

Sidney Perkowitz

Curriculum vitae

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PERSONAL

Born: Brooklyn, New York. Married, one child.

EDUCATION

University of Pennsylvania, Philadelphia, Pennsylvania
Ph. D. in solid state physics, June, 1967 (Frazier Fellowship)
Thesis adviser: Elias Burstein
M. S. in physics, June, 1962
Polytechnic University, New York
B. S. in physics, summa cum laude, June, 1960

PROFESSIONAL INTERESTS

Research: optical properties of condensed matter including semiconductors and superconductors, and biological materials; infrared, Raman, synchrotron, and picosecond spectroscopy; characterization of technological materials.

Writing, teaching, and lecturing: physics and science for nonscientists; science writing and science journalism; science and art; science in film and the theater.

PROFESSIONAL EXPERIENCE

2011 – date: Charles Howard Candler Professor of Physics, Emeritus, Emory University

1987 - 2011: Charles Howard Candler Professor of Physics, Emory University, Atlanta. (1979, Professor; 1974, Associate Professor; 1969, Assistant Professor),

1990 - 1991: Visiting Senior Scientist, Southeastern Universities Research Association, Washington, DC

1989 - 2000: Adjunct Professor of Liberal Arts, Atlanta College of Art

1983 - 84: Visiting Professor of Physics, University of California at Santa Barbara

1966 - 69: Solid State Physicist, GT & E Laboratories, Bayside, NY

ADMINISTRATIVE EXPERIENCE

Director, Emory University Raman Scattering Facility, 1984 - 1999
 Chairman, Emory University Physics Department, 1980 - 83
 Codirector, Emory University Center for Instructional Computing, 1979 - 82
 President, Society for Literature, Science and the Arts, 1997 - 1998.

RESEARCH, TEACHING AND PROFESSIONAL DEVELOPMENT SUPPORT

Grants and contracts from the following sources, 1969 – 2001.

Alfred P. Sloan Foundation, Atomic Energy Commission, Department of Defense/TRW Corp., Department of Energy, Ford Foundation, Korea Institute of Science and Technology, Lockheed Corporation, National Science Foundation, National Synchrotron Light Source, NIH Biomedical Sciences Program, North Atlanta Treaty Organization, Oak Ridge National Laboratory, Office of Naval Research, Research Corporation, Sandia Laboratories, and others.

Emory Research Committee; Emory Teaching Fund.

CONSULTING AND PROFESSIONAL ACTIVITIES

Consultant, Encyclopedia Britannica; American Physical Society; National Institute of Standards and Technology; Naval Research Laboratory; Lockheed Corp.; NRC Canada; Georgia Tech Research Institute; Santa Barbara Research Center; Georgia State University; National Geographic Magazine; Fernbank and SciTrek Museums. American Institute of Physics Science Writing Award Committee; President, Society for Literature and Science; Program Committee, International Conference Series on Infrared and Millimeter Waves; Editorial panel, *Int. J. Infrared Millimeter Waves*; Advisory Boards, Smithsonian Institution, NAS Science and Entertainment Exchange, Imagine Science Film Festival. Member, AAAS CoSTEP Committee.

Referee, NSF, DoE, ARO, NIST, Sciences and Engineering Research Council of Canada, Research Corporation, International Science Foundation, MacArthur Foundation, Princeton University Press, Cambridge University Press, *Leonardo*, *Phys. Rev.*, *Phys. Rev. Lett.*, *J. Opt. Soc. America*, *Chem. Phys.*, *Optics Lett.*, *J. Vac. Sci. Technol.*, *Appl. Optics*, *J. Phys. Chem. Solids*, *J. Appl. Phys.*, *Appl. Phys. Lett.*, *Opt. Engineering*, *J. Luminescence*, *Nature*, *Mod. Phys. Lett.*

TEACHING EXPERIENCE

Undergraduate: introductory physics, mechanics, mathematical physics, quantum mechanics, applied solid state physics: science writing; physics for artists; astronomy; freshman seminar; science in film and in the theater; senior honors theses.

Graduate: solid state physics and applied solid state physics; special topics in condensed matter physics; master's theses; doctoral dissertations.

HONORS, PROFESSIONAL SOCIETIES, AND LISTINGS

Fellow, American Association for the Advancement of Science; Phi Beta Kappa.

Member, American Association for the Advancement of Science, American Physical Society; Society for Literature, Science and the Arts, National Association of Science Writers. Listed, *Who's Who in America; American Men and Women of Science; Who's Who in Technology; Who's Who in Science and Engineering; Optical Science and Engineering; Frontiers of Science and Technology; Outstanding Scientists of the 20th Century; Dictionary of International Biography; Contemporary Authors.*

LECTURES, SEMINARS, AND MEDIA APPEARANCES

Selected items from over 500 presentations.

Keynote speaker, “Robotic, Human, and Hybrid Cognition,” Workshop on Cognitive Systems and Human Cognitive Models. Santa Fe, NM, July, 2005.

Speaker, “Inspirational Literacy Through Science Books and Films,” American Library Association, New Orleans, LA, June 26, 2006.

Panel moderator, “Prodigies, Nobelists and Penguins: Science and Stereotypes in the Movies.” Tribeca Film Festival, New York, May 5, 2007.
<http://www.tribecafilminstitute.org/index.php?c=Panels&s=sloan>

Radio interview, “Big Screen Science,” NPR/Living on Earth, week of Jan. 25, 2008.
<http://www.loe.org/shows/segments.htm?programID=08-P13-00004&segmentID=7>

Invited speaker, “Scared Silly: Mad Scientists in the Movies,” Chicago Humanities Festival, Nov. 15, 2009.

Invited speaker, “Hollywood Science: Good for Hollywood, Bad for Science?” Annual meeting of the AAAS, San Diego, CA, Feb. 19, 2010.
http://www.youtube.com/watch?v=h_i5pmyVxb8, May 2010.

Interview, “Newshour: Artificial Life and Science Fiction,” BBC World Service, May 21, 2010.

Invited talk, “Science in Film,” CUNY Graduate Center Conference on Science and the Performing Arts, New York, NY, Oct 29 – 30, 2010.

Appearances: Microsoft Corp.; American Museum of Natural History; Los Alamos, Oak Ridge, and Lawrence Livermore Labs.; NYU Inst. for the Humanities; Goddard Space Flight Ctr.; Simon Fraser U. and NRC, Canada; U. Stuttgart, Germany; Virginia Polytech.; U. C. Santa Barbara and Irvine; Polytechnic U.; Albany U., SUNY; Santa Barbara Research Center; The Metallurgical Society; Florida State U.; U. Maryland and Cincinnati; DuPont Corp.; Shanghai Inst. Tech. Physics and Qinghua U., Beijing, PRC; Soc. for Optical Engineering; Korea Inst. Science and Technology, Seoul; Goethe Institute, Atlanta; American Geophysical Union; NPR; BBC; others.

PUBLISHED RESEARCH WORKS

MONOGRAPHS

Optical Characterization of Semiconductors: Infrared, Raman, and Photoluminescence Spectroscopy (Academic Press, London, 1993).

Optical Characterization in Microelectronics Manufacturing, with D. G. Seiler and W. M. Duncan (Diane Publishing, 1994).

Survey of optical characterization methods for materials, processing, and manufacturing in the semiconductor industry, with W. Murray Bullis and D.G. Seiler (Gaithersburg, MD: U.S. Dept. of Commerce, Technology Administration, National Institute of Standards and Technology, 1995).

EDITED WORKS

Digest of the Second International Conference on Submillimeter Waves, San Juan, 1976 (IEEE, New York, 1976).

Digest of the Fourth International Conference on Infrared and Millimeter Waves, Miami Beach, 1979 (IEEE, New York, 1979).

Digest of the 1996 Conference of the Society for Literature and Science, Atlanta, Georgia.

RESEARCH AND REVIEW PAPERS

1. E. Burstein, S. Perkowitz, and M. H. Brodsky, "The Dielectric Properties of the Cubic IV-VI Compound Semiconductors," *J. Phys. Radium* **29**, (Supp. 11-12), C4-8 (1968).
2. S. Perkowitz, "Mobility and Infrared Absorption in n-Type GaAs," *J. Appl. Phys.* **40**, 3751 (1969).
3. S. Perkowitz, "Local and Nonlocal Magnetoplasma Effects in n-Type PbTe," *Phys. Rev.* **182**, 828 (1969).
4. J. F. Black, E. Lanning, and S. Perkowitz, "Infrared Techniques for Semiconductor Characterization," *Infrared Phys.* **10**, 125 (1970).
5. S. Perkowitz, "Far Infrared Free-Carrier Absorption in n-Type GaAs," *J. Phys. Chem. Solids* **32**, 2267 (1971).
6. S. Perkowitz, R. K. Murty-Gutta, and A. K. Garrison, "Far Infrared Absorption in ZnO," *Solid State Commun.* **9**, 2251 (1971).

7. S. Perkowitz and J. Breecher, "Characterization of GaAs by Far Infrared Reflectivity," *Infrared Phys.* **13**, 321 (1973).
8. S. Perkowitz and R. H. Thorland, "Far Infrared Study of Free Carriers and the Plasmon-Phonon Interaction in CdTe," *Phys. Rev. B* **9**, 545 (1974).
9. S. Perkowitz and J. Breecher, "Far Infrared Reflectivity and Electron Scattering in GaAs," in *Digest of the First International Conference on Submillimeter Waves, Atlanta, 1974* (IEEE Pub. No. 74 CH 0856-5 (MTT)), p. 193.
10. S. Perkowitz and R. H. Thorland, "Generalized Dielectric Function and the Plasmon-Phonon Coupling in GaAs and CdTe," *Solid State Commun.* **16**, 1093 (1975).
11. S. Perkowitz, "Free Carriers, Coupled Modes and the Generalized Dielectric Function in PbTe," *Phys. Rev. B* **12**, 3210 (1975).
12. S. Perkowitz, M. Merlin, and L. R. Testardi, "Far Infrared Reflectivity of V_3Si ," *Solid State Commun.* **18**, 1059 (1976).
13. B. L. Bean and S. Perkowitz, "Far Infrared Transmission Measurements with an Optically Pumped FIR Laser," *Appl. Optics* **15**, 2617 (1976).
14. J. J. Gallagher, M. D. Blue, B. L. Bean, and S. Perkowitz, "Tabulation of FIR Lines Available from Optically Pumped Lasers and Application to Atmospheric Transmission," *Infrared Phys.* **17**, 43 (1977).
15. S. Perkowitz and B. L. Bean, "Far Infrared Absorption of Chlorophyll in Solution," *J. Chem. Phys.* **66**, 2231 (1977).
16. S. W. McKnight, R. H. Thorland, and S. Perkowitz, "Far Infrared Behavior of Thin Film High Temperature Superconductors," *Thin Solid Films* **41**, L61 (1977).
17. M. D. Blue and S. Perkowitz, "Reflectivity of Common Materials in the Submillimeter Region," *IEEE Trans. Microwave Theory and Tech.* **MTT-25**, 491 (1977).
18. B. L. Bean and S. Perkowitz, "Submillimeter-Far Infrared Spectroscopy in the Liquid and Solid States with a Tunable Optically Pumped Laser," *J. Opt. Soc. Am.* **67**, 911 (1977).
19. P. M. Amirtharaj, B. L. Bean, and S. Perkowitz, "Far Infrared Studies in Epitaxial Films of III-V and IV-VI Semiconductors," *J. Opt. Soc. Am.* **67**, 939 (1977).

20. B. L. Bean and S. Perkowitz, "Complete Frequency Coverage for Submillimeter Laser Spectroscopy with Optically Pumped CH_3OH , CH_3OD , CD_3OD , and CH_2CF_2 ," *Optics Lett.* **1**, 202 (1977).
21. S. W. McKnight, P. M. Amirtharaj, and S. Perkowitz, "Far Infrared Studies of Lattice and Free Carrier Effects in $\text{Hg}_{1-x}\text{Mn}_x\text{Te}$," *Solid State Commun.* **25**, 357 (1978).
22. S. W. McKnight, P. M. Amirtharaj, and S. Perkowitz, "Far Infrared Interband Absorption in $\text{Hg}_{1-x}\text{Mn}_x\text{Te}$," *Infrared Phys.* **18**, 919 (1978).
23. J. R. Grammer, W. H. Alff, M. D. Blue, and S. Perkowitz, "Far-Infrared Properties of Baffle Coating Materials," in *Thermophysics and Thermal Control* (Volume 66 of *Progress in Astronautics and Aeronautics*), R. Voskanta, Ed. (American Institute of Aeronautics and Astronautics, New York, 1978 (c. 1979)], 39-46.) (Reprinted, *Cryogenic Optical Systems*, G. R. Pruitt, Ed. (SPIE Optical Engineering Press, Bellingham, 1994)).
24. J. R. Grammer, L. J. Bailin, M. D. Blue, and S. Perkowitz, "Absorbing Coatings for the Far Infrared," in *Radiation Scattering in Optical Systems* (Proceedings SPIE 257, Bellingham, WA, 1980), 192-195. (Reprinted, *Cryogenic Optical Systems*, G. R. Pruitt, Ed. (SPIE Optical Engineering Press, Bellingham, 1994)).
25. S. W. McKnight, B. L. Bean, and S. Perkowitz, "Far Infrared Laser Spectroscopy of V_3Si ," *Phys. Rev. B* **19**, 1437 (1979).
26. S. W. McKnight, S. Perkowitz, D. B. Tanner, and L. R. Testardi, "Far Infrared Measurements of Holstein Processes and Low Energy $\alpha^2F(\omega)$ Structure in V_3Si ," *Phys. Rev. B* **19**, 5689 (1979).
27. S. Perkowitz, R. L. Henry, and D. B. Tanner, "Comparison of Fourier and Laser Spectroscopy in the Far-Infrared-Submillimeter Range," *Applied Opt.* **18**, 2349 (1979).
28. O. A. Simpson, B. L. Bean, and S. Perkowitz, "Far Infrared Optical Constants of Liquid Water Measured with an Optically Pumped Laser," *J. Opt. Soc. Am.* **69**, 1723 (1979).
29. P. M. Amirtharaj and S. Perkowitz, "Far Infrared Spatial Probe of Heteroepitaxial Indium Arsenide," *Thin Solid Films* **62**, 357 (1979).
30. B. L. Bean and S. Perkowitz, "Far Infrared/Submillimeter Spectroscopy with an Optically Pumped Laser," in *Infrared and Millimeter Waves: Volume 2*, K. J. Button, Editor, (Academic Press, New York, 1979), 273-298.
31. G. Busse and S. Perkowitz, "Piezoelectric Transducers as Monitors for Optically Pumped FIR Lasers," *Int. J. Infrared and Mm. Waves* **1**, 139 (1980).

32. O. A. Simpson, R. A. Bohlander, J. J. Gallagher, and S. Perkowitz, "Measurements of Far-Infrared Water Vapor Absorption between Lines with an Optically Pumped Laser," *J. Phys. Chem.* **84**, 1753 (1980).
33. P. M. Amirtharaj, G. D. Holah, and S. Perkowitz, "Far Infrared Spectroscopic Study of $\text{In}_{1-x}\text{Ga}_x\text{As}_y\text{P}_{1-y}$," *Phys. Rev. B* **21**, 5656 (1980).
34. S. Perkowitz and G. Busse, "Far Infrared Optoacoustic Material Probing and Imaging," *Optics Lett.* **5**, 228 (1980).
35. R. C. DuVarney and S. Perkowitz, "Microcomputer Control and Data Analysis for a Far Infrared Fourier Spectrometer," *Int. J. IR Mm. Waves* **2**, 587 (1981).
36. G. D. Holah and S. Perkowitz, "Far Infrared Laser Thermal Spectroscopy of Superconductors," *Int. J. IR Mm. Waves* **2**, 581 (1981).
37. R. A. Bohlander, R. J. Emery, D. T. Llewellyn-Jones, G. G. Gimmestad, H. A. Gebbie, O. A. Simpson, J. J. Gallagher, and S. Perkowitz, "Excess Absorption by Water Vapor and Comparison with Theoretical Dimer Absorption," in *Atmospheric Water Vapor*, A. Deepak, T. D. Wilkerson, and L. H. Ruhuke, Editors (Academic Press, New York, 1981), 241-253.
38. G. D. Holah, A. A. Schenk, S. Perkowitz, and R. D. Tomlinson, "Infrared Reflectivity of p-type CuInTe_2 ," *Phys. Rev. B* **23**, 6288 (1981).
39. D. Karecki, R. E. Pena, and S. Perkowitz, "Far Infrared Transmission of Superconducting Homogeneous NbN Films: Scattering Time Effects," *Phys. Rev. B* **25**, 1565 (1982).
40. S. Perkowitz, "Laser Thermal Spectroscopy of Highly Granular NbN," *Phys. Rev. B (Rapid Communications)* **25**, 3420 (1982).
41. D. R. Karecki, G. L. Carr, S. Perkowitz, D. U. Gubser, and S. A. Wolf, "Far Infrared Conductivity and Anomalous Below-gap Absorption in Superconducting Granular NbN," *Phys. Rev. B* **27**, 5460 (1983).
42. S. Perkowitz, "Submillimeter Solid State Physics," in *Infrared and Millimeter Waves: Vol. 8*, K. J. Button, Editor (Academic Press, New York, 1983), 71-125.
43. G. L. Carr, D. R. Karecki, and S. Perkowitz, "Submillimeter Detector Operation of Granular Superconducting NbN Films," *J. Appl. Phys.* **55**, 3892 (1984).

44. S. Perkowitz, Comments on "Effect of Polar Vibrations of the Crystal Lattice on the Plasma Frequency of Heavily-Doped Semiconductors and Correction for Calculation of Carrier Concentration," *Infrared Physics* **24**, 423 (1984).
45. B. Mitrovic and S. Perkowitz, "Role of Varying Electronic Density of States in the Far Infrared Behavior of V_3Si ," *Phys. Rev. B* **30**, 6749 (1984).
46. B. Subramaniam and S. Perkowitz, "Low Frequency Multiphonon Absorption in $InP:Fe$," *Solid State Commun.* **53**, 473 (1985).
47. S. Perkowitz, G. L. Carr, B. Subramaniam, and B. Mitrovic, "Far Infrared Determination of Scattering Behavior and Plasma Frequency in V_3Si , Nb_3Ge and Nb ," *Phys. Rev. B* **32**, 153 (1985).
48. C. E. Jones, T. N. Casselman, J. P. Faurie, S. Perkowitz, and J. Schulman, "Infrared Properties and Bandgaps of $HgTe/CdTe$ Superlattices," *Appl. Phys. Lett.* **47**, 140 (1985).
49. W. B. Cook and S. Perkowitz, "Temperature Dependence of the Far Infrared Ordinary-Ray Optical Constants of Sapphire," *Appl. Optics* **24**, 1773 (1985).
50. S. Perkowitz, "Far Infrared Characterization of $Hg_{1-x}Cd_xTe$ and Related Electronic Materials," *J. Electronic Materials* **14**, 551 (1985).
51. G. L. Carr, S. Perkowitz, and D. B. Tanner, "Far Infrared Properties of Inhomogeneous Materials," in *Infrared and Millimeter Waves: Vol. 13*, K. J. Button, Editor (Academic Press, New York, 1985), 171 - 263.
52. S. Perkowitz and G. Busse, "Infrared Optoacoustics," in *Infrared and Millimeter Waves: Vol. 16*, K. J. Button, Editor (Academic Press, New York, 1986), 1 - 33.
53. W. H. Cook and S. Perkowitz, "Far Infrared Properties and Characterization of Superconducting Nb_3Ge ," *Phys. Rev. B* **33**, 4557 (1986).
54. C. E. Jones, M. E. Boyd, W. H. Konkel, S. Perkowitz and R. Braunstein, "Noncontact Electrical Characterization of Epitaxial $Hg_{1-x}Cd_xTe$," *J. Vac. Sci. Technol. A* **4**, 2056 (1986).
55. S. Perkowitz, D. Rajavel, I. K. Sou, J. Reno, J. P. Faurie, C. E. Jones, T. Casselman, K. A. Harris, J. W. Cook, and J. F. Schetzina, "Far Infrared Study of Alloying in $HgTe-CdTe$ Superlattices," *Appl. Phys. Lett.* **49**, 806 (1986).
56. S. Perkowitz, "Far Infrared Spectroscopy of $Hg_{1-x}Cd_xTe$ and Related Materials," in *Far-Infrared Science and Technology*, J. R. Izatt, Editor (Proceedings SPIE 666, Bellingham, 1986), 120-125.

57. S. Perkowitz, R. Sudharsanan, and S. S. Yom, "Far Infrared Analysis of Alloy Structure in HgTe-CdTe Superlattices," *J. Vac. Sci. Technol. A* **5**, 3157 (1987).
58. S. Perkowitz, R. Sudharsanan, S. S. Yom and T. J. Drummond, "AlAs Phonon Parameters and Heterostructure Characterization," *Solid State Commun.* **62**, 645 (1987).
59. S. Perkowitz, S. S. Yom, R. N. Bicknell, and J. F. Schetzina, "Ultraviolet-Excited Photoluminescence and Raman Scattering in $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ -CdTe Microstructures," *Appl. Phys. Lett.* **50**, 1001 (1987).
60. S. Perkowitz, G. L. Carr, B. Lou, S. S. Yom, R. Sudharsanan, and D. S. Ginley, "Phonon, Plasmon, and Gap Behavior in Superconducting $\text{Y}_1\text{Ba}_2\text{Cu}_3\text{O}_7$ and $\text{Gd}_{1.5}\text{Ba}_{1.5}\text{Cu}_3\text{O}_7$," *Solid State Commun.* **64**, 721 (1987).
61. S. Perkowitz, R. Sudharsanan, K. A. Harris, J. W. Cook, Jr., J. F. Schetzina and J. N. Schulman, "Effective Mass in an n-Type HgTe-CdTe Superlattice," *Phys. Rev. B* **36**, 9290 (1987).
62. R. Sudharsanan, S. Perkowitz, S. S. Yom and T. J. Drummond, "Far Infrared Reflectance Spectroscopy of AlAs-GaAs Microstructures," in *Modern Optical Characterization Techniques for Semiconductors and Semiconductor Devices*, O. H. Glembocki, F. H. Pollak and J. J. Soong, Editors (Proceedings SPIE 794, Bellingham, 1987), 197-201.
63. I. Bozovic, D. Mitzi, M. Beasley, A. Kapitulnik, T. Geballe, S. Perkowitz, G. L. Carr, B. Lou, R. Sudharsanan, and S. S. Yom, "Vibrational Spectra and lattice Instabilities in the High- T_c Superconductors $\text{YBa}_2\text{Cu}_3\text{O}_7$ and $\text{GdBa}_2\text{Cu}_3\text{O}_7$," *Phys. Rev. B (Rapid Communications)* **36**, 4000 (1987).
64. S. S. Yom and S. Perkowitz, "Picosecond Time-Resolved Photoluminescence from $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ -CdTe Microstructures," in *Ultrafast Lasers Probe Phenomena in Bulk and Microstructure Semiconductors*, R. A. Alfano, Editor (Proceedings SPIE 793, Bellingham, 1987), 25-28.
65. D. Rajavel and S. Perkowitz, "Compositional Dependence of Infrared Phonon Parameters for $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$," *J. Electronic Materials* **17**, 25 (1988).
66. S. S. Yom, S. Perkowitz, P. M. Amirtharaj and J. J. Kennedy, "Picosecond Photoluminescence from Bound Excitons in $\text{Cd}_{1-x}\text{Zn}_x\text{Te}$," *Solid State Commun.* **65**, 1055 (1988).
67. R. Sudharsanan, S. Perkowitz, B. Lou, B. R. Caldwell and G. L. Carr, "Infrared Reflectance of Rare Earth-Barium-Copper Oxide Superconductors," in *High-*

Temperature Superconducting Materials, W. H. Hatfield and J. H. Miller, Editors (Marcel Dekker, New York, 1988), 283-288.

68. J. M. Wrobel, B. P. Clayman, P. Becla, R. Sudharsanan, and S. Perkowitz, "Lattice Vibrations of Cadmium Manganese Telluride Alloys," *J. Appl. Phys.* **64**, 310 (1988).

69. B. Lou, S. Perkowitz, and R. Sudharsanan, "Anisotropy and Infrared Response of the AlAs-GaAs Superlattice," *Phys. Rev. B (Rapid Communications)* **38**, 2212 (1988). (Erratum: *Phys. Rev.* **39**, 1387 (1989)).

70. S. Perkowitz, R. Sudharsanan, J. M. Wrobel, B. P. Clayman, and P. Becla, "Effective Charge and Ionicity in $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$," *Phys. Rev. B* **38**, 5565 (1988).

71. R. Sudharsanan, S. Perkowitz, B. Lou, T. J. Drummond, and B. L. Doyle, "Far-Infrared Characterization of AlAs-GaAs Superlattice Structure," *Superlattices and Microstructures* **4**, 657 (1988).

72. S. Perkowitz and S. S. Yom, "Picosecond Single-Photon Counting Spectroscopy of $\text{Cd}_{1-x}\text{Zn}_x\text{Te}$ and $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ -CdTe," in *Ultrafast Lasers Probe Phenomena in Bulk and Microstructure Semiconductors II*, R. A. Alfano, Editor (Proceedings SPIE 942, Bellingham, 1988), 246.

73. Z.-C. Feng, R. Sudharsanan, S. Perkowitz, A. Erbil, K. T. Pollard, and A. Rohatgi, "Raman Scattering Characterization of High-Quality $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ Films Grown by Metalorganic Chemical Vapor Deposition," *J. Appl. Phys.* **64**, 686 (1988).

74. Z.-C. Feng, S. Perkowitz, J. M. Wrobel, and J. J. Dubowski, "Outgoing Multiphonon Resonant Raman Scattering and Luminescence Near the $E_0 + \Delta_0$ Gap in Epitaxial CdTe Films," *Physical Review (Rapid Communications)* **39**, 12997 (1989).

75. R. Sudharsanan, Z. C. Feng, S. Perkowitz, A. Rohatgi, K. T. Pollard, and A. Erbil, "Characterization of MOCVD-Grown CdMnTe Films by Infrared Spectroscopy," *J. Electronic Materials* **18**, 455 (1989).

76. Z. C. Feng, S. Perkowitz, R. Sudharsanan, A. Erbil, K. T. Pollard, A. Rohatgi, J. L. Bradshaw and W. J. Choyke, "Photoluminescence of $\text{Cd}_{1-x}\text{Mn}_x\text{Te}$ Films Grown by Metalorganic Chemical Vapor Deposition," *J. Appl. Phys.* **66**, 1711 (1989).

77. S. Perkowitz, B. Lou, L. S. Kim, O. K. Wu, and J. N. Schulman, "Far-Infrared Determination of Effective Mass and Valence-Band Offset in the HgTe-CdTe Superlattice," *Phys. Rev. B* **40**, 5613 (1989).

78. S. Perkowitz, L. S. Kim, O. K. Wu, and J. N. Schulman, "Far Infrared Analysis of the HgTe-CdTe Superlattice," in *Future Infrared Detector Materials*, J. W. Baars and R. E. Longshore, editors (Proceedings SPIE 1106, Bellingham, 1989), 190.

79. T. R. Yang, S. Perkowitz, G. L. Carr, R. C. Budhani, G. P. Williams, and C. J. Hirschmugl, "Infrared Properties of Single Crystal MgO, a Substrate for High Temperature Superconducting Films," *Applied Optics* **29**, 332 (1990).
80. L. S. Kim, S. Perkowitz, O. K. Wu, and J. N. Schulman, "Far-Infrared Band and Characterisation Measurements in the HgTe-CdTe Superlattice," *Semicond. Sci. Technol.* **5**, S107 (1990).
81. G. P. Williams, R. Budhani, C. J. Hirschmugl, G. L. Carr, S. Perkowitz, B. Lou, and T. R. Yang, "Infrared Synchrotron Radiation Transmission Spectroscopy of $\text{YBa}_2\text{Cu}_3\text{O}_{7-d}$ in the Gap and Supercurrent Regions," *Physical Review B* **41**, 4752 (1990).
82. Z. C. Feng, S. Perkowitz, and O. Wu, "Raman and Resonant Raman Scattering from the HgTe/CdTe Superlattice," *Phys. Rev. B* **41**, 6057 (1990).
83. S. Perkowitz, L. Kim, Z. Feng, and P. Becla, "Optical Phonons in $\text{Cd}_{1-x}\text{Zn}_x\text{Te}$," *Phys. Rev.* **42**, 1455 (1990).
84. Z. C. Feng, S. Perkowitz, T. S. Rao, and J. B. Webb, "Raman Characterization of InSb/GaAs Grown by Metalorganic Magnetron Sputtering," in *Materials Research Society Symposium Proceedings Vol. 160: Layered Structures: Heteroepitaxy, Superlattices, Strain, and Metastability*, 739 (1990).
85. U. Strom, J. C. Culbertson, S. A. Wolf, S. Perkowitz, and G. L. Carr, "Far Infrared Photoresponse of Quasi-Two-Dimensional Granular NbN/BN Films," *Phys. Rev. B* **42**, 4059 (1990).
86. Z. C. Feng, S. Perkowitz, T. S. Rao, and J. B. Webb, "Resonance Raman Scattering from Epitaxial InSb Films Grown by Metalorganic Magnetron Sputtering," *J. Appl. Phys.* **68**, 5363 (1990).
87. S. Perkowitz, L. S. Kim, and P. Becla, "Infrared Bond Ionicity in Ternary II-VI Alloys," *Solid State Commun.* **77**, 471 (1991).
88. S. Perkowitz, L. S. Kim, and P. Becla, "Infrared Analysis of Clustering in the II-VI-VI Compound $\text{CdSe}_x\text{Te}_{1-x}$," *Phys. Rev. B* **43**, 6598 (1991).
89. Z. C. Feng, S. Perkowitz, R. Rousina, and J. B. Webb, "Raman and Infrared Spectroscopy of $\text{In}_{1-x}\text{Ga}_x\text{Sb}$ Films Grown on GaAs by Metalorganic Magnetron Sputtering," *Canadian J. Phys.* **69**, 386 (1991).
90. Z. C. Feng, S. Perkowitz, and P. Becla, "Multiple Phonon Overtones in ZnTe," *Solid State Commun.* **78**, 1011 (1991).

91. Z. C. Feng, S. Perkowitz, and J. J. Dubowski, "Raman Scattering Studies of CdMnTe Films Grown on GaAs by Pulsed Laser Evaporation and Epitaxy," *J. Appl. Phys.* **69**, 7782 (1991).
92. D. N. Talwar, A. C. Coleman, P. M. Amirtharaj, S. Perkowitz, Z. C. Feng, and P. Becla, "Phonons in Mixed II-VI Compound Semiconductors", in *Defects in Materials*, edited by P. D. Bristowe, J. E. Epperson, J. E. Griffith and Z. Lilienthal-Weber, Proceedings of Materials Research Society (Materials Research Society, Pittsburgh) **209**, 451 (1991).
93. J. J. Dubowski, A. P. Roth, E. Deleporte, G. Peter, Z. C. Feng, and S. Perkowitz, "Optical Properties of CdTe-Cd_{0.90}Mn_{0.10}Te Multiple Quantum Well Structures Grown by Pulsed Laser Evaporation and Epitaxy", *J. Crystal Growth* **117**, 862 (1992).
94. Z. C. Feng, A. A. Allerman, P. A. Barnes, and S. Perkowitz, "Raman Scattering Study of In_{1-x}Ga_xAs/InP Grown by Uniform Radial Flow Epitaxy," *Appl. Phys. Lett.* **60**, 1848 (1992).
95. M. D. Blue and S. Perkowitz, "Space Exposure Effects on Optical Baffle Coatings at Far-Infrared Wavelengths", *Appl. Opt.* **31**, 4305 (1992).
96. K. T. Pollard, A. Erbil, R. Sudharsanan, and S. Perkowitz, "Metalorganic Chemical Vapor Deposition of PbTe Films on GaAs Substrates", *J. Appl. Phys.* **71**, 6136 (1992).
97. S. Perkowitz, "Infrared Properties of Semiconductors: Talking Physics With Simple Models, à la Eli Burstein", *Solid State Commun.* **84**, 19 (1992). (Invited review).
98. K. T. Yue, Z. C. Feng, S. Perkowitz, and B. Puckett, "Simple, Versatile Liquid Nitrogen Cryostat for Raman Studies", *Appl. Spectroscopy* **46**, 1590 (1992).
99. M. Macler, Z. C. Feng, S. Perkowitz, R. Rousina, and J. Webb, "Far Infrared Analysis of In_{1-x}Ga_xSb films Grown on GaAs by Metal Organic Magnetron Sputtering", *Phys. Rev. B* **46**, 6902 (1992).
100. Z. C. Feng, S. Perkowitz, D. K. Kinell, R. L. Whitney, and D. N. Talwar, "Compositional Dependence of Optical Phonon Frequencies in Al_xGa_{1-x}As," *Phys. Rev B* **47**, 13,446 (1993).
101. Z. C. Feng, P. Becla, L. S. Kim, S. Perkowitz, Y. P. Feng, H. C. Poon, K. P. Williams, and G. D. Pitt, "Raman, Infrared, Photoluminescence and Theoretical Studies of the II-VI-VI Ternary CdSeTe," *J. Crystal Growth* **138**, 239 (1994).
102. R. Fukasawa and S. Perkowitz, "Raman Scattering Spectra of Coupled LO-Phonon -- Hole-Plasmon Modes in *p*-type GaAs," *Phys. Rev. B* **50**, 14,119 (1994).

103. S. E. Ralph, S. Perkowitz, D. Grischkowsky, and N. Katzenellenbogen, "Terahertz Spectroscopy of Optically Thick Multilayered Semiconductor Structures," *J. Opt. Soc. Am. B* **11**, 2,528 (1994).
104. S. Perkowitz, D. G. Seiler, and W. Duncan, "Optical Characterization in Microelectronics Manufacturing," *J. Res. Natl. Inst. Stand. Technol.* **99**, 605 - 639 (1994). (invited review).
105. Z. C. Feng, S. Perkowitz, J. Cen, K. K. Bajaj, D. K. Kinnell, and R. L. Whitney, "Photoluminescence, Raman and Infrared Diagnosis of GaAs - AlGaAs Superlattices for Intersubband Infrared Detection," *IEEE J. Selected Topics Quantum Electronics* **1**, 1 (1995).
106. S. Perkowitz, D. G. Seiler, and W. M. Bullis, "Optical Characterization of Materials and Devices for the Semiconductor Industry: Trends and Needs," *Semiconductor Characterization: Present Status and Future Needs* (American Institute of Physics, Woodbury, 1996), 422 - 427.
107. Z. C. Feng, S. Perkowitz, J. Cen, K. K. Bajaj, D. K. Kinell and R. L. Whitney, "Optical Characterization of MBE-grown GaAs-AlGaAs Superlattices for Infrared Detectors," *Semiconductor Characterization: Present Status and Future Needs* (American Institute of Physics, Woodbury, 1996), 644 - 648.
108. R. Fukasawa and S. Perkowitz, "Damped LO Phonon - Hole Plasmon Modes in p-type GaAs," *Japan. J. Appl. Phys.* **35**, 132 - 133 (1996).
109. Y. S. Yu, S. S. Prabhu, S. Perkowitz, and S. C. Kim "Polariton Modes and Materials Parameters in Li_2GeO_3 ," *Phys. Rev. B* **56**, 5,046 - 5,048 (1997).
110. R. Fukasawa, K. Sakai and S. Perkowitz, "Far-infrared Reflectance Studies of Heavily Doped Coupled Hole Plasmon-Longitudinal Optical Modes in p-type GaAs," *Japan. J. Appl. Phys.* **36**, 5,543 - 5,548 (1997).
111. Y. S. Yu, S. S. Prabhu, S. Perkowitz, and S. C. Kim, "New Vibrational Modes in Single Crystal Li_2GeO_3 ," *Ferroelectrics* **205**, 159 - 165 (1998).
112. G. Chen, W. Hao, Y. Shi, Y. Wu and S. Perkowitz, "Raman Characterization of $\text{Li}(\text{Al}_{1-x}\text{Co}_x)\text{O}_2$," *J. Matls. Research* **15**, 583 - 585 (2000).
113. Sidney Perkowitz, "The Physics of Light and Sunlight," *Neuroendocrinol. Lett.* **23**, Suppl. 2, 14 -16 (2002).

PUBLISHED GENERAL WORKS

BOOKS

Empire of Light: A History in Science and Art (Henry Holt, New York, 1996). Best Science-Technology Books of 1996, *Library Journal*; Astronomy Book Club; Book of the Month International; Science Library Collection, National Academies of Science.

Illustrated paperback edition (JHP/National Academies Press, Washington, DC, 1998)

German edition, *Eine Kurze Geschichte des Lichts: Die Erforschung eines Mysteriums*. (Deutscher Taschenbuch Verlag, Munich, 1998).

Braille edition (Library of Congress: National Library Service for the Blind, Washington, D. C., 1998).

Chinese edition (Owl Publishing, Taipei, Taiwan, 2001).

Television version, *The Mystery of Light*, (GEO Magazine/ARTE Channel/Discovery Channel German-French co-production, Stuttgart, November/December, 1999).

Universal Foam: From Cappuccino to the Cosmos (Walker, New York, 2000).

Universal Foam: Exploring the Science of Nature's Most Fascinating Substance (paperback edition, Anchor Books, New York, 2001).

Universal Foam: The Story of Bubbles -- From Cappuccino to the Cosmos. (UK edition, Vintage Books, London, 2001).

La Teoria del Cappuccino: la Schiuma dalle Cellule al Cosmo (Italian edition, Garzanti, Milan, 2001).

Japanese edition (Kinokuniya, Tokyo, 2001).

German edition (Rütten & Loening, Berlin, 2003).

Korean edition (Science Books, Seoul, 2008).

Digital People (JHP/National Academies Press, Washington, DC, 2004; paperback, 2004). Listed, Best Science-Technology Books of 2004, *Library Journal*.

Turkish edition (Encore, Istanbul, 2011 (in press)).

Hollywood Science: Movies, Science, and the End of the World. (Columbia University Press, New York, 2007; paperback, 2010; Kindle edition, 2010). Selection, Scientific American Book Club. Outstanding Academic Titles, 2008, *Choice* reviews.

Taiwanese edition (Wu-Nan, Taipei, 2008).

Chinese edition (China Youth Press, Beijing, 2011 (in press)).

Slow Light: Invisibility, Teleportation, and Other Mysteries of Light (Imperial College Press, London, 2011). Selection, Scientific American Book Club.

Japanese edition (Soshisa, Tokyo, 2012 (in press)).

Hollywood Chemistry (ACS Books, Washington, DC, 2014 (in press)), co-editor and contributor.

BOOKS (continued)

Science and the Future of Food (in progress)

Monochrome: Adventures in Black and White (in progress)

WORKS FOR STAGE AND SCREEN

Friedmann's Balloon, play. Presented, Theater Emory, Sept. 23 – 24, 2002; NCS-AAPT Meeting/Duke University Players, March 11, 2005.

Albert and Isadora, dance-performance piece (with Lori Belilove, Isadora Duncan Foundation), ASCI Annual Conference, Dec. 7, 2002; Harold Washington Library, Chicago, Feb. 2003; CUNY Graduate Center, New York, May 2003.

Glory Enough: Rosalind Franklin and DNA, play. Presented, Theater Emory, Feb. 13, 2005.

The Second Obsession, screenplay (in progress)

MURAL AND MUSEUM EXHIBITS

A Century of Physics: A Timeline for the 20th Century (with A. Gregory and H. C. von Baeyer). American Physical Society, College Park, MD, 1999. <http://timeline.aps.org/APS/WallChart.cfm>

Visualizing Physics (with Felice Frankel). Fernbank Museum of Natural History, Atlanta, GA, March 1999. Beckman Institute, University of California, Irvine, 2000.

Sensing Nature. Fernbank Museum of Natural History, Atlanta, GA, permanent exhibit (Fall 2000). http://www.fernbankmuseum.org/exhibitions/permanent/sensing_nature.aspx

Science and Art: Shared Frontiers. (with Juliette Stapanian Apkarian). Schatten Gallery, Emory University, January – May 2001.

MAGAZINE ARTICLES, INTERNET BLOGS, AND OTHER SHORT PIECES

1. "When East Meets West," *The Scientist*, Nov. 28, 1988, 9.
2. "Don't Toss Your Old Communications Systems Yet," *Miami Herald*, Feb. 26, 1989, 4c.
3. "Scientists Have Much to Gain by Studying Their Own Tribe," *The Scientist*, July 24, 1989, 13.
4. "Can Scientists Learn to Write?," *J. Tech. Writing Commun.* **19**, 353 - 356 (1989).
5. "Larger Machines Are Breeding Larger Research Teams," *The Scientist*, Oct. 16, 1989, 13, 15.
6. "On David Mermin's Reference Frame: Letter to the Editor," *Physics Today*, Feb. 1990, 13.
7. "386 User's Log: Moving to 33 MHz," *Personal Workstation*, June 1990, 97 - 100.
8. "Old Bells, New Beeps," *InfoTalk*, Aug./Sept. 1990, 1, 15.
9. "How Can We Have Science Literacy Without Literate Scientists?," *The Scientist*, Sept. 3, 1990, 12. (Reprinted, *NSTA Reports!*).

10. "The March of the Science Platoon," *New Scientist*, February 9, 1991, 65.
11. "The War Science Waged," *Washington Post*, March 3, 1991, c2. (Reprinted, *Manchester (England) Guardian, San Jose Mercury, Louisville Courier Journal, Houston Chronicle*).
12. "True Colors: Why Things Look the Way They Do," *The Sciences*, May/June 1991, 22 - 28. (Reprinted, *Social Issues Resource Series*).
13. "Romancing the Quantum," *Washington Post*, Oct. 6, 1991, c3. (Reprinted, *Miami Herald*, Oct. 13, 1991, c6; reprinted as "Romantic Quests Need Pots of Gold", *Optics and Photonics News*, April 1992, 6.
14. "Laughing by Numbers," *New Scientist*, Oct. 12, 1991, 62.
15. "On Attending Scientific Meetings (Just for the Fun of It)," *The Scientist*, Nov. 11, 1991, 13 (Reprinted, *Optical Engineering Reports*, April 1992, 2).
16. "Real Physicists Don't Wear Ties," *New Scientist*, Dec. 21/28 1991, 22 - 24.
17. "Scntst, GP, Nds Prtner for MOR and GACK," *New Scientist*, Feb. 8, 1992, 54.
18. "Heat Wave: Looking at the World Through Infrared Glasses," *The Sciences* March/April 1992, 30 - 37.
19. "Spelling it Right in Karachi," *New Scientist*, January 23, 1993, 46.
20. "Generating Science: Productivity and Policy," *The Scientist*, January 25, 1993, 11.
21. "Mood Indigo: Exploring the Spectrum Beyond the Blue," *The Sciences*, March/April 1993, 26 - 32.
http://www.nyas.org/publications/sciences/pdf/ts_03_93.pdf
22. "Small Wonders," *Technology Review*, July 1993, 70 - 71.
23. "Catching the Light," *Physics Today*, September 1993, 64 - 66.
24. "The Things That Draw One Physicist to His Science," *Physics Today*, May 1994, 73.
25. "Strange Devices," *The Sciences*, January/February 1995, 21 - 27. (Reprinted as "Quantum Technology and Common Sense," *Writing Across the Curriculum*, Dolores LaGuardia and Hans Guth, editors (San Diego: Mayfield Publishing, 1996)).
26. "Stealth Science," *The Sciences*, November/December 1995, 40 - 44.
http://www.nyas.org/publications/sciences/pdf/ts_11_95.pdf
27. "Art Upsets, Science Reassures," *Denver Quarterly*, Winter 1996, 120 - 131.
28. "Meeting Expectations: Reflecting on Thirty Years of Science," *The Scientist*, April 15, 1996, 11.
29. "Connecting with E. M. Forster," *The American Prospect*, May - June 1996, 86 - 89 (Reprinted, *The Conscious Reader*, Carolyn Shrodes *et al.*, editors (Boston: Allyn & Bacon, 1998)). <http://www.prospect.org/print/V7/26/perkowicz-s.html>

30. "Moving the Goalposts," *American Scientist*, September-October, 1996, 426 - 427. (Reprinted, *Geoscope*, University of British Columbia, November 1996; *Emory Report*, September 22, 1997).
31. "Mildred Thompson: A Review of Her Retrospective Exhibit," *Art Papers*, September/October 1996, 49.
32. "Hubs, Struts, and Aesthetics," *Technology Review*, November/December 1996, 56 - 63. (Reprinted as "Quando L'arte fa la Ruota," *Technology Review* Italian edition, December 1996, 72 - 77).
33. "Pumping Out the Photons," *Beamline*, Summer 1997, 10 - 17.
<http://www.slac.stanford.edu/pubs/beamline/27/2/27-2-perkowitz.pdf>
34. "Artefacts of an Engineer's Mind," *Physics World*, April 1997, 55.
http://physicsworldarchive.iop.org/index.cfm?action=summary&doc=10%2F4%2Fp_hwv10i4a30%40pwa-xml&qt=
35. "Light Reading," *Los Angeles Times* Book Review, July 20, 1997, 8.
<http://articles.latimes.com/p/1997/jul/20/books/bk-14356>
36. "Brother, Can You Spare a Cyclotron," *Technology Review*, Aug./Sept. 1997, 45 - 50. <http://www.technologyreview.com/BizTech/11581/>
37. "In Salmon do did Mobile Bond," *New Scientist*, 19/26 Dec. 1998 - 2 Jan. 1999, 62 - 63. <http://www.newscientist.com/article/mg16021656.300>
38. "The Rarest Element," *The Sciences*, Jan./Feb. 1999, 34 - 38. (Reprinted, *Writing on Water*, David Rothenberg and Marta Ulvaeus, editors (Cambridge, Mass: MIT Press, 2001)). http://www.nyas.org/publications/sciences/pdf/ts_01_99.pdf
39. "Having a Ball: When Curie Danced with Oppenheimer," *New Scientist*, 17 April 1999, 64.
40. "The Seductive Melody of the Strings," *Science*, 11 June 1999, 1780.
<http://www.sciencemag.org/cgi/content/full/sci;284/5421/1780a>
41. "Seriously Cool," *New Scientist*, 31 July 1999, 30 - 31.
42. "Feeling is Believing," *New Scientist*, 11 September 1999, 34 - 37.
43. "Golden Century," *New Scientist*, 27 November 1999, 96 - 97.
44. "Gloriously Bubbly," *New Scientist*, 25 December 1999 - 1 January 2000, 58 - 61.
45. "The End of Light as We Know It," *New Scientist*, 8 January 2000, 30 - 33.
46. "Froth with Meaning," *The Sciences*, March/April 2000, 34 - 38.
http://www.nyas.org/publications/sciences/pdf/ts_03_00.pdf
47. "Think of a Number," *New Scientist*, 29 July 2000, 42 - 43.
48. "Art and Science: Closer Than you Think," (with Juliette Stapanian Apkarian), *The Academic Exchange*, Fall 2000, 10 - 11.

49. "Fizzicks!," *Times (London) Educational Supplement (Science & Technology)*, Autumn 2000, 12 – 13.
50. "Bah Humbug," *New Scientist*, 23/30 December 2000, 38 – 39.
51. "Spotting Craziess in Cloud-Cuckoo Land," *Physics World*, August 2001, 43.
<http://physicsweb.org/articles/review/14/8/3/1>
52. "Foamy 'Fizzicks'," *Odyssey*, September 2001, 6 – 11.
<http://homepage.mac.com/keithmjohanson/soapbubbler.com/page16/page21/files/Foamy%20Fizzicks.pdf>
53. "Analogy," "Friedrich Dürrenmatt," "Quantum Physics," "Richard Feynman," "Schrödinger's Cat," and "Scientist as Author." *Literature and Science: An Encyclopedic Companion*, Pamela Gossin, editor (Westport, CT.: Greenwood Press, 2002).
54. "Doughnuts Reveal Life's Secrets," *Physics World*, December 2002, 37.
<http://physicsworldarchive.iop.org/index.cfm?action=summary&doc=15%2F12%2Fphwv15i12a30%40pwa-xml&qt=>
55. "Between Word and Number," foreword to *The Metaphorical Circuit: Negotiations between Literature and Science in Twentieth Century Japan*, Joseph Murphy (Ithaca, NY: Cornell East Asia Series, 2003), ix – xiii.
56. "Hi, Robot," *Atlanta Journal-Constitution*, Sunday, May 23, 2004, section E 1:4. (Reprinted as "Being Bionic," *Emory Report*, Feb. 7, 2005, 2; "Becoming Bionic," *Emory Magazine*, Spring 2005, 48 - 49).
57. "Science Treads the Boards," *Physics World*, November 2004, 16 – 17
<http://physicsweb.org/articles/world/17/11/3>.
58. "Analyzing the Bubbly," *Physics World*, December 2004, 42.
<http://physicsweb.org/articles/review/17/12/7/1>
59. "Digital People in Manufacturing: Making Them and Using Them," *The Bridge* (National Academy of Engineering) **35**, No. 1, Spring 2005, 21 – 25.
<http://www.nae.edu/File.aspx?id=7297>
60. "Shelf Life," *Physics World*, November 2005, 43.
<http://physicsweb.org/articles/review/18/11/4>
61. "Relativity," *Encyclopædia Britannica*, 2006. Encyclopædia Britannica Premium Service. 7 June 2006 <http://www.britannica.com/eb/article-252876>,
<http://www.britannica.com/eb/article-9109465>.
62. "Hollywood Physics," *Physics World*, July 2006, 18 - 23.
<http://physicsweb.org/articles/world/19/7/3/1>
63. "Female Scientists on the Big Screen," *The-Scientist.com*, 21 July 2006.
<http://www.the-scientist.com/>, <http://www.the-scientist.com/news/display/24009/>
64. "Is Movie Science All Wet? Tsunamis, Global Warming, and Other Movie Disasters," *The Academic Exchange*, April 2007, 6 – 7.

65. "The 5 Best and Worst Science Based Movies of All Time," *Discover*, November, 2007 (interviewee). <http://discovermagazine.com/2007/nov/none-found>
66. "NSF-AAAS Student Research Conference Underlines the Importance of Historically Black Colleges and Universities," American Association for the Advancement of Science, <http://www.aaas.org/news/releases/2008/1112hbcu.shtml>, Nov. 12, 2008.
68. "Castles in the Air," *Physics World*, January 2009, 2 – 5. <http://physicsworld.com/cws/article/print/37171>. (Reprinted, *Cosmos*, 2009 (in press)).
69. "Bose-Einstein condensate," *Encyclopædia Britannica Online*, 2009. <http://www.britannica.com/EBchecked/topic/74640/Bose-Einstein-condensate>
70. "Fermi surface," *Encyclopædia Britannica Online*, 2009. <http://www.britannica.com/EBchecked/topic/204790/Fermi-surface>
71. "hole," *Encyclopædia Britannica Online*, 2009. <http://www.britannica.com/EBchecked/topic/269197/hole>.
72. "phonon," *Encyclopædia Britannica Online*, 2009. <http://www.britannica.com/EBchecked/topic/457336/phonon>.
73. "photoconductivity," *Encyclopædia Britannica Online*, 2009. <http://www.britannica.com/EBchecked/topic/457776/photoconductivity>.
74. "solid solution," *Encyclopædia Britannica Online*, 2009. <http://www.britannica.com/EBchecked/topic/553329/solid-solution>
75. "Updating Those Classic Science Fiction Films," National Academy of Sciences *Science and Entertainment Exchange* <http://www.scienceandentertainmentexchange.org/> (July 2009).
76. "Science Fiction Covers the Universe and Also Our Own Little Globe," National Academy of Sciences *Science and Entertainment Exchange*. <http://www.scienceandentertainmentexchange.org/> (July 2009).
77. "Aliens: Love Them, Hate Them, or Relate to Them?," National Academy of Sciences *Science and Entertainment Exchange*. <http://www.scienceandentertainmentexchange.org/> (August 2009).
78. "Codex Futurius: When Houses Grow on Trees," *Discover Magazine/Science Not Fiction*. <http://blogs.discovermagazine.com/sciencenotfiction/2009/09/03/codex-futurius-when-houses-grow-on-trees/>
<http://blogs.discovermagazine.com/sciencenotfiction/category/codex-futurius/> (September 2009).
79. "My Favorite Cyborgs," National Academy of Sciences *Science and Entertainment Exchange*. <http://www.scienceandentertainmentexchange.org/> (October 2009).
80. "Forget Warp Drive and Faster-than-light Space Travel: 'Slow Light' is Where It's At," National Academy of Sciences *Science and Entertainment Exchange*. <http://www.scienceandentertainmentexchange.org/> (November 2009).

81. "Resistance is Unnecessary: Accepting the Cyborg in our Midst," *Literal* **19**, 26 – 27, Winter 2009 – 2010.
82. "Will a Science Fiction Film Ever Win an Oscar?," National Academy of Sciences *Science and Entertainment Exchange*.
<http://www.scienceandentertainmentexchange.org/> (March 2010).
83. "The Six Elements: Visions of a Complex Universe," *Leonardo* **43**, 208 - 211, April 2010.
<http://muse.jhu.edu.proxy.library.emory.edu/journals/leonardo/v043/43.2.perkowitz.pdf>
84. "Zap! Or, Where Would Science Fiction be Without Lasers?," National Academy of Sciences *Science and Entertainment Exchange*,
<http://www.scienceandentertainmentexchange.org/> (May 2010).
85. "From Ray Guns to Blu-Ray," *Physics World*, May 2010, 16 - 20.
86. "Communicating Real Science Through Hollywood Science" (with Eddy von Mueller), in *Taking Science to the People*, Carolyn Johnson, ed. (Lincoln, NE: University of Nebraska Press, 2010), 81 - 88.
87. "Theresa Levitt, *The Shadow of Enlightenment*" (book review), *Phys. Perspective* **12**, 234 – 236, 2010.
88. "Food for (Future) Thought or *Star Trek: the Menu*," National Academy of Sciences *Science and Entertainment Exchange*, <http://www.scienceandentertainmentexchange.org/> (Feb. 2011).
89. "Fantasy into science, or realizing the impossible: invisibility," National Academy of Sciences *Science and Entertainment Exchange*,
<http://www.scienceandentertainmentexchange.org/> (June 2011).
90. "Deflecting the Light and Deceiving the Gods," *Physics World*, July 2011, 21 - 25.
91. "Galileo Through a Lens: Views of His Life and Work on Stage and Screen," in *The Inspiration of Astronomical Phenomena VI, October 18 – 23, 2009*, Venice, Italy. Enrico Maria Corsini, ed. (San Francisco, CA: Astronomical Society of the Pacific, 2011), Vol. 441, p. 85 - 88.
http://www.aspbbooks.org/a/volumes/table_of_contents/?book_id=492
http://www.aspbbooks.org/a/users/add_volume
Code: [75bbf76d90fc88d687a121a28a0b25cc](http://www.aspbbooks.org/a/users/add_volume)
92. "Fantasy into science, or realizing the impossible: teleportation," National Academy of Sciences *Science and Entertainment Exchange*,
<http://www.scienceandentertainmentexchange.org/> (Sept. 2011).
93. "Mapping the Language of Science," *Physics World*, Oct. 2011, 2.
94. "Inspirational Realism: Chesley Bonestell and Astronomical Art," in *Proceedings of the 5th Annual Conference on the Inspiration of Astronomical Phenomena, 26 June - 1 July, 2005*, James B. Kaler and Marvin Bolt, eds. (San Francisco, CA: Astronomical Society of the Pacific, 2011, in press).

95. “Matthew Ritchie: Comments From a Physicist,” Pros* “Co-incident: Matthew Ritchie” Issue 1. (Visual Arts Department Journal, University of California, San Diego, in press).
96. “Fantasy into science, or realizing the impossible: tractor beams,” National Academy of Sciences *Science and Entertainment Exchange*, <http://www.scienceandentertainmentexchange.org/> (Dec. 14, 2011).
97. “Tricks of the Light,” *New Scientist*, December 11, 2011, 32 – 37.
98. “Ad Astra! To the Stars!,” *Physics World*, January 2012, 28 – 32.
99. “Fantasy into science, or realizing the impossible: interstellar travel,” National Academy of Sciences *Science and Entertainment Exchange*, <http://www.scienceandentertainmentexchange.org/> (Feb. 9, 2012) (in progress).
100. “Digital Synaesthesia” (in progress).
101. “To Capture the Past in a Pane of Glass” (in progress).