

Publication List—8 February 2024

DAVID BURNHAM TANNER

Book:

1. *Optical Effects in Solids*, David B. Tanner (Cambridge University Press, Cambridge, 2019).

Books Edited:

1. *Electrical Transport and Optical Properties of Inhomogeneous Media*, edited by J.C. Garland and D.B. Tanner (American Institute of Physics, New York, 1978).
2. *ETOPIM2—Proceedings of the Second International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media*, edited by J. Lafait and D.B. Tanner (North-Holland, Amsterdam, 1989).
3. *Axions 2010*, edited by David B. Tanner and K.A. van Bibber (American Institute of Physics, New York, 2010).

Invited Review Articles:

1. “Optical properties of one-dimensional systems,” D.B. Tanner in *Extended Linear Chain Compounds*, Vol. 2, edited by Joel S. Miller (Plenum Press, New York, 1982) pp. 205–258.
2. “Far-infrared properties of inhomogeneous materials,” G.L. Carr, S. Perkowitz, and D.B. Tanner in *Infrared and Millimeter Waves*, Vol. 13, edited by Kenneth J. Button (Academic Press, Orlando, 1985) pp. 171–263.
3. “Infrared properties of high- T_c superconductors,” T. Timusk and D.B. Tanner in *Physical Properties of High-Temperature Superconductors I*, edited by Donald M. Ginsberg (World Scientific, Singapore, 1989) pp. 339–407.
4. “Optical properties of high-temperature superconductors,” D.B. Tanner and T. Timusk in *Physical Properties of High-Temperature Superconductors III*, edited by Donald M. Ginsberg (World Scientific, Singapore, 1992) pp. 363–469.
5. “Multicolored electrochromism in polymers: Structures and devices,” A.A. Argun, P-H. Aubert, B.C. Thompson, I. Schwendeman, C.L. Gaupp, J. Hwang, N.J. Pinto, D.B. Tanner, A.G. MacDiarmid, and J.R. Reynolds, *Chem. Mater.* **16**, 4401–4412 (2004).
6. “Observation of Gravitational Waves from a Binary Black Hole Merger,” B.P. Abbott *et al.* (the LIGO Scientific Collaboration & the Virgo Collaboration) in *Centennial of General Relativity: A Celebration* edited by César Augusto Zen Vasconcellos (World Scientific, Singapore, 2017) pp. 291–312. (LIGO-P1600247-v1)

Theses:

1. *Temperature dependence of the resistivity of silver films*, M.S., University of Virginia, 1967.
2. *Some size effects in metals in the far infrared*, Ph.D., Cornell University, 1972.

Papers:

1. "Electrical resistivity of silver films," D.B. Tanner and D.C. Larson, *Phys. Rev.* **166**, 652–655 (1968).
2. "Far-infrared measurements of the energy gap of V₃Si," D.B. Tanner and A.J. Sievers, *Phys. Rev. B* **8**, 1978–1981 (1973).
3. "Fluctuation contribution to the far-infrared transmission of lead films," D.B. Tanner, *Phys. Rev. B* **8**, 5045–5054 (1973).
4. "Infrared conductivity of tetrathiofulvalene tetracyanoquinodimethane (TTF-TCNQ) films," D.B. Tanner, C.S. Jacobsen, A.F. Garito, and A.J. Heeger, *Phys. Rev. Lett.* **32**, 1301–1305 (1974).
5. "Single-crystal reflectance studies of tetrathiofulvalene tetracyanoquinodimethane," C.S. Jacobsen, D.B. Tanner, A.F. Garito, and A.J. Heeger, *Phys. Rev. Lett.* **33**, 1559–1562 (1974).
6. "Far-infrared absorption in small metallic particles," D.B. Tanner, A.J. Sievers, and R.A. Buhrman, *Phys. Rev. B* **11**, 1330–1341 (1975).
7. "Infrared studies of the energy gap in tetrathiofulvalene-tetracyanoquinodimethane (TTF-TCNQ)," D.B. Tanner, C.S. Jacobsen, A.F. Garito, and A.J. Heeger, *Phys. Rev. B* **13**, 3381–3404 (1976).
8. "The 38 K transition in TTF-TCNQ viewed as a percolation phenomenon," F.P. Pan, D. Stroud, and D.B. Tanner, *Solid State Commun.* **20**, 271–275 (1976).
9. "Infrared opaque heat shield with high thermal conductance for use in changing magnetic fields," D.B. Tanner, G.G. Ihas, and K.A. Muething, *Rev. Sci. Instrum.* **48**, 610–612 (1977).
10. "Infrared studies of the energy gap and electron-phonon interaction in potassium-tetracyanoquinodimethane (K-TCNQ)," D.B. Tanner, C.S. Jacobsen, A.A. Bright, and A.J. Heeger, *Phys. Rev. B* **16**, 3283–3290 (1977).
11. "The critical fields of superconducting palladium hydride," D.R. Krahn, R.L. Henry, D.B. Tanner, and P.E. Wigen, *Phys. Stat. Sol. (a)* **46**, 209–212 (1978).
12. "A lamellar grating interferometer for the far-infrared," R.L. Henry and D.B. Tanner, *Infrared Phys.* **19**, 163–174 (1979).
13. "Far-infrared measurements of Holstein processes and low energy $\alpha_{tr}^2 F(\omega)$ structure in V₃Si," S.W. McKnight, S. Perkowitz, D.B. Tanner, and L.R. Testardi, *Phys. Rev. B* **19**, 5689–5693 (1979).

14. "Optical properties of the semiconducting 'metal-like' complex (NMe₃H)(I)(TCNQ)," D.B. Tanner, J.E. Deis, A.J. Epstein, and J.S. Miller, *Solid State Commun.* **31**, 671–675 (1979).
15. "Comparison of Fourier and laser spectroscopy in the far-infrared–submillimeter range," S. Perkowitz, R.L. Henry, and D.B. Tanner, *Appl. Opt.* **18**, 2349–2351 (1979).
16. "Far-infrared ordinary-ray optical constants of quartz," K.D. Cummings and D.B. Tanner, *J. Opt. Soc. Am.* **70**, 123–126 (1980).
17. "Optical and electron-energy-loss studies of the monomeric and dimeric phases of decamethylferrocenium tetracyanoquinodimethane, (DMeFc)(TCNQ)," D.B. Tanner, Joel S. Miller, M.J. Rice, and J.J. Ritsko, *Phys. Rev. B* **21**, 5835–5845 (1980).
18. "Search for maximum metallic resistance in random metal-particle composites," J.C. Garland, W.J. Gully, and D.B. Tanner, *Phys. Rev. B* **22**, 507–511 (1980).
19. "Absorption of far-infrared radiation by random metal particle composites," N.E. Russell, J.C. Garland, and D.B. Tanner, *Phys. Rev. B* **23**, 632–639 (1981).
20. "Critical behavior of the dielectric constant of a random composite near the percolation threshold," D.M. Grannan, J.C. Garland, and D.B. Tanner, *Phys. Rev. Lett.* **46**, 375–378 (1981).
21. "Dimensionality crossover in the organic superconductor tetramethyltetraselenafullvalene hexafluorophosphate [(TMTSF)₂PF₆]," C.S. Jacobsen, D.B. Tanner, and K. Bechgaard, *Phys. Rev. Lett.* **46**, 1142–1145 (1981).
22. "Anomalous far-infrared absorption in random small-particle composites," G.L. Carr, R.L. Henry, N.E. Russell, J.C. Garland, and D.B. Tanner, *Phys. Rev. B* **24**, 777–786 (1981).
23. "Far-infrared study of the charge density wave in tetrathiafulvalene tetracyanoquino-dimethane (TTF-TCNQ)," D.B. Tanner, K.D. Cummings, and C.S. Jacobsen, *Phys. Rev. Lett.* **47**, 597–600 (1981).
24. "Optical properties of cesium tetracyanoquinodimethane, Cs₂(TCNQ)₃," K.D. Cummings, D.B. Tanner, and Joel S. Miller, *Phys. Rev. B* **24**, 4142–4154 (1981).
25. "Optical properties of the cation-deficient platinum chain salt K_{1.75}Pt(CN)₄·1.5H₂O," L.H. Greene, D.B. Tanner, A.J. Epstein, and Joel S. Miller, *Phys. Rev. B* **25**, 1331–1338 (1982).
26. "Far-infrared absorption by fine-metal-particle composites," P.N. Sen and D.B. Tanner, *Phys. Rev. B* **26**, 3582–3587 (1982).
27. "Conversion of *cis*-polyacetylene to *trans*-polyacetylene during doping," D.M. Hoffman, H.W. Gibson, A.J. Epstein, and D.B. Tanner, *Phys. Rev. B* **27**, 1454–1457 (1983).
28. "Correction of phase errors in Fourier spectroscopy," C.D. Porter and D.B. Tanner, *Int. J. Infrared and Milli. Waves* **4**, 273–298 (1983).

29. "Poly(1,6-heptadiyne), a free-standing polymer film dopable to high electrical conductivity," H.W. Gibson, F.C. Bailey, A.J. Epstein, H. Rommelmann, S. Kaplan, J. Harbour, X.Q. Yang, D.B. Tanner, and J.M. Pochan, *J. Am. Chem. Soc.* **105**, 4417–4431 (1983). See also *J. Am. Chem. Soc.* **105**, 6531 (1983).
30. "Anomalous infrared absorption in granular superconductors," G.L. Carr, J.C. Garland, and D.B. Tanner, *Phys. Rev. Lett.* **50**, 1607–1610 (1983).
31. "Role of solitons in nearly metallic polyacetylene," A.J. Epstein, H. Rommelmann, R. Bigelow, H.W. Gibson, D.M. Hoffman, and D.B. Tanner, *Phys. Rev. Lett.* **50**, 1866–1869 (1983).
32. "Epstein *et al.* respond" (to "Comment on 'Role of solitons in nearly metallic polyacetylene'"), A.J. Epstein, H. Rommelmann, R. Bigelow, H.W. Gibson, D.M. Hoffman, and D.B. Tanner, *Phys. Rev. Lett.* **51**, 2020 (1983).
33. "Optical and infrared properties of tetramethyltetraselenafulvalene $[(\text{TMTSF})_2\text{X}]$ and tetramethyltetrathiafulvalene $[(\text{TMTTF})_2\text{X}]$ compounds," C.S. Jacobsen, D.B. Tanner, and K. Bechgaard, *Phys. Rev. B* **28**, 7019–7032 (1983).
34. "Thermodynamic transition of small superconducting particles," N.A.H.K. Rao, J.C. Garland, and D.B. Tanner, *Phys. Rev. B* **29**, 1214–1217 (1984).
35. "Solitons, disorder, and charge conduction in nearly metallic polyacetylene," A.J. Epstein, R.W. Bigelow, A. Feldblum, H.W. Gibson, D.M. Hoffman, and D.B. Tanner, *Synth. Met.* **9**, 155–164 (1984).
36. "Comment about the far-infrared absorption by small particles," D.B. Tanner, *Phys. Rev. B* **30**, 1042–1044 (1984).
37. "Source of a problem with Fourier transform spectroscopy," D.B. Tanner and R.P. McCall, *Appl. Opt.* **23**, 2363–2368 (1984).
38. "A critical point analysis of two phonon structure in the far infrared dielectric response of GaAs," A. Memon and D.B. Tanner, *Int. J. Infrared and Milli. Waves* **5**, 1009–1016 (1984).
39. "Optical properties of a small-particle composite," K.D. Cummings, J.C. Garland, and D.B. Tanner, *Phys. Rev. B* **30**, 4170–4182 (1984).
40. "Very low temperature nuclear spin diffusion in *trans*-polyacetylene," P.E. Sokol, J.R. Gaines, S.I. Cho, D.B. Tanner, H.W. Gibson, and A.J. Epstein, *Synth. Met.* **10**, 43–49 (1984).
41. "Nearly metallic $[\text{CH}(\text{I}_3)_y]_x$ —Importance of solitons, crystal order, hopping and band conduction," A. Feldblum, R.W. Bigelow, H.W. Gibson, A.J. Epstein, and D.B. Tanner, *Mol. Cryst. Liq. Cryst.* **105**, 191–202 (1984).
42. "Far-infrared dielectric function of zincblende ZnS," A. Memon and D.B. Tanner, *Phys. Stat. Sol. (b)* **127**, 49–52 (1985).

43. "Peierls gap in the large-*U* quarter-filled band compound quinolinium tetracyano-quinodimethanide [Qn(TCNQ)₂]," R.P. McCall, D.B. Tanner, J.S. Miller, A.J. Epstein, I.A. Howard, and E.M. Conwell, *Synth. Met.* **11**, 231–237 (1985).
44. "Long wavelength optical phonons in mixed alkali halide powder crystals," A. Memon and D.B. Tanner, *Phys. Stat. Sol. (b)* **137**, K9–K13 (1986).
45. "Far infrared study of optical phonons in K_{1-x}Rb_xI mixed crystals," A. Memon and D.B. Tanner, *Int. J. Infrared and Milli. Waves* **7**, 1805–1811 (1986).
46. "Optical absorption in 'quarter-filled band' TCNQ salts," D.B. Tanner, Ivar Hamberg, C.S. Jacobsen, M. Almeida, K. Carneiro, A.J. Epstein, and Joel S. Miller, *Physica B* **143**, 471–473 (1986).
47. "Transition to a gapless Peierls insulator in heavily-doped polyacetylene," X.Q. Yang, D.B. Tanner, M.J. Rice, H.W. Gibson, A. Feldblum, and A.J. Epstein, *Solid State Commun.* **61**, 335–340 (1987).
48. "Microwave conductivity of β -(ET)₂IAuI," D.B. Tanner, C.S. Jacobsen, Jack M. Williams, and Hau H. Wang, *Phys. Lett. A* **122**, 183–186 (1987).
49. "Phonon combination bands in the far-infrared spectrum of K_{0.5}Rb_{0.5}I mixed crystals," A. Memon and D.B. Tanner, *Phys. Stat. Sol. (b)* **139**, K81–K85 (1987).
50. "Far-infrared conductivity of the high-*T_c* superconductor YBa₂Cu₃O₇," D.A. Bonn, J.E. Greedan, C.V. Stager, T. Timusk, M.G. Doss, S.L. Herr, K. Kamarás, and D.B. Tanner, *Phys. Rev. Lett.* **58**, 2249–2250 (1987).
51. "Far infrared measurement of the gap of the high-*T_c* superconductor La_{1.85}Sr_{0.15}CuO_{4-x}," D.A. Bonn, J.E. Greedan, C.V. Stager, T. Timusk, M.G. Doss, S.L. Herr, K. Kamarás, C.D. Porter, D.B. Tanner, J.M. Tarascon, W.R. McKinnon, and L.H. Greene, *Phys. Rev. B* **35**, 8843–8845 (1987).
52. "Optical properties of the 1:2 compound of dimethylferrocenium with tetracyano-quinodimethanide: [(Me₂Fc)(TCNQ)₂]," R.P. McCall, D.B. Tanner, J.S. Miller, and A.J. Epstein, *Phys. Rev. B* **35**, 9209–9217 (1987).
53. "Electronic structure of some β -(C₁₀H₈S₈)₂X compounds as studied by infrared spectroscopy," C.S. Jacobsen, D.B. Tanner, Jack M. Williams, U. Geiser, and H.H. Wang, *Phys. Rev. B* **35**, 9605–9613 (1987).
54. "Optical properties of La_{1.85}Sr_{0.15}CuO₄: Evidence for strong electron-phonon and electron-electron interactions," S.L. Herr, K. Kamarás, C.D. Porter, M.G. Doss, D.B. Tanner, D.A. Bonn, J.E. Greedan, C.V. Stager, and T. Timusk, *Phys. Rev. B* **36**, 733–735 (1987).
55. "Excitonic absorption and superconductivity in YBa₂Cu₃O_{7-y}," K. Kamarás, C.D. Porter, M.G. Doss, S.L. Herr, D.B. Tanner, D.A. Bonn, J.E. Greedan, A.H. O'Reilly, C.V. Stager, and T. Timusk, *Phys. Rev. Lett.* **59**, 919–922 (1987).

56. "Polaron lattice in highly conducting polyaniline: Theoretical and optical studies," S. Stafström, J.L. Brédas, A.J. Epstein, H.S. Woo, D.B. Tanner, W.S. Huang, and A.G. MacDiarmid, *Phys. Rev. Lett.* **59**, 1464–1467 (1987).
57. "Far-Infrared Studies of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$," D.A. Bonn, J.E. Greedan, C.V. Stager, T. Timusk, K. Kamarás, C.D. Porter, M.G. Doss, S.L. Herr, and D.B. Tanner, *Rev. Solid State Sci.* **1**, 349–356 (1987).
58. "Far-infrared properties of *ab*-plane oriented $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$," D.A. Bonn, A.H. O'Reilly, J.E. Greedan, C.V. Stager, T. Timusk, K. Kamarás, and D.B. Tanner, *Phys. Rev. B* **37**, 1574–1579 (1988).
59. "Kamarás *et al.* reply" (to "Comment on 'Excitonic absorption and superconductivity in $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$ '"), K. Kamarás, C.D. Porter, M.G. Doss, S.L. Herr, D.B. Tanner, D.A. Bonn, J.E. Greedan, A.H. O'Reilly, C.V. Stager, and T. Timusk, *Phys. Rev. Lett.* **60**, 969 (1988).
60. "Infrared studies of *ab*-plane oriented oxide superconductors," T. Timusk, S.L. Herr, K. Kamarás, C.D. Porter, D.B. Tanner, D.A. Bonn, J.D. Garrett, C.V. Stager, J.E. Greedan, and M. Reedyk, *Phys. Rev. B* **38**, 6683–6688 (1988).
61. "Far-infrared optical properties of $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$," M. Reedyk, D.A. Bonn, J.D. Garrett, J.E. Greedan, C.V. Stager, T. Timusk, K. Kamarás, and D.B. Tanner, *Phys. Rev. B* **38**, 11981–11984 (1988).
62. "Far-infrared absorption by aluminum small particles," Y.H. Kim and D.B. Tanner, *Phys. Rev. B* **39**, 3585–3589 (1989).
63. "Optical Properties of quinolinium ditetracyanoquinodimethanide [$\text{Qn}(\text{TCNQ})_2$] and (*N*-methylphenazinium)_{*x*} (phenazine)_{1-*x*} (tetracyanoquinodimethanide), [$(\text{NMP})_x(\text{Phen})_{1-x}(\text{TCNQ})$]," R.P. McCall, Ivar Hamberg, D.B. Tanner, J.S. Miller, and A.J. Epstein, *Phys. Rev. B* **39**, 7760–7768 (1989).
64. "Comment on 'Observation of a Far-Infrared Sphere Resonance in Superconducting $\text{La}_{2-x}\text{Sr}_x\text{CuO}_{4-y}$ Particles,'" G.L Carr and D.B. Tanner, *Phys. Rev. Lett.* **62**, 2763 (1989).
65. "An infrared view of high- T_c superconductors," D.B. Tanner and T. Timusk, *Mod. Phys. Lett. B* **3**, 189–194 (1989).
66. "Planarizing polyaromatic polymers based on imine chemistry," K.B. Al-Jumah, K.B. Wagener, T.E. Hogen-Esch, J.L. Musfeldt, and D.B. Tanner, *Polym. Preprints* **30**, 173–174 (1989).
67. "In a clean high- T_c superconductor you do not see the gap," K. Kamarás, S.L. Herr, C.D. Porter, N. Tache, D.B. Tanner, S. Etemad, T. Venkatesan, E. Chase, A. Inam, X.D. Wu, M.S. Hegde, and B. Dutta, *Phys. Rev. Lett.* **64**, 84–87 (1990). See also *Phys. Rev. Lett.* **64**, 1692 (1990).
68. "Vibrational spectra of some binary semiconducting oxide glasses," A. Memon, M.N. Khan, K.E. Rajab, and D.B. Tanner, *J. Mater. Sci.* **25**, 511–513 (1990).

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Papers, continued:

69. "Cavity design for a cosmic axion detector," C. Hagmann, P. Sikivie, N. Sullivan, D.B. Tanner, and S.-I. Cho, *Rev. Sci. Instrum.* **61**, 1076–1085 (1990).
70. "Results from a search for cosmic axions," C. Hagmann, P. Sikivie, N.S. Sullivan, and D.B. Tanner, *Phys. Rev. D* **42**, 1297–1300 (1990).
71. "Evidence for strong bound-electron phonon interaction at 52 meV in $\text{YBa}_2\text{Cu}_3\text{O}_7$," T. Timusk and D.B. Tanner, *Physica C* **169**, 425–428 (1990).
72. "Reflectance of $R\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$ ceramic superconductors," A. Memon, M.N. Khan, C.D. Porter, and D.B. Tanner, *Mod. Phys. Lett. B* **4**, 1351–1354 (1990).
73. "Effect of silver doping on infrared reflectance and T_c of superconducting $\text{GdBa}_2\text{Cu}_{(1-x)}\text{Ag}_{3x}\text{O}_7$," A. Memon, M.N. Khan, S. Al-Dallal, D.B. Tanner, and C.D. Porter, *Int. J. Mod. Phys. B* **4**, 1889–1894 (1990).
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77. "Optical spectroscopic investigations of segmented *trans*-polyacetylene," G.A. Arbuckle, A.G. MacDiarmid, S. Lefrant, T. Verdon, E. Mulazzi, G.P. Brivio, X.Q. Yang, H.S. Woo, and D.B. Tanner, *Phys. Rev. B* **43**, 4739–4747 (1991).
78. "Infrared properties of T' -phase $R_2\text{CuO}_4$ insulating compounds," S.L. Herr, K. Kamarás, D.B. Tanner, S.-W. Cheong, G.R. Stewart, and Z. Fisk, *Phys. Rev. B* **43**, 7847–7851 (1991).
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80. "Far-infrared transmittance and reflectance studies of oriented $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ thin films," F. Gao, G.L. Carr, C.D. Porter, D.B. Tanner, S. Etemad, T. Venkatesan, A. Inam, B. Dutta, X.D. Wu, G.P. Williams, and C.J. Hirschmugl, *Phys. Rev. B* **43**, 10383–10389 (1991).
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83. “Electron-phonon effects in the infrared spectra of high T_c superconductors,” T. Timusk and D.B. Tanner, *Mod. Phys. Lett. B* **5**, 1575–1581 (1991).
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89. “Infrared studies of the phase transition in the organic charge-transfer salt N -propyl-quinolinium ditetracyanoquinodimethane,” J.L. Musfeldt, K. Kamarás, and D.B. Tanner, *Phys. Rev. B* **45**, 10 197–10 205 (1992).
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