale Science and Technology, Toulouse, France, October 2000.
177. J.H. Weaver, A series of three lectures on "Experimental Studies of Nanostructuring and Etching of Semiconductor Surfaces: Atomic Manipulation and Characterization using Scanning Tunneling Microscopy," 26th International Nathiagali Summer College on Physics and Contemporary Needs, Pakistan, July 2001.
178. J.H. Weaver, "Nanostructure Formation, Integration, and Stability," European Conference on Surface Science-20, Krakow, Poland, September 2001.
179. J.H. Weaver, "The Evolution of Materials Science," Davis Fest, University of Minnesota, Minneapolis, June 2002.
180. J.H. Weaver, "Pattern Evolution During Material Removal: Semiconductors," IUVSTA Workshop on Pattern Formation in Epitaxial Growth and Erosion, Trofaiach, Austria, June 2002.
181. J.H. Weaver, "Nanoscale Engineering," 22nd Werner Brandt Workshop, Particle and Wave Penetration in Condensed Matter, Namur, Belgium, June 2002.
182. J.H. Weaver, "Nanoscale Formation, Integration, and Stability," Nano and Giga Challenges in Microelectronics, Moscow, Russia, September 2002. [Unable to attend.]
183. J.H. Weaver, "Science at the Nanometer Scale," Plenary talk at the Mexican Vacuum Society, Veracruz, Mexico, October 2002. [Unable to attend.]
184. J.H. Weaver, "Three Dimensional Nanoengineered Assemblies," Materials Research Society Meeting, Boston, November 2002.
185. J.H. Weaver, "Buffer-Layer-Assisted Growth," Workshop on Multiscale Studies of Formation and Stability of Surface-based Nanostructures, Emory University, Atlanta, January 2003.
186. J.H. Weaver, "Three Dimensional Nanoengineered Assemblies," Kodak Distinguished Lecture in Materials Science and Engineering, Rensselaer Polytechnic Institute, February 2003.
187. J.H. Weaver, "Buffer-Layer-Assisted Growth and the Formation of Nanostructures of (Almost) Anything on Anything," AVS Distinguished Lecture, Michigan Chapter, Ann Arbor, May 2003.
188. J.H. Weaver, "Dynamics of High Temperature Etching of Silicon: Direct Imaging with STM," Plenary Lecture, 25<sup>th</sup> Annual Symposium on Applied Surface Analysis, Urbana, June 2003.
189. J.H. Weaver, "Processing of Semiconductors," Plenary Lecture, XX International Symposium on Molecular Beams, Lisbon, Portugal, June 2003. [Unable to attend.]
190. J.H. Weaver, "Roughening, Etching, and Surface Patterning of Si," Gordon Conference on the Chemistry of Electronic Materials, Connecticut College, July 2003
191. J.H. Weaver, "Nanoscale Surface Engineering," Thirteenth International School on Vacuum, Electron, and Ion Technologies, Varna, Bulgaria, September 2003.
192. J.H. Weaver, "Etching, Roughening, and Patterning of Si with Halogens," 7<sup>th</sup> International Conference on Atomically Controlled Surfaces, Interfaces, and Nanostructures, Nara, Japan, November 2003.
193. J.H. Weaver, "Buffer-Layer-Assisted Growth and the Formation of Nanostructures of (Almost) Anything on Anything," AVS Distinguished Lecture, AVS New Mexico Chapter, Albuquerque, May 2004.
194. J.H. Weaver, "Buffer-Layer-Assisted Growth and the Formation of Nanostructures of (Almost) Anything on Anything," AVS Distinguished Lecture, AVS New England Chapter, Boston, May 2004. [Unable to attend.]
195. J.H. Weaver, V.N. Antonov, J.S. Palmer, and A.S. Bhatti, "Nanoparticle Diffusion and Aggregation on Desorbing Rare Gas Solids: Slip on an Incommensurate Lattice," IVC-16/ICSS-12/NANO-8/AIV-17, Venice, June 2004.
196. J.H. Weaver, "Buffer-Layer-Assisted Growth and the Formation of Nanostructures of (Almost) Anything on Anything," International Surface and Interface Science Workshop and ShapiraFest, Tel Aviv, October 2004.

**Invited Papers:**

197. J.H. Weaver, short course of five lectures on nanoscience and technology, COMSATS-IIT, Islamabad, Pakistan, January 2005.
198. J.H. Weaver, "Nanoscience and the Synthesis and Characterization of Nanometer Structures," Plenary lecture, Pakistan Physical Society Meeting, Lahore, Pakistan, January 2005.
199. J.H. Weaver, "Surprises on Surfaces: Halogens and What They Can Do on Si(100)," American Chemical Society, San Diego, March 2005.
200. J.H. Weaver, three lectures on nanoscience and surface patterning, 30<sup>th</sup> International Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, July 2005.
201. B.R. Trenhaile, V.N. Antonov, and J.H. Weaver, "Phonon-Activated Electron-Stimulated Desorption of Halogens from Si(100)-(2x1)," Gordon Conference on Dynamics as Surfaces, Proctor Academy, NH, August 2005.
202. J.H. Weaver, "Synthesis and Characterization of Metallic and Semiconductor Nanoparticles on Surfaces," AVS Prairie Chapter Meeting, Naperville, June 2006.
203. J.H. Weaver, Dynamics and Reactivity of Individual Molecules/Clusters, ACS Fall Meeting, San Francisco, September 2006. [Unable to attend.]
204. J.H. Weaver, IVUSTA Special Symposium, Seoul, Korea, September 2006. [Unable to attend.]
205. J.H. Weaver, two lectures on Surface Science and Nanoscience, International School on Surfaces, Thin Films, Nanostructures, and Applications, Lahore, Pakistan, October 2006.
206. J.H. Weaver, "Introduction to Surface Science and Nanoscience," recorded by the Virtual University of Pakistan for broadcast in the Islamic world, Lahore, October 2006.
207. J.H. Weaver, "Buffer Layer Assisted Growth as a Way to Produce Novel Nanoparticles," Symposium on Surfaces, Thin Films, Nanostructures, and Applications, Islamabad, Pakistan, November 2006.
208. J.H. Weaver, "Halogens and Their Interactions with Si(100): There Is Much More Than You Might Have Expected," 13th International Conference on Solid Films and Surfaces, Bariloche Patagonia, Argentina, November 2006 (unable to attend).
209. J.H. Weaver, "Nanoscience, An Overview," International Symposium on Contemporary Physics, National Center for Physics, Islamabad, Pakistan, March 2007 (unable to attend).
210. J.H. Weaver, "Buffer Layer Assisted Growth and Solid State Dewetting-mediated Aggregation of Nanoparticles," International Conference on Clusters at Surfaces, Warnemunde, Germany, May 2008.
211. J.H. Weaver, "Buffer Layer Assisted Growth and Solid State Dewetting-mediated Aggregation of Nanoparticles," Pacific Northwest Chapter of the AVS, September 2008.
212. J.H. Weaver, "Surface Patterning for Semiconductors," International Symposium on Advanced Materials, Islamabad, Pakistan, August 2009 (unable to attend).
213. J.H. Weaver, "Optical Properties of Metals: Reflections and Reflectances," 2009 SRC Users Meeting, Stoughton, Wisconsin, October 2009.

**Miscellaneous:**

1. D.W. Lynch, C.G. Olson, and J.H. Weaver, "Optical Properties of bcc and hcp Transition Metals," Proceedings IV International Conference on Vacuum Ultraviolet Radiation Physics (Pergamon Press, 469 (1975)).
2. J.H. Weaver, Editor, "Synchrotron Radiation Center Users' Handbook."
3. J.H. Weaver and C.G. Olson, "Soft X-Ray Absorption Studies of Thorium 5d-5f Structure in Thorium and Thorium Compounds," V International Conference on Vacuum Ultraviolet Radiation Physics.
4. J.H. Weaver, "Optical and Photoelectron Spectroscopies of Metal Hydrides," Press release of the American Institute of Physics, March 28, 1978.
5. P.A. Snyder, E.M. Rowe, and J.H. Weaver, "The First Use of Synchrotron Radiation for Vacuum Ultraviolet Circular Dichroism Studies," NATO Conference on Circular Dichroism, September 1978.
6. J.H. Weaver, "Photons as a Probe of Hydrogen in Metals: Photoelectron and Optical Studies," Analysis of Hydrogen in Solids Workshop, Sandia Laboratories, January 1979, USDOE Report ER-0026, edited by R.L. Schwoebel and J.L. Warren, pp. 20-31.
7. J.H. Weaver and D.T. Peterson, "Photoelectron Spectroscopy Studies of Metal Dihydrides," Proceedings of the International Conference on Hydrogen in Metals, Münster, Germany.
8. J.H. Weaver, review of "Electron Spectroscopy of Crystals," by V.V. Nemoshkalenko and V.G. Aleshin (Plenum, 1979) *American Scientist* 68, 316 (1980).
9. D.W. Lynch, C.G. Olson, D.J. Peterman, and J.H. Weaver, "Optical Properties of  $TiC_x$  ( $0.64 \leq x \leq 0.90$ ) from 0.1 to 30 eV," Basic Optical Properties of Solids, NBS, May, 1980.
10. W. Gudat, M. Campagna, W. Eberhardt, R. Rosei, J.H. Weaver, Y. Petroff, and F. Hulliger, "Resonant Photoemission from 4f States of Rare-Earth Metals and Compounds," Deutsche Physikalische Gesellschaft, Fredenstadt, Germany, March 1980.
11. M. Croft, J.H. Weaver, A. Franciosi, D.J. Peterman, and A. Jayaraman, "4f Level Energy, Width, and Volume Coupling in Ce Compounds," Santa Barbara Conference on Mixed Valent Systems, February, 1981.
12. A. Franciosi and J.H. Weaver, "Ionic Contribution to Silicon-Metal Bonding: Si(111)-Ca Interface Reactions," Conference Proceedings, 17th International Conference on the Physics of Semiconductors, San Francisco, Springer-Verlag, pp. 163-165 (1985).
13. F. Boscherini, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "High Resolution Core Level Study of the Co/Si(111) Interface," Materials Research Society Symposium Proceedings (1987).
14. S.A. Chambers, M. del Giudice, D.M. Hill, F. Xu, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "Silicide Formation at the Ti/Si Interface," *J. Vac. Sci. Technol. A* 5, 1508-1509 (1987).
15. S.A. Chambers, F. Boscherini, S.B. Anderson, J.J. Joyce, H.-W. Chen, M.W. Ruckman, and J.H. Weaver, "Reaction and Epitaxy at the Co/Si(111) Interface," *J. Vac. Sci. Technol. A* 5, 2142 (1987).
16. I. Vitomirov, F. Xu, C. Aldao, and J.H. Weaver, "Direct Evidence of the Onset of In Surface Segregation for Co/InP(110)," *J. Vac. Sci. Technol. A* 6, 1563-1564 (1988).
17. C. Aldao, I. Vitomirov, and J.H. Weaver, "CoSi<sub>2</sub> Diffusion Barrier Modulation of the Au/Si(111) Interface Reactions," *J. Vac. Sci. Technol. A* 6, 1609-1610 (1988).
18. D.M. Hill, F. Xu, Zhangda Lin, and J.H. Weaver, "XPS Measurement of Kinetic Parameters in the Ge/Si(111)-(7x7) Heterojunction at Elevated Temperatures," *J. Vac. Sci. Technol. A* 6, 1350-1351 (1988).
19. H.M. Meyer III, S.G. Anderson, Lj. Atanasoska, and J.H. Weaver, "X-Ray Photoemission Investigations of Electron Injection and Trapping at the Gold/Polyimide Interface," *J. Vac. Sci. Technol. A* 6, 1002-1004 (1988).
20. S.A. Chambers, H.-W. Chen, T.J. Wagener, and J.H. Weaver, "Nucleation and Growth of Ultra-Thin Metallic Overlayers on Single-Crystal Transition Metal Surfaces," *J. Vac. Sci. Technol. A* 6, 2142-2143 (1988).



**Miscellaneous:**

21. A. Franciosi, A. Wall, Y. Gao, J.H. Weaver, S. Chang, A. Raisanen, and B. Reihl "Electronic Structure of Ternary Semimagnetic Semiconductors: Where Have All the d-States Gone?," Proceedings of the 19th International Conference on the Physics of Semiconductors, edited by W. Sawadzki and J.M. Langer (DHN Ltd., Warsaw, Poland) 1988.
22. J.H. Weaver, review of *Studies of the Surfaces of Solids by Electron Spectroscopy: Recent Trends*, edited by Ronald Mason, N. Sheppard, M.W. Roberts, and J.M. Thomas (University Press, Cambridge, 1986) *J. Am. Chem. Soc.* **8**, 3110 (1989).
23. G.D. Waddill, I.M. Vitomirov, C.M. Aldao, S.G. Anderson, C. Capasso, and J.H. Weaver, "Metal-Semiconductor Interfaces with Novel Structural and Electronic Properties: Metal Cluster Deposition," in *Chemistry and Defects in Semiconductor Heterostructures*, Proceedings of the 1989 Spring Meeting of the Materials Research Society, Vol. 148, edited by M. Kawabe, E.R. Weber, T.D. Sands, and R.S. Williams.
24. G.D. Waddill, T.R. Ohno, and J.H. Weaver, "Clusters and Cluster Assembly of Interfaces," Proceedings of the 1990 Fall Meeting of the Materials Research Society.
25. D.M. Poirier, C.G. Olson, and J.H. Weaver, "Alkali-Metal Fulleride Phase Diagrams, Distillation, and Electronic Structure," Proceedings of the 1995 Spring Meeting of the Electrochemical Society.

**Seminars & Colloquia:**

1. J.H. Weaver, "Optical Properties of Some Transition Metals," Istituto G. Marconi, University of Rome, Italy, July 1974.
2. J.H. Weaver, "Optical Properties of the Transition Metals," University of Wisconsin, Solid State Physics, Madison, January 1975.
3. J.H. Weaver, "Optical Properties of Transition Metals in the Vacuum Ultraviolet," Laboratori Nazionali di Frascati, Italy, September 1977.
4. J.H. Weaver, "Optical Properties and Electronic Structure of Transition Metal Hydrides," Istituto di Fisica, Università di Roma, Rome, Italy, September 1977.
5. J.H. Weaver, "Synchrotron Radiation and Its Application to Spectroscopy," European Institute for Transuranium Elements, EURATOM, Karlsruhe, Germany, September 1977.
6. J.H. Weaver, "Optical and Electronic Properties of Transition Metal Hydrides," Solid State Physics, Iowa State University, Ames, November 1977.
7. J.H. Weaver, "Optical Properties and Electronic Structure of Metal Hydrides," Argonne National Laboratory, Argonne, January 1978.
8. J.H. Weaver, "Hydrogen in Metals and Hydrogen Storage," Northern Illinois University, DeKalb, February 1978.
9. J.H. Weaver, "Optical Properties and Electronic Structure of Metal Hydrides," University of Illinois, Urbana, February 1978.
10. J.H. Weaver, "Optical Properties and Electronic Structure of Metal Hydrides," Ford Research Labs, Physics Department, Detroit, March 1978.
11. J.H. Weaver, "Electronic Structure of Metal Hydrides," University of Wisconsin, Madison, Wisconsin, April 1978.
12. J.H. Weaver, "Hydrogen in Metals: Electronic Structure," Sandia Laboratories, Albuquerque, January 1979.
13. J.H. Weaver, "Electronic Structure of Metal Hydrides," Sandia-Livermore, February 1979.
14. J.H. Weaver, "Spectroscopies of Metal Hydrides," KFA-Jülich, Germany, March 1979.
15. J.H. Weaver, "Electronic Studies of H-in-Metals," Laboratori Nazionali di Frascati, Frascati, Italy, March 1979.
16. J.H. Weaver, "Metal Hydrides," Soreq Nuclear Research Institute, Yavne, Israel, June 1979.
17. J.H. Weaver, "Solid State Photoelectron Spectroscopy," University of Missouri, November 1979.
18. J.H. Weaver, "Hydrogen in Solids," Materials Science Seminar, University of Wisconsin-Madison, December 1979.
19. J.H. Weaver, "Electronic Properties of Metal Hydrides," Department of Physics, Northwestern University, Evanston, May 1981.
20. J.H. Weaver, "Metal-Hydrogen Interactions in Solids," Materials Science Department, State University of New York at Stony Brook, November 1981.
21. J.H. Weaver, "Electronic Structure of Metal Hydrides," Department of Physics, Brookhaven National Laboratory, Long Island, November 1981.
22. J.H. Weaver, "Electronic Structure of Metal Hydrides," Exxon, Linden, November 1981.
23. J.H. Weaver, "The Applications of Synchrotron Radiation in Modern Science," Physics Department, Northeastern University, Boston, November 1981.
24. J.H. Weaver, "Metal-Hydrogen Interactions in Solids," MIT, November 1981.
25. J.H. Weaver, "Synchrotron Radiation and Materials Science," Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, January 1982.
26. J.H. Weaver, "Synchrotron Radiation Photoemission Studies of Hydrides," Department of Physics, University of Texas, Dallas, February 1982.

**Seminars & Colloquia:**

27. J.H. Weaver, "Electronic Properties of Metal-Silicon Interfaces and Bulk Metal Silicides," IBM T.J. Watson Research Center, Yorktown Heights, July 1982.
28. J.H. Weaver, "Photoelectron Spectroscopy Studies of Interfaces: Metal-Silicon and Metal-Metal," Laboratory for Surface Studies, University of Wisconsin, Milwaukee, October 1982.
29. J.H. Weaver, "Synchrotron Radiation - An Overview," and "Metal-Semiconductor and Metal-Metal Interface Phenomena," Department of Physics, University of Minnesota, Minneapolis, January 1983.
30. J.H. Weaver, "Synchrotron Radiation Photoemission Studies of Metal-Semiconductor Interfaces," IBM, Rochester, February 1983.
31. J.H. Weaver, "Metal Silicides and Metal-Silicon Interfaces: Electronic Structure Studies and Surface Morphology," University of Pittsburgh, Pittsburgh, April 1983.
32. J.H. Weaver, "Metal Silicides and Metal-Silicon Interfaces: Electronic Structure Studies and Surface Morphology," GM Research Laboratories, Warren, May 1983.
33. J.H. Weaver, "Science at the Wisconsin Synchrotron Radiation Center," NSF Site Visit, University of Wisconsin Synchrotron Radiation Center, Stoughton, June 1983.
34. J.H. Weaver, "Metal Overlayers on Semiconductors," Department of Physics, Iowa State University, Ames, February 1984.
35. J.H. Weaver, "Reactions at Metal Semiconductor Surfaces," ONR Workshop on Surface Science, Santa Barbara, April 1984.
36. J.H. Weaver, "Reaction at Metal Semiconductor Interfaces," MEIS III-V Seminar, Minneapolis, May 1984.
37. J.H. Weaver, "Metal Semiconductor Interfaces," NSF Site Visit, University of Wisconsin, Synchrotron Radiation Center, June 1984.
38. J.H. Weaver, "Metal/Semiconductor Interfaces," Research Frontiers Lecture, Honeywell Corporate Technology Center, Minneapolis, September 1984.
39. J.H. Weaver, "Experimental Studies and Modeling of Thin Film Interface Reactions," 3M, Minneapolis, November 1984.
40. J.H. Weaver, "Modeling Metal/Semiconductor Interfaces with Synchrotron Radiation Photoemission," IBM T.J. Watson Research Center, Yorktown Heights, May 1985.
41. J.H. Weaver, "Metal/Semiconductor Interface Formation," Physics Department, University of Hawaii, Honolulu, December 1985.
42. J.H. Weaver, "Metal/Semiconductor Interface Formation," Microelectronic and Information Sciences Center, University of Minnesota, Minneapolis, February 1986.
43. J.H. Weaver, "Reactions at Metal/Semiconductor Interfaces," Department of Chemistry, University of Minnesota, Minneapolis, March 1986.
44. J.H. Weaver, "Reactions at Metal/Semiconductor Interfaces," 3M Seminar, St. Paul, May 1986.
45. J.H. Weaver, "Reactions at Metal/Semiconductor Interfaces," Department of Electrical Engineering, University of Minnesota, Minneapolis, March 1987.
46. J.H. Weaver, "Physics and Chemistry of Interfaces," University of Washington, Seattle, May 1988.
47. J.H. Weaver, "Physics and Chemistry of Interfaces," Battelle Pacific Northwest Laboratory, Richland, May 1988.
48. J.H. Weaver, "Metal/Semiconductor Interface Formation," Electronics Technology and Devices Laboratory, Fort Monmouth, May 1988.
49. J.H. Weaver, "Interface Phenomena," Lawrence Livermore Laboratory, Livermore, August 1988.
50. J.H. Weaver, "Surfaces and Interfaces of High Temperature Superconductors," National Institute of Standards and Technology, Gaithersburg, February 1989.

## Seminars &amp; Colloquia:

51. J.H. Weaver, "Metal/Semiconductor Interfaces: Temperature-Dependent Atom and Cluster Deposition," Battelle Pacific Northwest Laboratories, Richland, August 1989.
52. J.H. Weaver, "Metal/Semiconductor Interfaces: Temperature-Dependent Atom and Cluster Deposition," American Vacuum Society, College Station, September 1989.
53. J.H. Weaver, "Surfaces and Interfaces of High  $T_c$  Superconductors," Physics Department, Texas A&M University, College Station, September 1989.
54. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerides," Oak Ridge National Laboratory, Oak Ridge, October 1991.
55. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerides," Princeton University, Princeton, December 1991.
56. J.H. Weaver, "Electronic Structures and Growth Structures of Fullerenes and Fullerides," Honeywell Corporation, Minneapolis, January 1992.
57. J.H. Weaver, "Electronic Structures and Properties of  $C_{60}$ ,  $C_{70}$ , and Alkali-Metal Fullerides," Naval Research Laboratory, Washington, DC, April 1992.
58. J.H. Weaver, "Electronic Structures and Properties of  $C_{60}$ ,  $C_{70}$ , and Alkali-Metal Fullerides," Tokyo Metropolitan University, Tokyo, Japan, July 1992.
59. J.H. Weaver, "Electronic Structures and Properties of  $C_{60}$ ,  $C_{70}$ , and Alkali-Metal Fullerides," University of Tokyo, Tokyo, Japan, July 1992.
60. J.H. Weaver, "Electronic Structures and Properties of  $C_{60}$ ,  $C_{70}$ , and Alkali-Metal Fullerides," NEC Corporation, Tsukuba, Japan, July 1992.
61. J.H. Weaver, "Electronic Structures and Properties of  $C_{60}$ ,  $C_{70}$ , and Alkali-Metal Fullerides," Physics Department, Ohio University, Athens, October 1992.
62. J.H. Weaver, "Electronic Structures and Properties of  $C_{60}$ ,  $C_{70}$ , and Alkali-Metal Fullerides," Chevron Lecture Series, Department of Chemical Engineering, University of Washington, Seattle, February 1993.
63. J.H. Weaver, "Physics and Chemistry of Fullerenes and Fullerides," Institute for Materials Research, Sendai, Japan, December 1993.
64. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Department of Chemistry, Nagoya University, Nagoya, January 1994.
65. J.H. Weaver, "Fullerenes and Fullerides: Thin Films, Electronic Interactions, and Solid State Properties," Department of Applied Physics, Nagoya University, Nagoya, January 1994.
66. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Department of Electrical Engineering, Mie University, Tsu, January 1994.
67. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Department of Physics, University of Tokyo, Tokyo, January 1994.
68. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," ETL, Tsukuba, February 1994.
69. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Ishinomaki University, Ishinomaki, February 1994.
70. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Institute for Molecular Science, Okazaki, February 1994.
71. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Department of Physics, Jeonbuk University, Jeonbu, February 1994.
72. J.H. Weaver, "Physics and Chemistry of Fullerenes and Fullerides," University of Arizona, Tempe, April 1994.
73. J.H. Weaver, "Physics and Chemistry of Fullerenes and Fullerides," Northwestern University, Evanston, April 1994.

**Seminars & Colloquia:**

74. J.H. Weaver, "Fullerenes and Fullerides: Their Properties and Unique Characteristics," Department of Aerospace and Mechanics, University of Minnesota, April 1994.
75. J.H. Weaver, "Structural and Electronic Properties of Fullerenes and Fullerides: STM and Photoemission," Fritz-Haber-Institute, Berlin, July 1994.
76. J.H. Weaver, "Semiconductor Etching with Halogens: Scanning Tunneling Microscopy Investigations," California Institute of Technology, Pasadena, October 1994.
77. J.H. Weaver, "Semiconductor Etching with Halogens: Scanning Tunneling Microscopy Investigations," University of California-Los Angeles, October 1994.
78. J.H. Weaver, "Semiconductor Etching Studies with STM," Department of Physics, Freie Universität Berlin, May 1995.
79. J.H. Weaver, "Etching of Si and GaAs with Halogens: STM Investigations of Surface Morphologies," IBM-Zurich, May 1995.
80. J.H. Weaver, "Etching of Si and GaAs with Halogens: STM Investigations of Surface Morphologies," IFW-Dresden, May 1995.
81. J.H. Weaver, "Etching of Si and GaAs with Halogens: STM Investigations of Surface Morphologies," KFA-Jülich, May 1995.
82. J.H. Weaver, "Etching of Si and GaAs with Halogens: STM Investigations of Surface Morphologies," EPFL, Lausanne, May 1995.
83. J.H. Weaver, "Etching of Si and GaAs with Halogens: STM Investigations of Surface Morphologies," University of Neuchatel, May 1995.
84. J.H. Weaver, "Etching of Si and GaAs with Halogens: STM Investigations of Surface Morphologies," Fritz-Haber-Institut, Berlin, June 1995.
85. J.H. Weaver, "Atomic Structure and Evolution of Semiconductor Surfaces during Etching," University of Utah, May 1996.
86. J.H. Weaver, "STM Investigations of Atomic Scale Processes of Semiconductor Surfaces," Physics Department, Michigan Technical University, Houghton, January 1997.
87. J.H. Weaver, "STM Investigations of Atomic Scale Processes of Semiconductor Surfaces," Physics Department, Mankato State University, March 1997.
88. J.H. Weaver, "Visualization of Semiconductor Surface Etching with Scanning Tunneling Microscopy," Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, May 1997.
89. J.H. Weaver, "Halogen Etching of Semiconductor Surfaces: STM Investigations of Atomic Scale Processes," Institute for Solid State Physics, Tokyo, October 1997.
90. J.H. Weaver, "Nanostructures and their Interactions," Steacie Institute for Molecular Sciences, National Research Council of Canada, Ottawa, March 1999.
91. J.H. Weaver, "Nanostructures and their Interactions," Chemistry Department, Gustavus Adolphus College, St. Peter, Minnesota, April 1999.
92. J.H. Weaver, "Visualization of Surface Processes," Materials Science & Engineering Department, University of Illinois at Urbana, June 1999.
93. J.H. Weaver, "Visualization of Surface Etching with Scanning Tunneling Microscopy," Department of Chemical Engineering, Stanford University, November 1999.
94. J.H. Weaver, "Visualization of Surface Etching with Scanning Tunneling Microscopy," Department of Chemical Engineering, University of California-Berkeley, November 1999.
95. J.H. Weaver, "Visualization of Surface Etching with Scanning Tunneling Microscopy," Department of Chemistry, University of Wisconsin, November 1999.

**Seminars & Colloquia:**

96. J.H. Weaver, "Nanostructures and Their Interactions," Molecular and Electronic Nanostructures Seminar Series, Beckman Institute, University of Illinois, May 2000.
97. J.H. Weaver, "Atomic-scale Processes Associated with Semiconductor Etching," Department of Materials Science and Engineering, University of Illinois, September 2001.
98. J.H. Weaver, "Visualization of Surface Etching with Scanning Tunneling Microscopy," Department of Materials Science and Engineering, University of Virginia, May 2001.
99. J.H. Weaver, "Three-Dimensional Nanostructures of Anything on Anything: Synthesis and Integration," Department of Materials Science and Engineering, Georgia Tech, January 2002.
100. J.H. Weaver, "Surface Modification with Electrons and Photons," Beckman Institute, University of Illinois, February 2002.
101. J.H. Weaver, "Halogen Etching of Si with Emphasis on Atomic-Scale Process," Department of Materials Science and Engineering, Seoul National University, April 2002.
102. J.H. Weaver, "The Formation, Characterization, and Integration of Nanostructures: Ag and Si," Department of Materials Science and Engineering, Seoul National University, April 2002.
103. J.H. Weaver, "Three Dimensional Nanoengineered Assemblies," Department of Materials Science and Engineering, Northwestern University, February 2003.
104. J.H. Weaver, "Three Dimensional Nanoengineered Assemblies," School of Materials Science and Engineering, Tsinghua University, Beijing, March 2003.
105. J.H. Weaver, "Nanoscience and the Synthesis and Characterization of Nanometer Structures," Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, NWFP, Pakistan, January 2005.
106. J.H. Weaver, "Surprises on Surfaces: Halogens and What They Can Do on Si(100)," Department of Physics, Iowa State University, November, 2006.
107. J.H. Weaver, "The Surface Science of Etching," Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, NWFP, Pakistan, January 2007.
108. J.H. Weaver, "Surprises on Surfaces: Halogens and What They Can Do on Si(100)," Argonne National Laboratory, May 2007.

**Contributed Talks:**

1. J.H. Weaver, D.W. Lynch, and C.G. Olson, "Optical Properties of V, Nb, Ta, and Mo from 0.1 to 35 eV," American Physical Society Meeting, San Diego, March 1973.
2. C.H. Culp, J.H. Weaver, and D.W. Lynch, "Thermomodulation Spectra of V, Nb, and Ta at 310 and 90 K," American Physical Society Meeting, San Diego, March 1973.
3. D.W. Lynch, C.G. Olson, and J.H. Weaver, "Optical Properties of bcc and hcp Transition Metals," IV International Conference on Vacuum-Ultraviolet Radiation Physics, Hamburg, Germany, July 1974.
4. J.H. Weaver, "Optical Properties of Rh, Pd, Ir, and Pt, a Review," 7th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1974.
5. J.H. Weaver, C.G. Olson, and D.W. Lynch, "Optical Properties of Crystalline W," American Physical Society Meeting, Denver, March 1975.
6. R.L. Benbow, Z. Hurych, and J.H. Weaver, "Electronic Structure of Layered Semiconductors Sb<sub>2</sub>Te<sub>3</sub>, Sb<sub>2</sub>Te<sub>2</sub>Se, and Bi<sub>2</sub>Se<sub>3</sub>," American Physical Society Meeting, Denver, March 1975.
7. J.H. Weaver and C.G. Olson, "Optical Absorption in Y from 0.2 to 250 eV," 8th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1975.
8. J.H. Weaver and C.G. Olson, "Soft X-Ray Absorption in the 4d Transition Metals," American Physical Society Meeting, Atlanta, March 1976.
9. J.H. Weaver, C.G. Olson, D.W. Lynch, R.L. Benbow, and Z. Hurych, "High Energy Interband and np-nd Absorption in the Transition Metals," 9th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1976.
10. R.L. Bartlett, C.G. Olson, D.W. Lynch, and J.H. Weaver, "Optical Properties of Nb<sub>3</sub>Ge and Nb<sub>3</sub>Sn," 9th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1976.
11. J.H. Weaver and C.G. Olson, "Interband Structure and the Role of the 5f Electrons in the Thorium Metal," 9th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1976.
12. J.H. Weaver and C.G. Olson, "Interband Structure and the Role of 5f Electrons in Thorium," American Physical Society Meeting, San Diego, March 1977.
13. J.H. Weaver and C.G. Olson, "Thorium 5d-5f Soft-X-Ray Absorption Studies," V International Conference on Vacuum Ultraviolet Physics, Montpellier, France, September 1977.
14. J.H. Weaver, C.G. Olson, and D.W. Lynch, "High Energy Interband Absorption in the Transition Metals: Systematics and Interpretation," V International Conference on Vacuum Ultraviolet Physics, Montpellier, France, September 1977.
15. J.H. Weaver, J.A. Knapp, and D.E. Eastman, "Electronic Structure of the Thorium Hydrides ThH<sub>2</sub> and Th<sub>4</sub>H<sub>15</sub>," 10th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1977.
16. J.H. Weaver and D.T. Peterson, "Photoelectron Spectroscopy of Metal Dihydrides," International Conference on Hydrogen in Metals, Münster, Germany, March 1979.
17. J.H. Weaver, "Photoelectron Spectroscopy Studies of ScH<sub>2</sub>, YH<sub>2</sub>, and LuH<sub>2</sub>," American Physical Society Meeting, Chicago, March 1979.
18. B.N. Harmon, D.J. Peterman, J. Marchiando, and J.H. Weaver, "Electronic Structure of ScH<sub>2</sub> and YH<sub>2</sub>," American Physical Society Meeting, Chicago, March 1979.
19. D.J. Peterman, D.T. Peterson, and J.H. Weaver, "X-Dependent Optical Studies of LaH<sub>x</sub>," American Physical Society Meeting, Chicago, March 1979.
20. R.C. McKee, J.W. Osmun, D.W. Lynch, and J.H. Weaver, "Optical Properties of A15 Thin Films," American Physical Society Meeting, Chicago, March 1979.
21. N.G. Stoffel, G. Margaritondo, and J.H. Weaver, "Solid-State Effects in the Sn 4d Spin-Orbit Photoionization Branching Ratio: SnS vs. SnS<sub>2</sub>," American Physical Society Meeting, Chicago, March 1979.

**Contributed Talks:**

22. R. Rosei, J.H. Weaver, and M. Campagna, "Resonant Photoemission in Sm and Sm Compounds," 12th Annual Synchrotron Users Group Meeting, Stoughton, October 1979.
23. W. Eberhardt, R. Rosei, J.H. Weaver, M. Campagna, F. Hulliger, and E. Kaldis, "Resonant Photoemission and Electronic Structure of Ce Pnictides and Ce Chalcogenides," American Physical Society Meeting, New York, March 1980.
24. J.H. Weaver, A.M. Bradshaw, F.J. Himpsel, J.F. van der Veen, and D.E. Eastman, "Bulk Electronic Structure of TiC(100) and TiC(111)," American Physical Society Meeting, New York, March 1980.
25. D.T. Peterson and J.H. Weaver, "Photoelectron Spectroscopy Studies of ZrH<sub>x</sub> and HfH<sub>x</sub>," American Physical Society Meeting, New York, March 1980.
26. D.J. Peterman, D.T. Peterson, and J.H. Weaver, "Electronic Structure Studies of LaH<sub>x</sub> for  $1.96 \leq x \leq 2.87$ ," American Physical Society Meeting, New York, March 1980.
27. R. Rosei, J.H. Weaver, M. Campagna, W. Gudat, F. Hulliger, and H. Bach, "Surface Phase Transition, Surface Chemical Shifts, and Resonant Photoemission in Sm Metal, SmSb, SmSe, and SmS," American Physical Society Meeting, New York, March 1980.
28. M. Aono, F.J. Himpsel, D.E. Eastman, M.A. Steggert, and J.H. Weaver, "Experimental Energy - Bands for V<sub>3</sub>Si," American Physical Society Meeting, New York, March 1980.
29. R. Rosei, J.H. Weaver, W. Eberhardt, M. Campagna, W. Gudat, E. Kaldis, and F. Hulliger, "Resonant Photoemission from Ce-, Pr-, and Sm-Compounds," VI International Conference on Vacuum Ultraviolet Radiation Physics, Charlottesville, June 1980.
30. R. Bruhn, B. Sonntag, and J.H. Weaver, "Intershell Interactions in Transition Metals and Transition-Metal Compounds," VI International Conference on Vacuum Ultraviolet Radiation Physics, Charlottesville, Virginia, June 1980.
31. M. Campagna, W. Gudat, W. Eberhardt, R. Rosei, J.H. Weaver, E. Kaldis, and F. Hulliger, "4f-Levels in Ce Pnictides and Ce Chalcogenides by Resonant Photoemission with Synchrotron Radiation," Proceedings of the International Conference on the Physics of the Actinides and Related 4f Materials, Zürich, 1980.
32. G. Mason, S.-T. Lee, G. Apai, A. Franciosi, J.H. Weaver, R.F. Davis, and D.A. Shirley, "Particle-Size-Induced Valence Changes in Samarium Clusters," Gordon Conference on Electron Spectroscopy, College Park, 1980.
33. G. Mason, S.-T. Lee, G. Apai, A. Franciosi, J.H. Weaver, R.F. Davis, and D.A. Shirley, "Particle-Size-Induced Valence Changes in Samarium Clusters," 2nd International Conference on Small Particles and Inorganic Clusters, Lausanne, Switzerland, September 1980.
34. J.H. Weaver, A. Franciosi, and D.J. Peterman, "Refractory Metal Silicides," 13th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1980.
35. A. Franciosi, D.J. Peterman, and J.H. Weaver, "Intermixing Phases During the Formation of Si-Cr Interface," 8th Annual Conference of Compound Semiconductor Interfaces, Williamsburg, January 1981.
36. Y.J. Chabal, A. Franciosi, J.H. Weaver, J.E. Rowe, and J.M. Poate, "Photoemission Studies of Nickel and Palladium Silicides with Synchrotron Radiation," Materials Research Society, Boston, November 1981.
37. A. Franciosi, D.J. Peterman, J.H. Weaver, and V.L. Moruzzi, "Electronic Properties and Structure of the Si-Cr Interface," 14th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1981.
38. Y.J. Chabal, A. Franciosi, J.H. Weaver, J.E. Rowe, and J.M. Poate, "Stoichiometry and Structural Disorder Effects on the Electronic Structure of Ni and Pd Silicides," 14th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1981.
39. A. Franciosi, J.H. Weaver, D.G. O'Neill, Y. Chabal, J.E. Rowe, J.M. Poate, O. Bisi, and C. Calandra, "Chemical Bonding at the Si-Metal Interface: Si-Ni and Si-Cr," 9th Annual Conference on Physics and Chemistry of Semiconductor Interfaces, Asilomar, January 1982.
40. J.H. Weaver, D.J. Peterman, D.K. Misemer, and D.T. Peterson, "Electronic Structure of VH, NbH, and TaH," American Physical Society Meeting, Dallas, March 1982.
41. D.J. Peterman, J.H. Weaver, and M. Croft, "Valence and Electronic Structure of Ce-Compounds," American Physical Society Meeting, Dallas, March 1982.



**Contributed Talks:**

42. A. Franciosi, J.H. Weaver, and F.A. Schmidt, "Electronic Structure of Nickel Silicides Ni<sub>2</sub>Si, NiSi, and NiSi<sub>2</sub>," American Physical Society Meeting, Dallas, March 1982.
43. A. Franciosi and J.H. Weaver, "Silicon-Metal Interface Reaction and Bulk Electronic Structure of Silicides," 16th International Conference on Physics of Semiconductors, Montpellier, France, September 1982.
44. A. Franciosi, D.G. O'Neill, and J.H. Weaver, "Silicon-Metal Interface Studies," 15th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1982.
45. J.H. Weaver, "Chemical Bonding in Metal Silicides," 16th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1983.
46. A. Franciosi and J.H. Weaver, "Ionic Contribution to Silicon-Metal Bonding: Si(111)-Ca Interface Reactions," 17th International Conference on the Physics of Semiconductors, San Francisco, August 1984.
47. M. Grioni, J.J. Joyce, and J.H. Weaver, "Electronic Structure and Interface Chemistry of Reactive Rare Earth/III-IV Semiconductor Junctions: Ce/GaAs(110)," 17th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1984.
48. M. Grioni, J.J. Joyce, and J.H. Weaver, "Reactive and Nonreactive Sm on GaAs(110)," 17th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1984.
49. J.J. Joyce, M. Grioni, and J.H. Weaver, "Critical Stages in the Development of the Cr/GaAs(110) Interfaces," 17th Annual Synchrotron Radiation Center Users Group Meeting, Wisconsin, October 1984.
50. J.J. Joyce, M. Grioni, and J.H. Weaver, "Transition Metal/GaAs Reactive Interface: Vanadium on GaAs(110)," 17th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1984.
51. D.G. O'Neill, J.J. Joyce, T.W. Capehart, and J.H. Weaver, "Evolutionary Study of the Valence Electronic Structure of Epitaxial Ag on Pd(100)," 17th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1984.
52. J.H. Weaver, M. Grioni, J.J. Joyce, S.A. Chambers, D.G. O'Neill, and M. del Giudice, "Cluster-Induced Reactions at a Metal-Semiconductor Interface: Ce/Si(111)," 17th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1984.
53. J.H. Weaver, M. Grioni, J.J. Joyce, M. del Giudice, and D.G. O'Neill, "Modeling a Heterogeneous Metal/Semiconductor Interface: Ce on Si(111)," 17th Annual Synchrotron Radiation Users Group Meeting, Stoughton, October 1984.
54. D.G. O'Neill, J.J. Joyce, T.W. Capehart, and J.H. Weaver, "Evolution of the Bulk Electronic Structure of Ag on Pd(100)," 31st National Symposium of the American Vacuum Society, Reno, December 1984.
55. S.A. Chambers, T.R. Greenlee, G.A. Howell, and J.H. Weaver, "Quantitative Interdiffusion Studies of Noble Metal/Si(111)-7x7 Interfaces by Angle-Resolved Auger Electron Emission," 31st National Symposium of the American Vacuum Society, Reno, December 1984.
56. M. Grioni, J.J. Joyce, and J.H. Weaver, "Reaction at a Refractory Metal/Semiconductor Interface: V/GaAs(110)," 31st National Symposium of the American Vacuum Society, Reno, December 1984.
57. M. Grioni, M. del Giudice, J.J. Joyce, and J.H. Weaver, "Modeling of Interface Reaction Products with High Resolution Core Level Photoemission," 31st National Symposium of the American Vacuum Society, Reno, December 1984.
58. A. Fujimori and J.H. Weaver, "Valence Mixing in CeN: 4f-Ligand versus 4f-Conduction-Band Hybridization," American Physical Society Meeting, Baltimore, March 1985.
59. T.W. Capehart, D.G. O'Neill, and J.H. Weaver, "Crossover between Two and Three Dimensional Electronic Structure in Thin Ag Films on Pd(100)," American Physical Society, Baltimore, March 1985.
60. S.A. Chambers, S.B. Anderson, and J.H. Weaver, "Surface Structural Determination of Metal/Semiconductor Interfaces by Angle-Resolved Auger Electron Emission," TRISA, Oconomowoc May 1985.
61. M. Grioni, J.J. Joyce, and J.H. Weaver, "Metal-Anion Bond Strength and Room Temperature Diffusion at Metal/GaAs Interfaces: Transition vs. Rare-Earth vs. Au Metal Overlayers," 32nd National Symposium of the American Vacuum Society, Houston, November 1985.

**Contributed Talks:**

62. M. del Giudice, R.A. Butera, and J.H. Weaver, "Quantitative Modeling of Reactive Metal/Semiconductor Interfaces: V/Ge(111)," 32nd National Symposium of the American Vacuum Society, Houston, November 1985.
63. S.A. Chambers, M. del Giudice, M.W. Ruckman, S.B. Anderson, and J.H. Weaver, "High-Resolution Electron Energy Loss Spectroscopy as a Probe of Surface Morphology and Electronic States at Metal/Semiconductor Interfaces," 32nd National Symposium of the American Vacuum Society, Houston, November 1985.
64. M. del Giudice, R.A. Butera, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "Temperature Dependent Intermixing at the V/Ge(111) Interface," Materials Research Society Meeting, Boston, December 1985.
65. J.J. Joyce and J.H. Weaver, "Characterization of an Extended Reactive Noble-Metal/III-V Semiconductor Interface: Cu/GaAs(110)," Materials Research Society Meeting, Boston, December 1985.
66. M.W. Ruckman, J.J. Joyce, F. Boscherini, and J.H. Weaver, "Room Temperature Migration of Au and Ge at the Au/a-Ge and Inverted Ge/Au Interfaces," American Physical Society, Las Vegas, March 1986.
67. M.W. Ruckman, J.J. Joyce, F. Boscherini, and J.H. Weaver, "Ga and As Interdiffusion and Reaction at Epitaxial Fe/GaAs(110) and Co/GaAs(110) Interfaces," American Physical Society, Las Vegas, March 1986.
68. D.G. O'Neill and J.H. Weaver, "Evolution of a Surface State into an Interface State: A Probe of the Buried Epitaxial Cr/Au(100) Interface," 19th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1986.
69. J.J. Joyce, M. del Giudice, M.W. Ruckman, and J.H. Weaver, "Silicon Formation at the Ti/Si(111) Interface: Room Temperature Reaction and Schottky Barrier Formation," 19th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1986.
70. J.J. Joyce, M. Grioni, M. del Giudice, F. Boscherini, M.W. Ruckman, and J.H. Weaver, "Quantitative Modeling of Metal/GaAs(110) Interface Formation using High Resolution Core Level Photoemission," 33rd National Symposium of the American Vacuum Society, Baltimore, October 1986.
71. S.A. Chambers, D.M. Hill, F. Xu, M. del Giudice, and J.H. Weaver, "Determination of Diffusion Parameters for Silicide Formation at the Ti/Si(111)-7x7 Interface," 33rd National Symposium of the American Vacuum Society, Baltimore, October 1986.
72. S.A. Chambers, F. Boscherini, S.B. Anderson, J.J. Joyce, H.-W. Chen, M.W. Ruckman, and J.H. Weaver, "Reaction and Epitaxy at the Co/Si(111) Interface," 33rd National Symposium of the American Vacuum Society, Baltimore, October 1986.
73. F. Boscherini, J.J. Joyce, M.W. Ruckman, C. Capasso, and J.H. Weaver, "High Resolution Core Level Study of the Co/Si(111) Interface," Materials Research Society Meeting, Boston, December 1986.
74. M. del Giudice, J.J. Joyce, F. Boscherini, C. Capasso, and J.H. Weaver, "High Resolution Core Level Studies of Interdiffusion and Reaction at Metal-Semiconductor Interfaces," Materials Research Society Meeting, Boston, December 1986.
75. F. Xu, Yoram Shapira, J.J. Joyce, F. Boscherini, D.M. Hill, S.A. Chambers, and J.H. Weaver, "Determining Concentration Profiles for Metal/III-V Interfaces: Au/GaAs(100), Au/InSb(110), Co/GaAs(100)," 14th Annual Conference on Physics and Chemistry of Semiconductor Interfaces, Salt Lake City, January 1987.
76. D.G. O'Neill and J.H. Weaver, "Interface States and the Evolving Electronic Structure of the Cr/Au(100) Interface," American Physical Society Meeting, New York, March 1987.
77. M. del Giudice, J.J. Joyce, and J.H. Weaver, "Core Level Binding Energy Shifts, Thermodynamics, and Morphologies for Metal/Si and Metal/Ge Interfaces," American Physical Society Meeting, New York, March 1987.
78. M. del Giudice, R.A. Butera, J.J. Joyce, M.W. Ruckman, and J.H. Weaver, "Temperature Dependent Intermixing at the V/Ge(111) Interface," American Physical Society Meeting, New York, March 1987.
79. J.J. Joyce, M. Grioni, M. del Giudice, C. Aldao, and J.H. Weaver, "Interface Development of Rare-Earth/III-V Semiconductor Interfaces: Ce/GaAs(110) and Ce/InP(110)," American Physical Society Meeting, New York, March 1987.
80. F. Boscherini, Y. Shapira, C. Capasso, C. Aldao, M. del Giudice, and J.H. Weaver, "Exchange Reaction, Clustering, and Surface Segregation at the Al/InSb(110) Interface," American Physical Society Meeting, New York, March 1987.
81. S.A. Chambers, I.M. Vitomirov, S.B. Anderson, H.-W. Chen, T.J. Wagener, and J.H. Weaver, "High-Energy Auger and Medium-Energy Backscattered Electron Diffraction as a Probe of Ultra-Thin Epitaxial Overlayers, Sandwiches, and Superlattices," 3rd International Conference on Superlattices, Microstructures, and Microdevices, August 1987.

**Contributed Talks:**

82. J.J. Joyce, C. Aldao, B.M. Trafas, and J.H. Weaver, "Island Formation and Metallic Screening at the In/Semiconductor Interface," 20th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1987.
83. C.M. Aldao, I.M. Vitomirov, F. Xu, and J.H. Weaver, "Photoemission Studies of a Nonabrupt Heterojunction: Ge/InP(110)," 20th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1987.
84. I.M. Vitomirov, F. Xu, C.M. Aldao, and J.H. Weaver, "Direct Evidence of the Onset of In Surface Segregation for Co/InP(110)," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
85. H.M. Meyer III, S.G. Anderson, Lj. Atanasoska, and J.H. Weaver, "X-Ray Photoemission Investigations of Electron Injection and Trapping at the Gold/Polyimide Interface," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
86. C.M. Aldao, I.M. Vitomirov, and J.H. Weaver, "CoSi<sub>2</sub> Diffusion Barrier Modulation of the Au/Si(111) Interface Reaction," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
87. D.M. Hill, F. Xu, Zhangda Lin, and J.H. Weaver, "XPS Measurement of Kinetic Parameters in the Ge/Si(111)-(7x7) Heterojunction at Elevated Temperatures," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
88. D.G. O'Neill and J.H. Weaver, "Enhanced Magnetism at the Cr/Au(001) Interface," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
89. S.A. Chambers, H.-W. Chen, T.J. Wagener, and J.H. Weaver, "Nucleation and Growth of Ultra-Thin Metallic Overlayers on Single-Crystal Transition Metal Surfaces," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
90. H.M. Meyer III, Y. Gao, D.M. Hill, T.J. Wagener, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "High Temperature Superconductors: Occupied and Unoccupied Electronic States," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
91. T.J. Wagener, Y. Gao, H.M. Meyer III, D.M. Hill, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Spectroscopic Examinations of the Surface Stability of High Temperature Superconductors," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
92. Y. Gao, H.M. Meyer III, T.J. Wagener, D.M. Hill, S.G. Anderson, J.H. Weaver, B. Flandermeyer, and D.W. Capone II, "Interface Formation: High Temperature Superconductors with Noble Metals, Reactive Transition Metals, and Semiconductors," 34th National Symposium of the American Vacuum Society, Anaheim, November 1987.
93. M. Vos, F. Xu, J.H. Weaver, and H. Cheng, "Schottky Barrier Formation at Au/ZnSe(100) Interfaces," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
94. Yongjun Hu, T.J. Wagener, Y. Gao, and J.H. Weaver, "Cluster Growth and the Evolution of Empty Electronic States," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
95. G.D. Waddill, C.M. Aldao, I.M. Vitomirov, Y. Gao, and J.H. Weaver, "Influence of Temperature on Interface Reactions and Schottky Barrier Evolution for Au/InP(110)," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
96. C.M. Aldao, I.M. Vitomirov, G.D. Waddill, and J.H. Weaver, "Morphology and Schottky Barrier Evolution for Au/InP(110): Deposition of Hot Atoms versus Cold Clusters," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
97. I.M. Vitomirov, C.M. Aldao, and J.H. Weaver, "In Search of Symmetry: Evolution of the In/GaP(110) and Ga/InP(110) Interfaces," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
98. B.M. Trafas, C.M. Aldao, Y. Gao, F. Xu, and J.H. Weaver, "Cr, Co, Pd, Au, and In Overlayers on PbS(100): Adatom Interaction and Interface Formation," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
99. D.M. Hill, H.M. Meyer III, and J.H. Weaver, "Interface Reactions and Atomic Distributions for Y, Ba, Cu, and Ti Overlayers on SrTiO<sub>3</sub>(100)," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
100. T.J. Wagener, H.M. Meyer III, D.M. Hill, Y. Gao, J.H. Weaver, K.C. Goretta, D. Peterson, Z. Fisk, N. Spencer, and C.F. Gallo, "Occupied and Unoccupied Electronic States of High Temperature Superconductors," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.

**Contributed Talks:**

101. H.M. Meyer III, D.M. Hill, T.J. Wagener, P.J. Benning, J.H. Weaver, and D.L. Nelson, "Passivation, Contact Formation, and Reactivity of Vacuum Deposited Metals, Semiconductors, and Oxides on High Temperature Superconductors," 35th National Symposium of the American Vacuum Society, Atlanta, October 1988.
102. G.D. Waddill, C.M. Aldao, I.M. Vitomirov, and J.H. Weaver, "Interface Formation by Atom and Cluster Deposition: Electronic and Structural Properties," 21st Annual Synchrotron Radiation Users Group Meeting, Stoughton, Wisconsin, October 1988.
103. C.M. Aldao, G.D. Waddill, S.G. Anderson, and J.H. Weaver, "Temperature Effects on Ti/GaAs(110) Interface Formation Involving Cluster and Atom Deposition," 16th Annual Conference on the Physics and Chemistry of Semiconductor Interfaces (PCSI-16), Bozeman, January 1989.
104. Y. Gao, Y. Hu, T.J. Wagener, and J.H. Weaver, "Resonance Inverse Photoemission of  $\text{Bi}_2\text{Ca}_{2-x}\text{Sr}_{1+x}\text{Cu}_2\text{O}_{8+y}$  and  $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ , Unoccupied Oxygen States, and Plasmons," March Meeting of the American Physical Society, St. Louis, March 1989.
105. Y. Gao, Y. Hu, T.J. Wagener, and J.H. Weaver, "Empty Electronic State Evolution for Sc and Electron Dynamics at the 3p-3d Giant Dipole Resonance," March Meeting of the American Physical Society, St. Louis, March 1989.
106. T.J. Wagener, H.M. Meyer, Y. Hu, M.B. Jost, and J.H. Weaver, "Occupied and Empty Electronic States of High- $T_c$  Oxide Superconductors and Related Materials," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
107. H.M. Meyer, T.J. Wagener, D.M. Hill, and J.H. Weaver, "Surface Reactivity of Cuprate Superconductors and Related Compounds," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
108. C.M. Aldao, M. Vos, and J.H. Weaver, "Interface Formation with Metal Ions and Neutrals: Influence on Interface Morphology on Schottky Barrier Formation for Ag/InP(110)," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
109. G.D. Waddill, C.M. Aldao, and J.H. Weaver, "Symmetric Fermi Level Evolution at Metal-Semiconductor Interfaces: The Role of Substrate Dopant Concentration," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
110. S.G. Anderson, S.J. Severtson, and J.H. Weaver, "Temperature Dependent Al/GaAs(110) Interface Formation and Adatom Energy References," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
111. Y. Hu, T.J. Wagener, M.B. Jost, and J.H. Weaver, "Inverse Photoemission and Shallow Core-Hole Emission of Epitaxial Sn and Bi on GaAs(110)," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
112. H.M. Meyer, T.J. Wagener, and J.H. Weaver, "Photoemission and Inverse Photoemission Investigations of the Occupied and Unoccupied Electronic Structure of Polyimide," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
113. I.M. Vitomirov, G.D. Waddill, and J.H. Weaver, "Surface Interactions of Adatoms with GaAs(110): Reversible Temperature Dependent Charge Redistribution," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
114. B.M. Trafas, C.M. Aldao, R.L. Siefert, M. Vos, F. Xu, and J.H. Weaver, "CdTe(110) Interface Formation: Disruption, Cluster Formation, Segregation, and Metal-Anion Reaction Products with Adatoms of Ti, Pd, Ag, In, Au, Ce, and Al," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
115. T. Komeda, T. Hirano, J. Sullivan, C. Capasso, and J.H. Weaver, "A Photoemission Study of the Interface Between Single Crystal Transition-Metal Silicides and Reactive Metal Overlayers," 36th National Symposium of the American Vacuum Society, Boston, October 1989.
116. G.D. Waddill, T. Komeda, P.J. Benning, and J.H. Weaver, "Photoelectron Spectroscopy and Microscopy with Synchrotron Radiation," 37th National Symposium of the American Vacuum Society, Toronto, October 1990.
117. J.M. Seo, S.G. Anderson, Y. Chen, and J.H. Weaver, "Dynamic Photo-Induced Low Temperature Oxidation of Si(111) with Condensed Oxidizers:  $\text{O}_2$ ,  $\text{N}_2\text{O}$ , and  $\text{H}_2\text{O}$ ," 37th National Symposium of the American Vacuum Society, Toronto, October 1990.
118. J.M. Seo, Y. Chen, and J.H. Weaver, "Stability of Oxide Films Grown on GaAs(110) at 20 K during Overlayer Formation," 37th National Symposium of the American Vacuum Society, Toronto, October 1990.
119. T.R. Ohno, Y.N. Yang, G. Kroll, and J.H. Weaver, "Cluster-Assembled Metal- and Semiconductor-HTS Interfaces," 37th National Symposium of the American Vacuum Society, Toronto, October 1990.

**Contributed Talks:**

120. T. Komeda, B.M. Trafas, D.M. Hill, J.M. Seo, R.L. Siefert, M.C. Schabel, and J.H. Weaver, "Adsorption and Interaction of Sm on GaAs(110) Studied by Scanning Tunneling Microscopy and Temperature Dependent Photoemission," 37th National Symposium of the American Vacuum Society, Toronto, October 1990.
121. M.B. Jost, Y. Hu, and J.H. Weaver, "Evolution of the Empty Electronic States of Low-Coverage, Oriented, Hexagonal Structures on Bi/InP(110): An Inverse Photoemission Study," 37th National Symposium of the American Vacuum Society, Toronto, October 1990.
122. P.J. Benning, G.D. Waddill, T. Komeda, and J.H. Weaver, "Photoelectron Microscopy and Spectroscopy using Synchrotron Radiation," 23rd Annual Synchrotron Radiation Users Group Meeting, Stoughton, November 1990.
123. G.D. Waddill, P.J. Benning, and J.H. Weaver, "Cluster Assembly of Interfaces," 23rd Annual Synchrotron Radiation Users Group Meeting, Stoughton, November 1990.
124. B.M. Trafas, Y.-N. Yang, R.L. Siefert, and J.H. Weaver, "From Clusters to Crystallites: Scanning Tunneling Microscopy of Ag Growth on GaAs(110)," American Physical Society, Cincinnati, March 1991.
125. Y. Chen, F. Stepniak, J.M. Seo, S.E. Shirron, and J.H. Weaver, "Effects of Surface Band Bending on Low Energy Photon-Induced Oxidation of GaAs(110), American Physical Society, Cincinnati, March 1991.
126. J.C. Patrin, Y.Z. Li, and J.H. Weaver, "Cluster Growth of Al on GaAs(110) Studied by Scanning Tunneling Microscopy," American Physical Society, Cincinnati, March 1991.
127. Y.Z. Li, J.C. Patrin, M. Chander, and J.H. Weaver, "Scanning Tunneling Microscopy of Ce, Sm, and Yb Structures on GaAs(110)," American Physical Society, Cincinnati, March 1991.
128. Y.-N. Yang, B.M. Trafas, R.L. Siefert, and J.H. Weaver, "GaAs(110) Terrace Width Distributions and Kink Formation," American Physical Society, Cincinnati, March 1991.
129. P.J. Benning, G.D. Waddill, T. Komeda, and J.H. Weaver, "Photoelectron Microscopy and Spectroscopy using Synchrotron Radiation," 13th Symposium on Applied Surface Science, Minneapolis, June 1991.
130. Y.Z. Li, J.C. Patrin, and J.H. Weaver, "Cluster Growth of Al on GaAs(110) Studied by Scanning Tunneling Microscopy," 13th Symposium on Applied Surface Science, Minneapolis, June 1991.
131. J.H. Weaver, "Electronic Structure and Properties of C<sub>60</sub>, C<sub>70</sub>, and Alkali-Metal Fullerides," Workshop on Fullerenes, Philadelphia, August 1991.
132. P.J. Benning, D.M. Poirier, T.R. Ohno, Y. Chen, M.B. Jost, F. Stepniak, G.H. Kroll, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "C<sub>60</sub> and C<sub>70</sub> Fullerides with Na, K, and Cs," 24th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1991.
133. J.M. Seo, S.E. Harvey, Y. Chen, and J.H. Weaver, "Dynamic Photoinduced InP-Nitride Formation at 20 K," 38th National AVS Symposium, Seattle, November 1991.
134. Y. Chen, F. Stepniak, S.E. Harvey, J.M. Seo, and J.H. Weaver, "Electron and Photon Stimulated Oxidation for O<sub>2</sub> Condensed on Semiconductor Surfaces: O<sub>2</sub> Negative-Ion Resonant States Formation," 38th National AVS Symposium, Seattle, November 1991.
135. P.J. Benning, Y. Chen, F. Stepniak, and J.H. Weaver, "Electronic States of Alkali-Metal Fullerides: Na, K, and Cs in Solid C<sub>60</sub> and C<sub>70</sub>," 38th National AVS Symposium, Seattle, November 1991.
136. M.B. Jost, P.J. Benning, N. Troullier, D.M. Poirier, J.L. Martins, J.H. Weaver, L.P.F. Chibante, and R.E. Smalley, "Valence and Conduction Band Electronic States in Solid C<sub>60</sub> and C<sub>70</sub>: Inverse Photoemission, Synchrotron Radiation Photoemission, and Theory," 38th National AVS Symposium, Seattle, November 1991.
137. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Temperature and Coverage Dependent Structures of Sb on GaAs(110) from Scanning Tunneling Microscopy," 38th National AVS Symposium, Seattle, November 1991.
138. D.M. Poirier, G.H. Kroll, M.B. Jost, T.R. Ohno, and J.H. Weaver, "Alkali Metal Intercalated C<sub>60</sub> Films Studied with Inverse Photoemission and X-Ray Photoemission," American Physical Society, Indianapolis, March 1992.
139. P.J. Benning, T.R. Ohno, Y. Chen, C. Gu, F. Stepniak, and J.H. Weaver, "Photoemission Studies and Resistivity Measurements of Fulleride Thin Films," American Physical Society, Indianapolis, March 1992.

**Contributed Talks:**

140. Y.Z. Li, M. Chander, J.C. Patrin, and J.H. Weaver, "Individual and Multilayer C<sub>60</sub> Studied with Scanning Tunneling Microscopy and Spectroscopy," American Physical Society, Indianapolis, March 1992.
141. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Domain Wall Formation for Sb Overlayers on GaAs(110): A Scanning Tunneling Microscopy Study," American Physical Society, Indianapolis, March 1992.
142. Y.N. Yang, Y.S. Luo, and J.H. Weaver, "The Impact of Anisotropic Kinetics on Epitaxial Growth: An STM Study of Ge/GaAs(110)," American Physical Society, Indianapolis, March 1992.
143. F. Stepniak, C. Gu, Y. Chen, T.R. Ohno, and J.H. Weaver, "Surface Etching of GaAs(110) with Br<sub>2</sub> and H<sub>2</sub>," 25th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1992.
144. J.C. Patrin, Y.Z. Li, M. Chander, and J.H. Weaver, "Orientational Epitaxy of Sb and Bi Thin Films on III-V(110) Surfaces Studied by STM," 39th National Symposium of the American Vacuum Society, Chicago, November 1992.
145. M. Chander, Y.Z. Li, J.C. Patrin, and J.H. Weaver, "Two Modes for Water Adsorption on Si(001)-2x1: An STM Study," 39th National Symposium of the American Vacuum Society, Chicago, November 1992.
146. Y.S. Luo, Y.-N. Yang, J.H. Weaver, L.T. Florez, and C.J. Palmström, "Effects of Annealing on the Surface Morphology of Decapped GaAs(001)," 39th National Symposium of the American Vacuum Society, Chicago, November 1992.
147. P.J. Benning, F. Stepniak, Y. Chen, C. Gu, and J.H. Weaver, "Photoemission Studies and Resistivity Measurements of Alkali-Fulleride Thin Films: A Comparative Study of Na<sub>x</sub>C<sub>60</sub>, K<sub>x</sub>C<sub>60</sub>, and Cs<sub>x</sub>C<sub>60</sub>," 39th National Symposium of the American Vacuum Society, Chicago, November 1992.
148. M. Chander and J.H. Weaver, "Layer-by-Layer Etching of Si(100)-2x1 with Br<sub>2</sub>: A Scanning Tunneling Microscopy Study," 40th National Symposium of the American Vacuum Society, Orlando, November 1993.
149. D.M. Poirier and J.H. Weaver, "Alkali Metal Fullerides Studied with Photoemission, Low Energy Electron Diffraction, and Scanning Tunneling Microscopy," Fall Meeting of the Materials Research Society, Boston, November 1993.
150. F. Stepniak, J.C. Patrin, and J.H. Weaver, "Surface Etching of Si(100) and GaAs(110) with Chlorine and Bromine," Fall Meeting of the Materials Research Society, Boston, November 1993.
151. S. McKernan, P. Kotula, D. Owens, C.B. Carter, and J.H. Weaver, "High-Resolution Electron Microscopy Analysis of Tube Kinks in Carbon Nanotubes," Fall Meeting of the Materials Research Society, Boston, November 1993.
152. M. Knupfer, D.M. Poirier, and J.H. Weaver, "Photoelectron Spectroscopy of K-C<sub>70</sub>," International Winterschool on the Electronic Properties of Novel Materials, Kirchberg, Austria, March 1994.
153. D. Rioux, M. Chander, R.J. Pechman, and J.H. Weaver, "Flux- and Temperature-Dependent Surface Morphologies for Br-etched Si(100)-2x1," American Physical Society, Pittsburgh, March 1994.
154. X.-S. Wang, R.J. Pechman, and J.H. Weaver, "Scanning Tunneling Microscopy Studies of Ion Bombardment of GaAs(100)," American Physical Society, Pittsburgh, March 1994.
155. P.J. Benning, C.G. Olson, D.W. Lynch, and J.H. Weaver, "Evidence of Band Dispersion in C<sub>60</sub>(111) from Angle Resolved Photoemission Spectroscopy," American Physical Society, Pittsburgh, March 1994.
156. A.J. Arko, J.J. Joyce, A.B. Andrews, R.I.R. Blyth, Z. Fisk, C.G. Olson, P.J. Benning, P.C. Canfield, D.M. Poirier, and J.H. Weaver, "Hole Occupancy in Yb Heavy Fermions from UPS and XPS," American Physical Society, Pittsburgh, March 1994.
157. J.J. Joyce, A.J. Arko, A.B. Andrews, R.I.R. Blyth, P.S. Riseborough, P.C. Canfield, C.G. Olson, D.M. Poirier, J.H. Weaver, M. Makivic, and D.L. Cox, "Temperature Dependence of the 4f Levels in Yb Heavy Fermions from UPS and XPS," American Physical Society, Pittsburgh, March 1994.
158. R.J. Pechman, X.-S. Wang, and J.H. Weaver, "Sputtering of GaAs(110) Studied with Scanning Tunneling Microscopy," 41st National Symposium of the American Vacuum Society, Denver, October 1994.
159. D. Rioux, F. Stepniak, R.J. Pechman, and J.H. Weaver, "Chemisorption and Thermally Activated Etching of Iodine on Si(100)-2x1," 41st National Symposium of the American Vacuum Society, Denver, October 1994.
160. D.W. Owens, C.M. Aldao, D.M. Poirier, and J.H. Weaver, "Charge Transfer, Doping, and Interface Morphologies for Al-C<sub>60</sub>," 42nd National Symposium of the American Vacuum Society, Minneapolis, October 1995.

**Contributed Talks:**

161. C.Y. Cha, J. Brake, and J.H. Weaver, "Dry Etching of GaAs(110) Decorated with Ag Nanocrystallites: An STM Study," 42nd National Symposium of the American Vacuum Society, Minneapolis, October 1995.
162. R.J. Pechman, X.-S. Wang, and J.H. Weaver, "Interactions of Br with Si(111)-7 $\times$ 7," 42nd National Symposium of the American Vacuum Society, Minneapolis, October 1995.
163. J. Brake, X.-S. Wang, and J.H. Weaver, "STM Study of Ge Growth on Sputtered GaAs(110)," 42nd National Symposium of the American Vacuum Society, Minneapolis, October 1995.
164. X.-S. Wang, R.J. Pechman, and J.H. Weaver, "Trends in Surface Roughening: STM Analyses of Ion-sputtered GaAs(110)," 42nd National Symposium of the American Vacuum Society, Minneapolis, October 1995.
165. E.J. Snyder, R.J. Pechman, D.W. Owens, and J.H. Weaver, "Domain Nucleation and Growth after Halogen Etching: Si(111)-Br," 42nd National Symposium of the American Vacuum Society, Minneapolis, October 1995.
166. J.J. Joyce, A.J. Arko, C.G. Olson, D.M. Poirier, A.B. Andrews, J.H. Weaver, P.J. Benning, and P.C. Canfield, "Photoelectron Spectroscopy and the Electronic Properties of Strongly Correlated Yb Compounds," 28th Annual Synchrotron Radiation Center Users Group Meeting, Stoughton, October 1995.
167. C.Y. Cha, J. Brake, B.Y. Han, and J.H. Weaver, "Visible-light-induced Etching of Br/GaAs(110)," 43rd National Symposium of the American Vacuum Society, Philadelphia, October 1996.
168. Y. Gong, D.W. Owens, and J.H. Weaver, "Etching of Double-height-stepped Si(100)-2 $\times$ 1: A Study of Steps and their Interactions," 43rd National Symposium of the American Vacuum Society, Philadelphia, October 1996.
169. S.J. Chey, Y. Gong, and J.H. Weaver, "Surface Morphologies of Br-etched Ge/Si(001)," 44th National Symposium of the American Vacuum Society, San Jose, October 1997.
170. B.Y. Han, C.Y. Cha, and J.H. Weaver, "GaAs(110) Terrace Patterning by Halogenation and Laser Irradiation," 44th National Symposium of the American Vacuum Society, San Jose, October 1997.
171. B.Y. Han, K. Nakayama, and J.H. Weaver, "Surface Modification on GaAs(110) Induced by 100-3000 eV Electrons," 45th International Symposium of the American Vacuum Society, Baltimore, October 1998.
172. K. Nakayama, C.M. Aldao, and J.H. Weaver, "Vacancy Creation as the Rate Limiting Step in Halogen Etching of Si(100)-2 $\times$ 1," 45th International Symposium of the American Vacuum Society, Baltimore, October 1998.
173. K.S. Nakayama and J.H. Weaver, "Etching of Si(100) with Halogens," International Conference on Scanning Tunneling Microscopy, Seoul, Korea, August 1999.
174. K.S. Nakayama and J.H. Weaver, "Electron Modification of Semiconductor Surfaces," Okazaki International Conference on Advantages of Utilization of Synchrotron Radiation in Nano-structure Creation, Okazaki, Japan, January 2000.
175. K.S. Nakayama and J.H. Weaver, "Electron Modification of Semiconductor Surfaces," March Meeting of the American Physical Society, Minneapolis, March 2000.
176. K.S. Nakayama, B.Y. Han, and J.H. Weaver, "Semiconductor Surface Modification with Electrons and Photons," Physical Electronics Conference, Baton Rouge, June 2000.
177. V.N. Antonov, C.L. Haley, and J.H. Weaver, "Buffer-Layer-Assisted Nanostructure Growth via Two-Dimensional Cluster-Cluster Aggregation," 50<sup>th</sup> Midwest Solid State Conference, Urbana, October 2002.
178. G. Xu, E. Graugnard, V. Petrova, K.S. Nakayama, and J.H. Weaver, "Dynamics of Si(100)-(2 $\times$ 1) Surface Modification with Cl," 50<sup>th</sup> Midwest Solid State Conference, Urbana, October 2002.
179. K.S. Nakayama, E. Graugnard, and J.H. Weaver, "Surface Modification without Desorption: Recycling of Cl on Si(100)-(2 $\times$ 1)," 50<sup>th</sup> Midwest Solid State Conference, Urbana, October 2002.
180. E. Graugnard, G. Xu, V. Petrova, K.S. Nakayama, and J.H. Weaver, "Dynamics of Br-Si(100)-(2 $\times$ 1): Surface Modification in the Absence of Desorption," 49th International Symposium of the AVS, Denver, November 2002.
181. G. Xu, E. Graugnard, V. Petrova, K.S. Nakayama, and J.H. Weaver, "Dynamics of Si(100)-(2 $\times$ 1) Surface Modification with Cl," 49th International Symposium of the AVS, Denver, November 2002.

**Contributed Talks:**

182. K.S. Nakayama, E. Graugnard, and J.H. Weaver, "Surface Modification without Desorption: Recycling of Cl on Si(100)-(2x1)," 49th International Symposium of the AVS, Denver, November 2002.
183. C.L. Haley, V.N. Antonov, and J.H. Weaver, "Buffer-Layer-Assisted Nanostructure Growth via Two-Dimensional Cluster-Cluster Aggregation," 49th International Symposium of the AVS, Denver, November 2002.
184. G.J. Xu, K.S. Nakayama, B.R. Trenhaile, C.M. Aldao, and J.H. Weaver, "Roughening Dynamics, Equilibrium Morphologies, and Monte Carlo Modeling of Cl-Si(100)-(2x1)," Nanotechnology Industry Workshop, Urbana, May 2003.
185. A.S. Bhatti, V.N. Antonov, J.S. Palmer, and J.H. Weaver, "On the Growth Kinetics of Nanostructures on a Desorbing Buffer Layer," Nanotechnology Industry Workshop, Urbana, May 2003.
186. G.J. Xu, K.S. Nakayama, B.R. Trenhaile, C.M. Aldao, and J.H. Weaver, "Roughening Dynamics, Equilibrium Morphologies, and Monte Carlo Modeling of Cl-Si(100)-(2x1)," Understanding Complex Systems Symposium, Urbana, May 2003.
187. V.N. Antonov, J.S. Palmer, A.S. Bhatti, and J.H. Weaver, "Diffusion-Limited Cluster-Cluster Aggregation on Surfaces of Desorbing Rare Gas Solids," Understanding Complex Systems Symposium, Urbana, May 2003.
188. G.J. Xu, K.S. Nakayama, B.R. Trenhaile, C.M. Aldao, and J.H. Weaver, "Equilibrium Morphologies for Roughened Si(100) at 700 – 750 K: Dependence on Cl Concentration," 25th Annual Symposium on Applied Surface Science, Urbana, June 2003. David Xu won a "best poster" prize.
189. K.S. Nakayama, E. Graugnard, and J.H. Weaver, "Tunneling Electron Induced Bromine Hopping on Si(100)-(2x1)," 25th Annual Symposium on Applied Surface Science, Urbana, June 2003.
190. V.N. Antonov, J.S. Palmer, A. Bhatti, and J.H. Weaver, "Influence of Buffer Composition on Buffer-Layer-Assisted Growth and Absorption Spectroscopy on Au Nanostructures," 25th Annual Symposium on Applied Surface Science, Urbana, June 2003.
191. K.S. Nakayama, E. Graugnard, and J.H. Weaver, "Adatom Hopping Induced by Tunneling Electrons: Br on Si(100)-(2x1), 50th International Symposium of the AVS, Baltimore, November 2003.
192. G.J. Xu, K.S. Nakayama, B.R. Trenhaile, C.M. Aldao, and J.H. Weaver, "Equilibrium Morphologies for Cl-Roughened Si(100) at 700-750 K: Experiments and Monte Carlo Modeling, 50th International Symposium of the AVS, Baltimore, November 2003. David Xu won a Dorothy M. and Earl S. Hoffman Scholarship.
193. V.N. Antonov, J.S. Palmer, A.S. Bhatti, and J.H. Weaver, "Mobility of Nanostructures on the Surface of a Desorbing Solid: Friction at the Nanoscale," 50th International Symposium of the AVS, Baltimore, November 2003.
194. V.N. Antonov, J.S. Palmer, P.S. Waggoner, A.S. Bhatti, and J.H. Weaver, "Nanoparticle Diffusion on Desorbing Solids: The Role of Elementary Excitations in Buffer-Layer-Assisted Growth," Understanding Complex Systems Symposium, Urbana, May 2004. Vassil Antonov won "best poster of the conference."
195. V.N. Antonov, J.S. Palmer, P.S. Waggoner, A.S. Bhatti, and J.H. Weaver, "Nanoparticle Diffusion on Desorbing Solids: The Role of Elementary Excitations in Buffer-Layer-Assisted Growth," AVS Prairie Chapter, Urbana, June 2004.
196. G.J. Xu and J.H. Weaver, "Si Epitaxial Growth on Br-Si(100): How Steric Repulsive Interactions Dictate Overlayer Development," AVS Prairie Chapter, Urbana, June 2004. David Xu won "best poster of the conference".
197. B.R. Trenhaile, G.J. Xu, A. Agrawal, A.W. Signor, K.S. Nakayama, and J.H. Weaver, "Charge-Carrier-Stimulated Halogen Desorption from Si(100)-(2x1)," AVS Prairie Chapter, Urbana, June 2004.
198. V.N. Antonov, J.S. Palmer, P.S. Waggoner, A.S. Bhatti, and J.H. Weaver, "Nanoparticle Diffusion on Desorbing Solids: The Role of Elementary Excitations in Buffer-Layer-Assisted Growth," AVS 51st International Symposium, Anaheim, November 2004. Vassil Antonov won the Varian Award of the AVS.
199. G.J. Xu and J.H. Weaver, "Si Epitaxial Growth on Br-Si(100): How Steric Repulsive Interactions Dictate Overlayer Development," AVS 51st International Symposium, Anaheim, November 2004. David Xu competed for the Morton M. Traum Award of the AVS.
200. B.R. Trenhaile, G.J. Xu, A. Agrawal, A.W. Signor, K.S. Nakayama, and J.H. Weaver, "Charge-Carrier-Stimulated Halogen Desorption from Si(100)-(2x1)," AVS 51st International Symposium, Anaheim, November 2004.
201. G.J. Xu, A.W. Signor, A. Agrawal, K.S. Nakayama, B.R. Trenhaile, and J.H. Weaver, "Pairwise Movement of Iodine on Si(100) at Room Temperature: Direct Observation with Scanning Tunneling Microscopy," MRS Symposium, Boston, November 2004. David Xu won a Graduate Student Silver Award of the MRS.



**Contributed Talks:**

202. P.S. Waggoner, J.S. Palmer, V.N. Antonov, and J.H. Weaver, "Metal Nanostructure Growth on Buffer Layers of Molecular CO<sub>2</sub>," CNST Workshop on Nanotechnology 2005, Urbana, IL May 2005.
203. V.N. Antonov and J.H. Weaver, "Kinetics of Diffusion and Self-Assembly of Metal and Semiconductor Nanostructures on Rare Gas Solids," 65th Annual Physical Electronics Conference, Madison, June 2005. Vassil Antonov competed for the Nottingham Prize.
204. B.R. Trenhaile and J.H. Weaver, "Electron Stimulated Desorption from an Unexpected Source: Hot Internal Electrons for Br-Si(100)-(2x1)," 65th Annual Physical Electronics Conference, Madison, June 2005. Brent Trenhaile competed for the Nottingham Prize.
205. J.S. Palmer, V.N. Antonov, A.S. Bhatti, P.S. Waggoner, P. Swaminathan, and J.H. Weaver, "Rare Gas Solid Grains and Grooves: The Influence of Film Structure on Buffer-layer-assisted Nanostructure Assembly," 65th Annual Physical Electronics Conference, Madison, June 2005.
206. P.S. Waggoner, J.S. Palmer, V.N. Antonov, and J.H. Weaver, "Buffer-Layer-Assisted Growth on Molecular Buffers: Metallic Nanostructures on CO<sub>2</sub>," 65th Annual Physical Electronics Conference, Madison, June 2005. Undergraduate student presentation.
207. Abhishek Agrawal, R. Butera, K.S. Nakayama, and J.H. Weaver, "Etching of Cl-Si(100)-(2x1) under Continuous Cl<sub>2</sub> Flux: A New Reaction Pathway and Surface Modification," 65th Annual Physical Electronics Conference, Madison, June 2005.
208. A.W. Signor, K.S. Nakayama, and J.H. Weaver, "Passivation of C-Type Defects on Si(100) with Iodine: Removal of Gap States," 65th Annual Physical Electronics Conference, Madison, June 2005.
209. J.S. Palmer, V.N. Antonov, A.S. Bhatti, P. Swaminathan, P.S. Waggoner, and J.H. Weaver, "The Effects of Buffer Structure on Buffer-Layer-Assisted Growth: Grain Boundaries, Grooves, and Pattern Transfer," Dynamics of Materials Revealed by Electron Microscopy, Urbana, June 2005.
210. V.N. Antonov, J.S. Palmer, A.S. Bhatti, and J.H. Weaver, "Buffer-Layer-Assisted Growth and the Formation of Nanostructures of (Almost) Anything on Anything," Dynamics of Materials Revealed by Electron Microscopy, Urbana, June 2005.
211. V.N. Antonov, J.S. Palmer, A.S. Bhatti, and J.H. Weaver, "Buffer Layer Assisted Growth and the Formation of Nanostructures of (Almost) Anything on Anything," 30th International Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, July 2005.
212. J.S. Palmer, V.N. Antonov, A.S. Bhatti, P.S. Waggoner, P. Swaminathan, and J.H. Weaver, "Rare Gas Solid Grains and Grooves: The Influence of Film Structure on Buffer-layer-assisted Nanostructure Assembly," 30th International Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, July 2005.
213. A.S. Bhatti, P. Swaminathan, V.N. Antonov, J.S. Palmer, and J.H. Weaver, "Photoluminescence from a-Ge Nanoparticles: Confinement Effects," 30th International Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, July 2005.
214. P.S. Waggoner, J.S. Palmer, V.N. Antonov, and J.H. Weaver, "Metal Nanostructure Growth on Molecular Buffer Layers of CO<sub>2</sub>," 52nd International Symposium of the AVS, Boston, October 2005.
215. B.R. Trenhaile, V.N. Antonov, G.J. Xu, A. Agrawal, A.W. Signor, R.E. Butera, K.S. Nakayama, and J.H. Weaver, "Phonon-Activated Electron-Stimulated Desorption of Halogens from Si(100)-(2x1)," 52nd International Symposium of the AVS, Boston, October 2005. Brent Trenhaile won a Dorothy M. and Earl S. Hoffman Scholarship.
216. V.N. Antonov, P. Swaminathan, J.S. Palmer, and J.H. Weaver, "Self-Assembly and Photoluminescence of CdSe Quantum Dots from Buffer-Layer-Assisted Growth," 52nd International Symposium of the AVS, Boston, October 2005.
217. P. Swaminathan, V.N. Antonov, J.A.N.T. Soares, J.S. Palmer, A.S. Bhatti, and J.H. Weaver, "II-VI Semiconductor Nanostructures Produced by Assembly on Rare Gas Solids," CNST Nanotechnology Workshop, Urbana, May 2006.
218. A. Agrawal, R.E. Butera, and J.H. Weaver, "Etching of Si(100) under Supersaturated Halogen Conditions: New Reaction Pathways and Novel Surface Morphologies," AVS Prairie Chapter Meeting, Naperville, June 2006.
219. R.E. Butera, A. Agrawal, and J.H. Weaver, "Si(114): Its Clean Surface, Defects, and Adsorbates," AVS Prairie Chapter Meeting, Naperville, June 2006.

**Contributed Talks:**

220. P. Swaminathan, J.S. Palmer, and J.H. Weaver, "Cd-based II-VI Semiconductor Nanostructures Produced by Buffer-Layer-Assisted Growth: Structural Evolution and Photoluminescence," AVS Prairie Chapter Meeting, DeKalb, Illinois, June 2006.
221. R.E. Butera, A. Agrawal, and J.H. Weaver, "Chemisorption of Cl on Si(114)," 53rd International Symposium of the AVS, San Francisco, November 2006.
222. A. Agrawal, R.E. Butera, and J.H. Weaver, "Etching of Si(100)-(2x1) with Cl under Supersaturated Conditions: A Novel Reaction Pathway," 53rd International Symposium of the AVS, San Francisco, November 2006.
223. A.W. Signor and J.H. Weaver, "Nanostructure Diffusion Mechanisms Revealed with Scanning Tunneling Microscopy," International School on Surfaces, Thin Films, Nanostructures, and Applications, Lahore, Pakistan, November 2006.
224. A. Agrawal, R.E. Butera, and J.H. Weaver, "Cl Insertion on Si(100)-(2x1): Etching under Conditions of Super-Saturation," Beckman Institute, University of Illinois at Urbana-Champaign, December 2006.
225. A.W. Signor and J.H. Weaver, "Migration of Strained Nanostructures by Misfit-Dislocation Glide," Beckman Institute Nanohour, Urbana, April 2007.
226. A. Agrawal, "Supersaturation Etching of Si(100): Surface Modification and Patterning," Recipient of the Racheff-Intel Award at UIUC and department presentation, April 2007.
227. A. Agrawal and J.H. Weaver, "Supersaturation Etching of Si(100)-(2x1) via Cl Insertion: A New Reaction Pathway," 67th Annual Physical Electronics Conference, Urbana, Illinois, June 2007. Competed for the Nottingham Prize.
228. A.W. Signor and J.H. Weaver, "Misfit-dislocation-mediated Migration of Nanostructures: Cu Islands on Ag(111)," 67th Annual Physical Electronics Conference, Urbana, Illinois, June 2007. Competed for the Nottingham Prize.
229. J.S. Palmer and J.H. Weaver, "Dewetting-mediated Self-assembly of Nanoparticles," 67th Annual Physical Electronics Conference, Urbana, Illinois, June 2007. Competed for the Nottingham Prize.
230. P. Swaminathan, J.S. Palmer, and J.H. Weaver, "Nanoparticle Assembly during Thin Film Sublimation: Gold Clusters on Bismuth," 67th Annual Physical Electronics Conference, Urbana, Illinois, June 2007.
231. R.E. Butera and J.H. Weaver, "Site Selective Chemisorption of Cl on Si(114)," 67th Annual Physical Electronics Conference, Urbana, Illinois, June 2007.
232. A.W. Signor and J.H. Weaver, "Misfit-dislocation-mediated Migration: Cu Islands on Ag(111)," AVS 54<sup>th</sup> International Symposium, Seattle, October 2007.
233. J.S. Palmer, P. Swaminathan, and J.H. Weaver, "Solid State Dewetting-mediated Assembly of Nanoparticles," AVS 54<sup>th</sup> International Symposium, Seattle, October 2007.
234. R.E. Butera, A. Agrawal, and J.H. Weaver, "Site Selective Chemisorption of Cl on Si(114)," AVS 54<sup>th</sup> International Symposium, Seattle, October 2007.
235. Abhishek Agrawal, R.E. Butera, and J.H. Weaver, "Super-Saturation Etching on Si(100)-(2x1) via Cl Insertion: A New Reaction Pathway," AVS 54<sup>th</sup> International Symposium, Seattle, October 2007.
236. Abhishek Agrawal, R.E. Butera, and J.H. Weaver, "A Novel Etching Reaction on Si(100)-(2x1) via Cl Insertion," UIUC AVS Student Chapter, Urbana, November 2007.
237. A.W. Signor, H.H. Wu, D.R. Trinkle, and J.H. Weaver, "Collective Migration of Cu Nanostructures on Ag(111)," AVS 55<sup>th</sup> International Symposium, Boston, October 2008.
238. P. Swaminathan, J.S. Palmer, and J.H. Weaver, "Competition Between Particle Formation and Burrowing: Gold on Bismuth," AVS 55<sup>th</sup> International Symposium, Boston, October 2008.

**Contributed Talks:**

239. R.E. Butera and J.H. Weaver, "Step Etching and Restructuring on Cl<sub>2</sub>-exposed, Cl-saturated Si(001)-(2x1)," AVS 55<sup>th</sup> International Symposium, Boston, October 2008.
240. P. Swaminathan, S. Suaramakrishnan, J.S. Palmer, and J.H. Weaver, "Size Dependence of Nanoparticle Dissolution in a Matrix: Gold Particles in Bismuth," AVS 56<sup>th</sup> International Symposium, San Jose, November 2009.
241. A.W. Signor, H.H. Lou, D.R. Tinkle, and J.H. Weaver, "Ultra Fast Trimer Diffusion for Cu on Ag(111)," AVS 56<sup>th</sup> International Symposium, San Jose, November 2009.
242. R. Butera and J.H. Weaver, "Adsorbate Induced Step Structures Transformation and Terrace Restructuring," AVS 56<sup>th</sup> International Symposium, San Jose, November 2009.
243. C.M. Aldao, R.E. Butera, and J.H. Weaver, "Si(100) Etching Under Super-saturation Conditions," IV Meeting on Surface Physics and Chemistry, La Plata, Argentina, October 2009.