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Education: B.A., Physics, Rice University, 1963

Ph.D., Physics, University of Texas at Austin, 1968

Research: Theoretical Physics

Positions:

Research Associate, University of Texas at Austin, 1969 - 1970

Resident Associate, Argonne National Laboratory, summers of 1967 - 69

Assistant Professor of Physics, Texas A&M University, 1970 - 1976

Associate Professor of Physics, Texas A&M University, 1976 - 1983

Sabbatical Scientist, Solar Energy Research Institute, 1979 - 1980

Visiting Associate Professor of Physics, University of Illinois, 1980 - 1981

Professor of Physics, Texas A&M University, 1983 – Present

Honors and Research Activities

Honors Program Teacher/Scholar Award, 2005

University Teaching Award, 2004 (from Association of Former Students)

College of Science Teaching Award, 2003

Organizer of Second Mitchell Symposium on Astronomy, Cosmology, and Fundamental Physics
(April 10-14, 2006)

Organizing Committee, Fifth Conference on Dark Matter in Astroparticle Physics (October 3-9, 2004)

Organizer of Mitchell Symposium on Observational Cosmology (April 11-16, 2004)

Organizer of Institute for Quantum Studies Research for Undergraduates Program (Summer, 2003)

Organizer of Richard Arnowitt Fest (April 5-8, 1998)

Co-organizer: 1984 Workshop on Theory and Modeling for Materials Design,

1989 International Workshop on Surface Dynamics

1995 Conference on Physics and Chemistry of Semiconductor Interfaces

Editorial Board, Superlattices and Microstructures (1994-2003)

Service on National Science Foundation and Department of Energy panels

Executive Committee, Texas Section of the American Physical Society (2004-2007)

Fellow of the American Vacuum Society

Representative Talks at Conferences

“Optimizing laser pulses for controlled excitation of materials and molecules”, APS 2011 March Meeting (Dallas).

“Response of materials and molecules to fast intense laser pulses”, an invited talk at Workshop on Large Scale Simulations in Materials Science and Biophysics (Arizona State University, January, 2011).

“Control of specific vibrational modes in carbon nanotubes and fullerenes responding to fast intense laser pulses”, APS 2010 March Meeting (Portland).

“Origin of the Lorentzian metric, standard supersymmetry, and an effective Higgs field”, an invited talk at Conference on Beyond the Standard Models of Particle Physics, Cosmology, and Astrophysics (Cape Town, South Africa, February, 2010).

“Coupling of electrons to the electromagnetic field in a localized basis”, APS 2009 March Meeting (Pittsburgh).

“Toward molecular switches and biochemical detectors employing adaptive femtosecond-scale laser pulses”, APS 2008 March Meeting (New Orleans).

“Supersymmetric $SO(N)$ from a Planck-scale statistical theory”, an invited talk at Workshop on Standard Model and Beyond in the LHC Era (Valparaiso, Chile, January, 2008).

“Supersymmetric dark matter candidate (neutralino) from a fundamental statistical theory”, an invited talk at Sixth International Heidelberg Conference on Dark Matter in Astro and Particle Physics (Sydney, Australia, September, 2007).

“Toward molecular switches and biochemical detectors employing adaptive femtosecond-scale laser pulses”, an invited talk at Laser Physics 2007 conference (Leon, Mexico, August, 2007).

“Response of biological molecules to adaptive femtosecond-scale laser pulses”, an invited talk at the Summer School on Quantum Optics and Molecular Physics (Casper, Wyoming, July, 2007).

“Comparison of vibrational and electronic properties of dipicolinic acid with its parent ring molecule, pyridine”, an invited talk at Frontiers of Nonlinear Physics 2007 (on the Volga River, from Nizhny Novgorod to Saratov, Russia, July, 2007).

“Azobenzene isomerization and the prospects for optical molecular switches”, an invited talk at the Symposium on Quantum Mechanics, Informatics, and Control (Princeton University, April, 2007).

“Supersymmetry and Lorentz invariance as low-energy symmetries in a fundamental statistical theory”, Joint Meeting of Pacific Region Particle Physics Communities (Waikiki, Hawaii, October 20 – November 3, 2006).

“Supersymmetry and Lorentz invariance as low-energy symmetries in a fundamental statistical theory”, 2006 international symposium on Particles, Strings and Cosmology (PASCOS06), Ohio State University, Columbus, Ohio, September 10-15, 2006.

“Response of Dipicolinic Acid to Ultrafast Laser Pulses”, an invited talk at the International Conference on Coherent Control of Fundamental Processes in Optics and X-ray Optics (on the Volga River, from Nizhny Novgorod to Kazan, Russia, June 29 - July 3, 2006).

“Supersymmetry from a Fundamental Statistical Theory: Further Implications”, April Meeting of the American Physical Society (Dallas, April 22–25, 2006)

“Vibrational modes of dipicolinic acid, and their role in the response to femtosecond-scale laser pulses”, an invited talk at the 36th Winter Colloquium on The Physics of Quantum Electronics (Snowbird, January, 2006).

“Response of Biomolecules to Ultrafast Laser Pulses”, 2005 March Meeting of the American Physical Society (Los Angeles).

“Response of benzene and dipicolinic acid to ultrafast laser pulses”, an invited talk at the 35th Winter Colloquium on The Physics of Quantum Electronics (Snowbird, January, 2005).

“Predictions of Lorentz-Violating Supergravity”, 10th international symposium on Particles, Strings and Cosmology (PASCOS’04), Northeastern University, Boston, August 16-22, 2004.

“Lorentz-Violating Supergravity and Its Experimental Signatures”, 3rd Meeting on CPT and Lorentz Symmetry, August 4-7, 2004, Indiana University, Bloomington.

“Response of Matter to Ultrafast Laser Pulses”, an invited talk at the 2nd International Conference on Frontiers of Nonlinear Physics (on the Volga River, from Nizhny Novgorod to St. Petersburg, Russia, July 5-12, 2004).

“The intricate dance of electrons and nuclei during a photochemical reaction”, an invited talk at the 34th Winter Colloquium on The Physics of Quantum Electronics (Snowbird, January, 2004).

"Searching for Lorentz Violation", an invited talk at the Second International Conference on Particle and Fundamental Physics in Space (Washington, D.C., December, 2003).

"Chemical systems and femtosecond-scale laser pulses", an invited talk at the 2003 Workshop on Quantum Optics (Grand Targhee Resort, near Jackson Hole, Wyoming, July, 2003).

"Dark Matter, Quantum Gravity, Vacuum Energy, and Lorentz Invariance", Fourth Conference on Physics Beyond the Standard Model (Castle Ringberg, Tegernsee, Germany, June, 2003).

"Simulations of the cis-trans photoisomerization of butadiene," 2003 March Meeting of the American Physical Society (Austin).

"Molecular Transformations following Femtosecond-scale Laser Pulses" an invited talk at the 33rd Winter Colloquium on The Physics of Quantum Electronics (Snowbird, January, 2003).

"Higgs Bosons and Dark Matter in Supersymmetric Scenarios with R-Parity Violation and Possible Violations of Lorentz Invariance", Third Conference on Physics Beyond the Standard Model (Oulu, Finland, June, 2002).

"Lorentz Invariance and Higgs Decays", 2002 Meeting of the APS Division of Particles and Fields (College of William and Mary, Williamsburg, May, 2002).

"Semiempirical Electron-Photon-Ion Dynamics of Chemical and Biological Systems", 2002 March Meeting of the American Physical Society (Indianapolis).

"Dark Matter and Lorentz Invariance", Second Meeting on CPT and Lorentz Symmetry (Indiana University, August, 2001).

"Dark Matter Equation of Motion and Density Profiles", PASCOS 2001 International Symposium on Particles, Strings and Cosmology (University of North Carolina, April, 2001).

"Electronic and Structural Response of Materials to Fast Intense Laser Pulses", an invited talk at the SPIE Conference on Ultrafast Phenomena in Semiconductors (San Jose, January, 2001).

"Mechanisms for Laser Control of Chemical Reactions", an invited talk at the 31st Winter Colloquium on The Physics of Quantum Electronics (Snowbird, January, 2001).

"Response of Materials to Fast Intense Laser Pulses", Seminar at Lawrence Livermore National Laboratory (September, 2000, in conjunction with Livermore workshop on this general topic).

"Mechanism for a Small but Nonzero Cosmological Constant", NORDITA conference on Problems with Vacuum Energy (Copenhagen, August, 2000).

"The Higgs as a Supersymmetric Partner, with a New Interpretation of Yukawa Couplings", DPF2000 Meeting of APS Division of Particles and Fields (Ohio State University, August, 2000).

"Spin-Zero SUSY WIMPs", Phenomenology 2000 Symposium (Madison, Wisconsin, April, 2000).

"Response of Molecules and Materials to Fast Intense Laser Pulses", 30th Winter Colloquium on The Physics of Quantum Electronics (Snowbird, Utah, January, 2000).

"Equation of Motion of the Higgs Boson", Seventh International Symposium on Particles, Strings and Cosmology (Lake Tahoe, California, December, 1999).

"Interaction of Light with Biological Molecules", Symposium on New Advances in Materials Prediction, at the Fall Meeting of the Materials Research Society (Boston, November, 1999).

"Response of Semiconductors and Fullerenes to Ultrashort and Ultra-intense Laser Pulses", Symposium on Computational Approaches to Predicting the Optical Properties of Materials, at the Fall Meeting of the Materials Research Society (Boston, November, 1999).

"Lorentz Invariance at LHC Energies", Second International Conference on Physics Beyond the Standard Model (Tegernsee, Germany, June, 1999).

"Simulations of the Response of Chlorophyll and Retinal to Light", Centennial Meeting of the American Physical Society (Atlanta, March, 1999).

"Failure of Lorentz Invariance at LHC Energies", CPT98 Meeting on CPT and Lorentz Invariance (Bloomington, Indiana, November, 1998).

"Geometry Versus Electronic Effects in Scanning Tunneling Microscopy: The Arsenic Vacancy on GaAs(110)", 24th International Conference on the Physics of Semiconductors (Jerusalem, August, 1998).

"Instanton Cosmology", April Meeting of the American Physical Society (Columbus, Ohio, 1998).

"Observational Tests of Instanton Cosmology", The Richard Arnowitt Fest (George Bush Library, April, 1998).

"Electronic and Structural Response to Ultrafast Laser Pulses", an invited talk at the 1998 March Meeting of the American Physical Society (Los Angeles).

"Tight-Binding Electron-Ion Dynamics: A Method for Treating Nonadiabatic Processes and Interactions with Electromagnetic Radiation", Fall Meeting of the Materials Research Society (Boston, December, 1997).

"Instanton Cosmology", Sixth International Symposium on Particles, Strings and Cosmology (Northeastern University, Boston, March, 1998).

"Response of Semiconductors to Fast Intense Laser Pulses," Workshop on Quantum Optics (Taos, August, 1997).

"Calculations of Transmission Resonances in the Bipolar Quantum Resonant Tunneling Transistor," March Meeting of the American Physical Society (Kansas City; March, 1997).

"Simulations of GaAs and H₂⁺ in Intense Laser Fields," an invited talk at the Texas Section Meeting of the American Physical Society (Lubbock; October, 1995).

"Simulating Nonadiabatic Processes in Quantum Chemistry and Materials Science," an invited talk at the Symposium on High-Performance Computing (Phoenix, April, 1995).

"Structure and Dynamics of Anion and Cation Vacancies at III-V(110) Surfaces," 22nd Conference on the Physics and Chemistry of Semiconductor Interfaces (Phoenix, January, 1995).

"Electron-Ion Dynamics: A New Technique for Simulating Both Electronic Transitions and Atomic Motion in Molecules and Materials," 41st Symposium of the American Vacuum Society (Denver, October, 1994).

"Characterization of the Ga Vacancy on GaAs(110)," an invited talk at the 22nd International Conference on the Physics of Semiconductors (Vancouver, Canada; August, 1994).

"Quantum Molecular Dynamics and Electron-Ion Dynamics: Versatile Techniques for Simulations of Defects and Growth on Semiconductor Surfaces," an invited talk at the Centre Europeen de Calcul Atomique et Moleculaire Workshop on Computer Simulation of the Growth of Semiconductor Materials (Lyon, France; June, 1994).

"Semiconductor Surface Defects Studied Through Scanning Tunneling Microscopy and Tight-Binding Molecular Dynamics," Workshop on Dynamical Phenomena at Crystal Surfaces (Irvine, California; June, 1994).

"Excited-State Molecular Dynamics and Constrained Molecular Dynamics for Simulations of Epitaxial Growth," 1994 March Meeting of the American Physical Society (Pittsburgh).

"(2x1) to c(4x2) Phase Transition at the Si(100) Surface," 20th International Conference on Low Temperature Physics (Eugene, Oregon; August, 1993).

"Computational Studies of Real Materials," Third Conference on Computational Materials Research (Morgantown, West Virginia; May, 1993).

"Tight-Binding Molecular Dynamics Simulations of GaAs Surface Vacancies," Gordon Conference on Scanning Tunneling Microscopy (Ventura, California; March, 1993).

"Computational Studies of Real Materials," Mardi Gras Conference on Concurrent Computing in the Physical Sciences (Baton Rouge, Louisiana; February, 1993).

"Atomic Forces in Scanning Tunneling Microscopy on Si(100): From Weak to Intense Fields," 21st International Conference on the Physics of Semiconductors (Beijing, China; August, 1992).

"Polarization of Electronic Charge and Distortion of Surface Geometry by an STM Tip," 38th National Symposium of the American Vacuum Society (Seattle, November, 1991).

"Energy Surface and Dynamics of Si(100)," 38th National Symposium of the American Vacuum Society (Seattle, November, 1991).

"Dimer Switching on Si(100)," International Conference on Scanning Tunneling Microscopy (Interlaken, Switzerland; August, 1991).

"Influence of STM Tip on Electronic Structure and Geometry: Si(100) Dimers," International Conference on Scanning Tunneling Microscopy (Interlaken, Switzerland; August, 1991).

"Computer Studies of Relaxation and Reconstruction of Semiconductor Surfaces," 37th National Symposium of the American Vacuum Society (Toronto, October, 1990).

"Simulations of Single and Double Step Growth on Si(100)," 37th National Symposium of the American Vacuum Society (Toronto, Canada; October, 1990).

"Equilibrium Chemisorption Geometries and Electronic Structures of Bi, Sb, Sn, Al, and Au Clusters on III-V Semiconductors," 5th International Conference on the Physics of Electro-Optic Microstructures and Microdevices (Heraklion, Crete; August, 1990).

"Surface Phonons in III-V Semiconductors," an invited talk at the International Workshop on Surface Dynamics (Austin, November, 1989).

"Novel Surface Phonon Branches in III-V Semiconductors," 36th National Symposium of the American Vacuum Society (Boston, November, 1989).

"Simulation of Chemical Reactions on Semiconductor Surfaces," an invited talk at the Workshop on Molecular Dynamics Simulations (Laguna Beach, California; March, 1989).

"Simulations of Atomic Processes at Semiconductor Surfaces", an invited talk at the World Materials Congress (Chicago, September, 1988).

"Reaction of Atoms, Metallic Clusters, and Diatomic Molecules with III-V Semiconductor Surfaces", 19th International Conference on the Physics of Semiconductors (Warsaw, Poland; August, 1988).

"Simulations of Atomic Processes at Semiconductor Surfaces", an invited talk at the March Meeting of the American Physical Society (New Orleans, March, 1988).

Ph.D. Students Supervised (name, year Ph.D. received; first job)

Chenwei Jiang, 2010; 2 years research at Texas A&M for Ph.D. from Xi'an Jiaotong University.
Antonio Mondragon, 2007; instructor at Blinn College and Stephen F. Austin State University.

Seichirou Yokoo, 2006; postdoctoral research scientist, Cognitive Brain Mapping Laboratory, Brain Science Institute, RIKEN Research Institute, Japan.

Ben Torralva, 2001; research associate, Lawrence Livermore National Laboratory (followed by staff physicist, Lawrence Livermore National Laboratory).

Traian Dumitrica, 2000; research associate, Rice University (followed by assistant professor, University of Minnesota).

Robert Hamilton, 1999; Dell Computer, Austin.

Qingsheng Gao, 1998; Rare Medium /Attension Inc., San Antonio.

Shahram Khosravi, 1997; computer science department at Texas A&M.

John S. Graves, 1997; Raytheon /E-Systems, Dallas.

Brent A. Richert, 1989; assistant professor, Air Force Academy, Colorado Springs. Received Distinguished Graduate Student Award; also graduate student awards from Texas chapter of the American Vacuum Society (Dallas, 1988) and national Materials Research Society (Boston, 1988).

Marcin Streszewski, 1988; instructor, Jagellonian University, Cracow, Poland.

Shangfen Ren, 1986; research associate, University of Illinois (followed by assistant, associate, and full professor at Illinois State University); now an APS Fellow.

Hunhwa Lim, 1984; assistant professor, Kyung-Hee University, South Korea (followed by associate professor and professor).

Richard P. Beres, 1982; Texas Instruments, Houston (followed by Texas Instruments, Dallas).

William R. Lawrence, 1976; assistant professor, University of Houston at Clear Lake (followed by associate professor and full professor).

Rodger W. Hardy, 1975; visiting assistant professor, University of Houston (followed by NCR, Colorado Springs; Solar Energy Research Institute, Denver; McDonnell-Douglas, St. Louis).

Vernon E. Kenner, 1973; Teledyne-Brown, Huntsville, Alabama (followed by LTV, Dallas). Received Distinguished Graduate Student Award.

M.S. Students Supervised

Andrea Burzo, 2001; continued on as a Ph.D. student in experimental quantum optics.

Yongjun Tang, 1999; left to seek a Ph.D. in Economics.

Antonio Mondragon, 1996; continued on as a Ph.D. student.

Yi Liu, 1995; employed by Vitesse Semiconductor Corporation, Dallas.

Pradip Das, 1994; employed as computer analyst by State Farm in Bloomfield, Illinois.

Jianfeng Shao, 1991 (CUSPEA student); entered Ph.D. program in materials research, University of Minnesota.

Jin Liu, 1991; entered Ph.D. program in electrical engineering, Southern Methodist University.

Waltrand Teresa Taferner, 1990; entered Ph.D. program in experimental physics, University of Houston.

Chomsik Lee, 1989; entered graduate program in electrical engineering, Texas A&M University.

Stephen Blount, 1985; employed by Mission Research Corporation, Santa Barbara, California.

Jack Denur, 1975; entered Ph.D. physics program at North Texas State University.

Research Associates and Visitors

Zhibin Lin, 2008-2009; research position at Renewable Energy Materials Research Science and Engineering Center, and Department of Physics, Colorado School of Mines

Xiang Zhou, 2008-2009; returned to faculty position at Wuhan University

Petra Sauer, 2004-2007; instructor at Bard High School Early College in New York City.

Robert Murawski, 2004-2005; afterward research associate with Marlan Scully group.

Yusheng Dou, 2001-2004; assistant professor, Nicholls State University.
Jan Gryko, 1989-1993; research position at Arizona State University (followed by assistant professor at College of Eastern Utah).
Zhi-Hong Huang, 1989-1990; research positions at University of Toledo and Penn State University.
Sydney Davison, 1987-88; on sabbatical from University of Waterloo.
Kelin Wang, 1985; on leave from University of Science and Technology of China.
Czeslaw Jedrzejek, 1984-present; on sabbatical and frequent visits from Jagellonian University, Cracow.
Madhu Menon, 1984-90; research position at University of Kentucky.
Terry Humphreys, 1983-84; E-Systems, Dallas.
Anil Kumar, 1983-84; assistant professor of physics, Prairie View A&M (followed by associate professor and professor).

Some Substantial Undergraduate Research

Clarence Annett, 1973; entered graduate program in physics at Ohio State.
Shelley Shumway, 1986; received NSF fellowship, and Ph.D. in physics from Cornell University; research associate at Argonne National Laboratory and University of Washington.
Kent Wade, 1987; received M.S. in physics from University of Illinois, and entered Ph.D. program in materials research at University of Wisconsin.
Zorawar Wadiasingh, 2004-2006; now a graduate student in physics at Rice University. (Received Goldwater Scholarship in 2005.)

Courses Taught

Physics 689, Concepts of Modern Theoretical Physics
Physics 689, High-Temperature Superconductivity
Physics 689, Theory of Advanced Materials
Physics 689, Special Topics in Condensed Matter Physics
Physics 659 and 660, History of Physics
Physics 634, Quantum III b (relativistic quantum field theory)
Physics 633, Quantum III a (advanced quantum mechanics)
Physics 627, Elementary Particle Physics
Physics 624, Quantum II (second graduate course in quantum mechanics)
Physics 606, Quantum I (first graduate course in quantum mechanics)
Physics 617, Solid State Physics
Physics 607, Statistical Mechanics
Physics 603, Classical Electrodynamics
Physics 601, Classical Mechanics
Physics 489, Modern Astrophysics
Physics 489, Renaissance Astronomy (in Italy)
Lib. Arts 489. University Scholars Mentor Group
Physics 424, Solid State Physics
Physics 408, Thermodynamics and Statistical Mechanics
Physics 401, Computational Physics
Physics 314, Survey of Astronomy
Physics 306, Basic Astronomy
Physics 304, Advanced Electricity and Magnetism
Physics 302, Advanced Mechanics

Physics 222, Modern Physics for Engineers
Physics 221, Optics and Thermal Physics
Physics 208, Electricity, Magnetism, and Optics
Physics 218, Mechanics
Physics 202, College Physics
Physics 201, College Physics
Physics 101, Topics in Contemporary Physics

Past and Present Service on Some Committees

College of Science Tenure and Promotion Advisory Committee (2010-)
Promotions, Tenure, and Appointments Committee (Chair, 2008 & 2009)
Performance Evaluation Committee (Chair, 2008)
Hyer Award Committee, Texas Section of American Physical Society (Chair, 2008)
New Mitchell Physics Buildings Committee (appointed)
Executive Committee (elected)
College of Science Faculty Advisory Committee (Chair)
Executive Committee, Texas Section of American Physical Society (elected)
Astronomy Committee (Chair)
Distinguished Lecture Series and Colloquium Committee (Chair)
Awards Committee (Chair)
Department Brochure Committee (Chair)
Ph. D. Qualifying Exam Committee (Chair)
Search Committees in Astronomy, High Energy Experiment and Theory, Condensed Matter Experiment and Theory, Quantum Optics Experiment and Theory, Nuclear Experiment
TAMU Sigma Xi Awards Committee (Chair)
Faculty Senate Research Committee (elected)
College of Science alternate for Council of Principal Investigators (elected)
University Tenure Mediation Committee (elected)
University Faculty Development Leave Committee (elected)
University Professor Emeritus Committee (appointed)

Publications

1. R. E. Allen and F. W. de Wette, "Calculation of Dynamical Surface Properties of Noble Gas Crystals. I. The Quasiharmonic Approximation," *Phys. Rev.* 179, 873 (1969).
2. R. E. Allen, F. W. de Wette, and A. Rahman, "Calculation of Dynamical Surface Properties of Noble Gas Crystals. II. Molecular Dynamics," *Phys. Rev.* 179, 887 (1969).
3. F. W. de Wette and R. E. Allen, "Calculation of Mean-Square Amplitudes and Thermal Diffuse Scattering for Surfaces of Noble Gas Crystals," in *The Structure and Chemistry of Solid Surfaces*, ed. by G. A. Somorjai (John Wiley & Sons, Inc., N.Y., 1969), p. 18-1.
4. F. W. de Wette, R. E. Allen, D. S. Hughes, and A. Rahman, "Crystallization with a Lennard-Jones Potential: A Computer Experiment," *Phys. Lett.* 29A, 548 (1969).
5. F. W. de Wette and R. E. Allen, "Structure and Dynamics of Very Thin Films," *Phys. Rev.* 187, 878 (1969).

6. R. E. Allen and F. W. de Wette, "Phonon Frequencies and Superconductivity in Very Thin Films," *Phys. Rev.* 187, 883 (1969).
7. R. E. Allen and F. W. de Wette, "Mean-Square Amplitudes of Vibration at a Surface," *Phys. Rev.* 188, 1320 (1969).
8. R. E. Allen and F. W. de Wette, "Surface Thermodynamic Functions for Noble Gas Crystals," *J. Chem. Phys.* 51, 4820 (1969).
9. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Surface Modes of Vibration in Monatomic Crystals," *Phys. Rev. Lett.* 23, 1285 (1969).
10. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Surface Modes Within the Bulk Continua," *Phys. Rev. Lett.* 24, 301 (1970).
11. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Lattice Vibrations and Superconductivity in Layered Structures," *Phys. Rev. B* 2, 2570 (1970).
12. T. S. Chen, R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Surface Modes of Vibration in an Ionic Crystal," *Solid State Commun.* 8, 2105 (1970).
13. G. P. Alldredge, R. E. Allen, and F. W. de Wette "Character of Surface and Pseudo-Surface Waves in a Discrete Lattice," *Journal of Acoustical Society of America* 49, 1453 (1971).
14. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Thermodynamic Functions and Debye-Waller Factor for Adsorbed Particles," *J. Chem. Phys.* 54, 2605 (1971).
15. R. E. Allen, "Comment on the Scattering-Matrix Method for Determining Defect Modes," *Phys. Rev. B* 3, 3580 (1971).
16. R. E. Allen, "Remarks on the Everett-Wheeler Interpretation of Quantum Mechanics," *Am. J. Phys.* 39, 842 (1971).
17. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Studies of Vibrational Surface Modes. I. General Formulation," *Phys. Rev. B* 4, 1648 (1971).
18. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Studies of Vibrational Surface Modes. II. Monatomic fcc Crystals," *Phys. Rev. B* 4, 1661 (1971).
19. G. P. Alldredge, R. E. Allen, and F. W. de Wette, "Studies of Vibrational Surface Modes. III. Effect of an Absorbed Layer," *Phys. Rev. B* 4, 1682 (1971).
20. T. S. Chen, G. P. Alldredge, F. W. de Wette, and R. E. Allen, "Surface Thermodynamic Functions for NaCl," *J. Chem. Phys.* 55, 3121 (1971).
21. T. S. Chen, G. P. Alldredge, F. W. de Wette, and R. E. Allen, "Surface and Pseudo-Surface Modes in Ionic Crystals," *Phys. Rev. Lett.* 26, 1543 (1971).
22. F. W. de Wette, G. P. Alldredge, T. S. Chen, and R. E. Allen, "Lattice-Dynamical Studies of Surface Modes," *Phonons*, edited by M. A. Nusimovici (Flammarion, Paris, 1971), p. 395.

23. F. W. de Wette and R. E. Allen, "Anharmonicity at Surfaces," Phonons, edited by M. A. Nusimovici (Flammarion, Paris, 1971), p. 488.
24. R. E. Allen, "Thermal Expansion at a Surface," J. Vac. Sci. Technol. 9, 934 (1972).
25. V. E. Kenner, R. E. Allen, and W. M. Saslow, "Screening of External Fields and Distribution of Excess Charge Near a Metal Surface," Phys. Lett. 38A, 255 (1972).
26. T. S. Chen, G. P. Alldredge, F. W. de Wette, and R. E. Allen, "Surface Mean-Square Amplitudes of Vibration for NaCl," Phys. Rev. B 6, 623 (1972).
27. T. S. Chen, G. P. Alldredge, F. W. de Wette, and R. E. Allen, "Surface Modes of Vibration in the Rigid-Ion Model of NaCl," Phys. Rev. B 6, 627 (1972).
28. R. E. Allen, G. P. Alldredge, and F. W. de Wette, "Surface Vibrations in a Model hcp Crystal," Phys. Rev. B 6, 632 (1972).
29. L. L. Kesmodel, F. W. de Wette, and R. E. Allen, "One-Photon Thermal-Diffuse Scattering from Xe(111)," Solid State Commun. 11, 145 (1972).
30. V. E. Kenner and R. E. Allen, "High-T Coefficients of Thermal Expansion Near a Surface," Phys. Lett. 39A, 245 (1972).
31. L. L. Kesmodel, F. W. de Wette, and R. E. Allen, "Thermal Diffuse Scattering of Low-Energy Electrons from Xe," Phys. Rev. B 7, 802 (1973).
32. D. G. Naugle, J. W. Baker, and R. E. Allen, "Evidence for a Surface-Phonon Contribution to Thin-Film Superconductivity: Depression of T_c by Noble Gas Overlayers," Phys. Rev. B 7, 3028 (1973).
33. V. E. Kenner, R. E. Allen, and W. M. Saslow, "Screening and Tunneling at Metal Surfaces," Phys. Rev. B 8, 576 (1973).
34. V. E. Kenner and R. E. Allen, "Calculations of Surface Thermal Expansion," Phys. Rev. B 8, 2916 (1973).
35. V. E. Kenner and R. E. Allen, "Surface Thermal Expansion in Noble Gas Solids," Low Temperature Physics-LT 13, edited by K. D. Timmerhaus, W. J. O'Sullivan, and E. F. Hammel (Plenum Press, N.Y., 1974), Vol. 2, p. 245.
36. D. G. Naugle, J. W. Baker, and R. E. Allen, "Modification of Surface Mode Frequencies and Superconductivity T_c by Adsorbed Layers," Low Temperature Physics-LT 13, edited by K. D. Timmerhaus, W. J. O'Sullivan, and E. F. Hammel (Plenum Press, N.Y., 1974), Vol. 3, p. 537.
37. C. Arnett, W. R. Lawrence, and R. E. Allen, "Temperature Dependence and Stability of Surface Structures," Phys. Rev. B 10, 4184 (1974).
38. V. E. Kenner and R. E. Allen, "Surface Contribution to Electronic Density of States, Heat Capacity, and Spin Susceptibility," Phys. Rev. B 11, 2858 (1975).

39. R. E. Allen, "Surface Contribution to a General Physical Quantity," *Solid State Commun.* 16, 1143 (1975).
40. R. E. Allen, "Surface Correction to Landau Diamagnetism," *Phys. Rev. B* 12, 2869 (1975).
41. R. E. Allen, "Superconducting Transition Temperature and Other Properties of Thin Metallic Films," *Phys. Rev. B* 12, 3650 (1975).
42. D. G. Naugle and R. E. Allen, "Simple Model for Surface Specific Heats," *J. Chem. Phys.* 63, 991 (1975).
43. W. R. Lawrence and R. E. Allen, "Specific Heats and Adsorption for Noble Gas Overlayers," *Low Temperature Physics-LT 14*, ed. M. Krusius and M. Vuorio (North Holland, N.Y., 1975), Vol. 4, p. 441.
44. R. E. Allen, "Structural Phase Transitions in Solids with Applied Stresses and Fields, and Effect of Isotopic Impurities on the Free Energy," *J. Chem. Phys.* 64, 552 (1976).
45. R. W. Hardy and R. E. Allen, "Surface States in Li and Na," *Solid State Commun.* 19, 1 (1976).
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