

## Julian Schwinger's Publications\*

Legend: A=Abstract (APS meeting indicated), L=Letter

- [0] On the Interaction of Several Electrons, unpublished (1934).
- [1] On the Polarization of Electrons by Double Scattering (with O. Halpern), *Phys. Rev.* **48**, 109 (1935). [L]
- [2] On the  $\beta$ -Radioactivity of Neutrons (with L. Motz), *Phys. Rev.* **48**, 704 (1935). [L]
- [3] On the Magnetic Scattering of Neutrons, *Phys. Rev.* **51**, 544 (1937).
- [4] On Nonadiabatic Processes in Inhomogeneous Fields, *Phys. Rev.* **51**, 648 (1937).
- [5] The Scattering of Neutrons by Ortho- and Parahydrogen (with E. Teller), *Phys. Rev.* **51**, 775 (1937). [L]
- [6] Depolarization by Neutron-Proton Scattering (with I. I. Rabi), *Phys. Rev.* **51**, 1003 (1937). [A (Washington 4/37)]
- [7] Neutron Energy Levels (with J. Manley and H. Goldsmith), *Phys. Rev.* **51**, 1022 (1937). [A (Washington 4/37)]
- [8] The Scattering of Neutrons by Ortho- and Parahydrogen (with E. Teller), *Phys. Rev.* **52**, 286 (1937).
- [9] On the Spin of the Neutron, *Phys. Rev.* **52**, 1250 (1937). [L]
- [10] The Widths of Nuclear Energy Levels (with J. Manley and H. Goldsmith), *Phys. Rev.* **55**, 39 (1939).
- [11] The Neutron-Proton Scattering Cross Section (with V. Cohen and H. Goldsmith), *Phys. Rev.* **55**, 106 (1939). [L]
- [12] The Resonance Absorption of Slow Neutrons in Indium (with J. Manley and H. Goldsmith), *Phys. Rev.* **55**, 107 (1939). [L]
- [13] On the Neutron-Proton Interaction, *Phys. Rev.* **55**, 235 (1939). [A (Chicago 11/38)]
- [14] The Scattering of Neutrons by Hydrogen and Deuterium Molecules (with M. Hamermesh), *Phys. Rev.* **55**, 679 (1939). [A (New York 2/39)]
- [15] On Pair Emission in the Proton Bombardment of Fluorine (with J. R. Oppenheimer), *Phys. Rev.* **56**, 1066 (1939). [L]
- [16] Neutron-Deuteron Scattering Cross Section (with L. Motz), *Phys. Rev.* **57**, 161 (1940). [L]
- [17] The Scattering of Thermal Neutrons by Deuterons (with L. Motz), *Phys. Rev.* **58**, 26 (1940).
- [18] The Electromagnetic Properties of Mesotrons (with H. Corben), *Phys. Rev.* **58**, 191 (1940). [A (Seattle 6/40)]

---

\*We thank Kimball A. Milton for making available this list, which was originally compiled by him for *A Quantum Legacy: Seminal Papers of Julian Schwinger* (World Scientific, Singapore, 2000).

- [19] The Electromagnetic Properties of Mesotrons (with H. Corben), *Phys. Rev.* **58**, 953 (1940).
- [20] Neutron Scattering in Ortho- and Parahydrogen and the Range of Nuclear Forces, *Phys. Rev.* **58**, 1004 (1940). [L]
- [21] The Photodisintegration of the Deuteron (with W. Rarita), *Phys. Rev.* **59**, 215 (1941). [A (Pasadena 12/40)]
- [22] The Photodisintegration of the Deuteron (with W. Rarita and H. Nye) *Phys. Rev.* **59**, 209 (1941).
- [23] On the Neutron-Proton Interaction (with W. Rarita), *Phys. Rev.* **59**, 436 (1941).
- [24] On the Exchange Properties of the Neutron-Proton Interaction (with W. Rarita), *Phys. Rev.* **59**, 556 (1941).
- [25] On a Theory of Particles with Half-Integral Spin (with W. Rarita), *Phys. Rev.* **60**, 61 (1941). [L]
- [26] On the Interaction of Mesotrons and Nuclei (with J. R. Oppenheimer), *Phys. Rev.* **60**, 150 (1941).
- [27] The Theory of Light Nuclei (with E. Gerjuoy), *Phys. Rev.* **60**, 158 (1941). [A (Pasadena 6/41)]
- [28] On the Charged Scalar Mesotron Field, *Phys. Rev.* **60**, 159 (1941). [A (Pasadena 6/41)]
- [28a] On the Charged Scalar Mesotron Field [written in 1941, published in Wentzel Festschrift: *Quanta: Essays in Theoretical Physics Dedicated to Gregor Wentzel*, ed. P. G. O. Freund, C. J. Goebel, and Y. Nambu (University of Chicago Press, Chicago, 1970), p. 101].
- [29] The Quadrupole Moment of the Deuteron and the Range of Nuclear Forces, *Phys. Rev.* **60**, 164 (1941). [A (Pasadena 6/41)]
- [30] On Tensor Forces and the Theory of Light Nuclei (with E. Gerjuoy), *Phys. Rev.* **61**, 138 (1942).
- [31] On a Field Theory of Nuclear Forces, *Phys. Rev.* **61**, 387 (1942). [A (Princeton 12/41)]
- [32] On the Magnetic Moments of  $H^3$  and  $He^3$  (with R. Sachs), *Phys. Rev.* **61**, 732 (1942). [A (Baltimore 5/42)]
- [32a] On Radiation by Electrons in a Betatron, 1945, transcribed by M. A. Furman, preprint LBNL-39088, July 1996.
- [33] The Scattering of Slow Neutrons by Ortho and Para Deuterium (with M. Hamermesh), *Phys. Rev.* **69**, 145 (1946).
- [34] Polarization of Neutrons by Resonance Scattering in Helium, *Phys. Rev.* **69**, 681 (1946). [A (Cambridge 4/46)]
- [35] Electron Orbits in the Synchrotron (with D. Saxon), *Phys. Rev.* **69**, 702 (1946). [A (Cambridge 4/46)].

- [36] The Magnetic Moments of  $H^3$  and  $He^3$  (with R. Sachs), *Phys. Rev.* **70**, 41 (1946).
- [37] Electron Radiation in High Energy Accelerators, *Phys. Rev.* **70**, 798 (1946). [A (Invited, New York 9/46)]
- [38] Neutron Scattering in Ortho- and Parahydrogen (with M. Hamermesh), *Phys. Rev.* **71**, 678 (1947).
- [39] On the Radiation of Sound from a Unflanged Circular Pipe (with H. Levine), *Phys. Rev.* **72**, 742 (1947). [A (Stanford 7/47)]
- [40] A Variational Principle for Scattering Problems, *Phys. Rev.* **72**, 742 (1947). [A (Stanford 7/47)]
- [41] On the Radiation of Sound from an Unflanged Circular Pipe (with H. Levine), *Phys. Rev.* **73**, 383 (1948).
- [42] On the Polarization of Fast Neutrons, *Phys. Rev.* **73**, 407 (1948).
- [43] On Quantum-Electrodynamics and the Magnetic Moment of the Electron, *Phys. Rev.* **73**, 416 (1948). [L]
- [44] A Note on Saturation in Microwave Spectroscopy (with R. Karplus), *Phys. Rev.* **73**, 1020 (1948).
- [45] On the Electromagnetic Shift of Energy Levels (with V. Weisskopf), *Phys. Rev.* **73**, 1272 (1948). [A (New York 1/48)]
- [46] On the Theory of Diffraction by an Aperture in an Infinite Plane Screen. I, (with H. Levine), *Phys. Rev.* **74**, 958 (1948).
- [47] An Invariant Quantum Electrodynamics, *Phys. Rev.* **74**, 1212 (1948). [A (Washington 4/48)]
- [48] Variational Principles for Diffraction Problems (with H. Levine), *Phys. Rev.* **74**, 1212 (1948). [A (Washington 4/48)]
- [49] On Tensor Forces and the Variation-Iteration Method (with H. Feshbach and J. Eisenstein), *Phys. Rev.* **74**, 1223 (1948). [A (Washington 4/48)]
- [50] Quantum Electrodynamics I. A Covariant Formulation, *Phys. Rev.* **74**, 1439 (1948).
- [51] Radiative Correction to the Klein-Nishina Formula (with D. Feldman), *Phys. Rev.* **75**, 338 (1949). [A (Chicago 11/48)]
- [52] Quantum Electrodynamics II. Vacuum Polarization and Self Energy, *Phys. Rev.* **75**, 651 (1949).
- [53] On Radiative Corrections to Electron Scattering, *Phys. Rev.* **75**, 898 (1949). [L]
- [54] On the Theory of Diffraction by an Aperture in an Infinite Plane Screen. II, (with H. Levine), *Phys. Rev.* **75**, 1423 (1949).
- [55] On the Transmission Coefficient of a Circular Aperture (with H. Levine), *Phys. Rev.* **75**, 1608 (1949). [L]
- [56] On the Classical Radiation of Accelerated Electrons, *Phys. Rev.* **75**, 1912 (1949).

- [57] Quantum Electrodynamics III. The Electromagnetic Properties of the Electron—Radiative Corrections to Scattering, *Phys. Rev.* **76**, 790 (1949).
- [58] On the Charge Independence of Nuclear Forces, *Phys. Rev.* **78**, 135 (1950).
- [59] On the Self-Stress of the Electron, (with S. Borowitz and W. Kohn) *Phys. Rev.* **78**, 345 (1950).
- [60] Variational Principles for Scattering Processes. I. (with B. Lippmann), *Phys. Rev.* **79**, 469 (1950).
- [61] On the Theory of Electromagnetic Wave Diffraction by an Aperture in an Infinite Plane Conducting Screen (with H. Levine), *Comm. Pure Appl. Math.* **III 4**, 355 (1950). [Presented at 6/50 Symposium on the Theory of Electromagnetic Waves.]
- [62] Quantum Dynamics, *Science* **113**, 479 (1951). [A (NAS Washington 4/51)]
- [63] On the Representation of the Electric and Magnetic Fields Produced by Currents and Discontinuities in Wave Guides. I. (with N. Marcuvitz), *J. Appl. Phys.* **22**, 806 (1951).
- [64] On Gauge Invariance and Vacuum Polarization, *Phys. Rev.* **82**, 664 (1951).
- [65] The Theory of Quantized Fields. I, *Phys. Rev.* **82**, 914 (1951).
- [66] On the Green's Functions of Quantized Fields. I, II, *Proc. Natl. Acad. Sci. U.S.A.* **37**, 452, 455 (1951).
- [67] On a Phenomenological Neutron-Proton Interaction (with H. Feshbach), *Phys. Rev.* **84**, 194 (1951).
- [68] Electrodynamic Displacement of Atomic Energy Levels (with R. Karplus and A. Klein), *Phys. Rev.* **84**, 597 (1951). [L]
- [69] On Angular Momentum, 1952, later published in *Quantum Theory of Angular Momentum*, edited by L. C. Biedenharn and H. Van Dam, (Academic Press, New York, 1965), p. 229.
- [70] Electrodynamic Displacement of Atomic Energy Levels. II. Lamb Shift (with R. Karplus and A. Klein), *Phys. Rev.* **86**, 288 (1952).
- [71] Radiation Force and Torque (with H. Levine), *Phys. Rev.* **87**, 224 (1952). [A (Washington 5/52)]
- [72] On High Energy Nucleon Scattering and Isobars (with R. B. Raphael), *Phys. Rev.* **90**, 373 (1953). [A (Cambridge 1/53)], Harvard]
- [73] The Theory of Quantized Fields. II., *Phys. Rev.* **91**, 713 (1953).
- [74] The Theory of Quantized Fields. III., *Phys. Rev.* **91**, 728 (1953).
- [75] A Note on the Quantum Dynamical Principle, *Philos. Mag.* **44**, 1171 (1953).
- [76] The Theory of Quantized Fields. IV., *Phys. Rev.* **92**, 1283 (1953).
- [77] The Theory of Quantized Fields. V., *Phys. Rev.* **93**, 615 (1954).
- [78] The Quantum Correction in the Radiation by Energetic Accelerated Electrons, *Proc. Natl. Acad. Sci. U.S.A.* **40**, 132 (1954).

- [79] Use of Rotating Coordinates in Magnetic Resonance Problems (with I. I. Rabi and N. Ramsey), *Rev. Mod. Phys.* **26**, 167 (1954).
- [80] The Theory of Quantized Fields. VI., *Phys. Rev.* **94**, 1362 (1954).
- [81] Dynamical Theory of K Mesons, *Phys. Rev.* **104**, 1164 (1956).
- [82] A Theory of the Fundamental Interactions, *Ann. Phys. (N.Y.)* **2**, 407 (1957).
- [83] *Quantum Electrodynamics*, editor (Dover, New York, 1958).
- [83a] Structure of Green's Functions, in *High Energy Physics*, Proceedings of the 7th Annual Rochester Conference, April 15–19, 1957, ed. G. Asoli, G. Feldman, L. J. Koester, Jr., R. Newton, W. Riesenfeld, M. Ross, and R. G. Sachs, (Interscience, New York, 1957) pp. IV-1, IV-28.
- [84] Spin, Statistics and the TCP Theorem, *Proc. Natl. Acad. Sci. U.S.A.* **44**, 223 (1958).
- [85] Addendum to Spin, Statistics and the TCP Theorem, *Proc. Natl. Acad. Sci. U.S.A.* **44**, 617 (1958).
- [86] On the Euclidean Structure of Relativistic Field Theory, *Proc. Natl. Acad. Sci. U.S.A.* **44**, 956 (1958).
- [87] Four-Dimensional Euclidean Formulation of Quantum Field Theory, *Proceedings of the 1958 International Conference on High Energy Physics*, CERN, Geneva, 1958, p. 134.
- [88] Euclidean Quantum Electrodynamics, *Phys. Rev.* **115**, 721 (1959).
- [89] Theory of Many-Particle Systems. I. (with P. C. Martin), *Phys. Rev.* **115**, 1342 (1959).
- [90] Field Theory Commutators, *Phys. Rev. Lett.* **3**, 296 (1959).
- [91] The Algebra of Microscopic Measurement, *Proc. Natl. Acad. Sci. U.S.A.* **45**, 1542 (1959).
- [92] Field Theory Methods, 1959 Brandeis University Summer Institute in Theoretical Physics.
- [93] The Geometry of Quantum States, *Proc. Natl. Acad. Sci. U.S.A.* **46**, 257 (1960).
- [94] Field Theory of Unstable Particles, *Ann. Phys. (N.Y.)* **9**, 169 (1960).
- [95] Euclidean Gauge Transformation, *Phys. Rev.* **117**, 1407 (1960).
- [96] Unitary Operator Bases, *Proc. Natl. Acad. Sci. U.S.A.* **46**, 570 (1960).
- [97] Unitary Transformations and the Action Principle, *Proc. Natl. Acad. Sci. U.S.A.* **46**, 883 (1960).
- [98] The Special Canonical Group, *Proc. Natl. Acad. Sci. U.S.A.* **46**, 1401 (1960).
- [99] Field Theory Methods in Non-Field Theory Contexts, 1960 Brandeis University Summer Institute in Theoretical Physics, Lecture Notes, p. 223.
- [100] On the Bound States of a Given Potential, *Proc. Natl. Acad. Sci. U.S.A.* **47**, 122 (1961).
- [101] Brownian Motion of a Quantum Oscillator, *J. Math. Phys.* **2**, 407 (1961).

- [102] Quantum Variables and the Action Principle, *Proc. Natl. Acad. Sci. U.S.A.* **47**, 1075 (1961).
- [103] Spin and Statistics (with L. Brown), *Prog. Theor. Phys. (Kyoto)* **26**, 917 (1961).
- [104] Gauge Invariance and Mass, *Phys. Rev.* **125**, 397 (1962).
- [105] Non-Abelian Gauge Fields. Commutation Relations, *Phys. Rev.* **125**, 1043 (1962).
- [106] Exterior Algebra and the Action Principle. I., *Proc. Natl. Acad. Sci. U.S.A.* **48**, 603 (1962).
- [107] Non-Abelian Gauge Fields. Relativistic Invariance, *Phys. Rev.* **127**, 324 (1962).
- [108] Gauge Invariance and Mass. II., *Phys. Rev.* **128**, 2425 (1962).
- [109] Quantum Variables and Group Parameters, *Il Nuovo Cimento* **30**, 278 (1963).
- [110] Non-Abelian Gauge Fields. Lorentz Gauge Formulation, *Phys. Rev.* **130**, 402 (1963).
- [111] Commutation Relations and Conservation Laws, *Phys. Rev.* **130**, 406 (1963).
- [112] Energy and Momentum Density in Field Theory, *Phys. Rev.* **130**, 800 (1963).
- [113] Quantized Gravitational Field, *Phys. Rev.* **130**, 1253 (1963).
- [114] Quantized Gravitational Field. II., *Phys. Rev.* **132**, 1317 (1963).
- [115] Gauge Theories of Vector Particles, *Theoretical Physics* (Trieste Seminar, 1962), (IAEA, Vienna, 1963), p. 89.
- [116] Coulomb Green's Function, *J. Math. Phys.* **5**, 1606 (1964).
- [117] Non-Abelian Vector Gauge Fields and the Electromagnetic Field, *Rev. Mod. Phys.* **36**, 609 (1964).
- [118] Field Theory of Matter, *Phys. Rev.* **135**, B816 (1964).
- [119] A Ninth Baryon, *Coral Gables Conference on Symmetry Principles at High Energy*, 1964, edited by B. Kursunoglu and A. Perlmutter, (Freeman, San Francisco, 1964), p. 127.
- [120] A Ninth Baryon?, *Phys. Rev. Lett.* **12**, 237 (1964).
- [121]  $\Delta T = 3/2$  Nonleptonic Decay, *Phys. Rev. Lett.* **12**, 630 (1964).
- [122] Broken Symmetries and Weak Interactions, *Phys. Rev. Lett.* **13**, 355 (1964).
- [123] Broken Symmetries and Weak Interactions. II., *Phys. Rev. Lett.* **13**, 500 (1964).
- [124] Field Theory of Matter. II., *Phys. Rev.* **136**, B1821 (1964).
- [124a] The Future of Fundamental Physics, in *Nature of Matter: Purposes of High Energy Physics*, edited by L. Yuan, (Brookhaven National Laboratory, 1964).
- [125] Field Theory of Particles, *Lectures on Particles and Field Theory* (1964 Brandeis Lectures), edited by S. Deser and K. Ford, (Prentice-Hall, Englewood Cliffs, N.J., 1965), p. 145.

- [126] Field Theory of Matter, *Proceedings of the 12th International Conference on High Energy Physics*, Dubna, 1964, (Atomizdat, Moscow, 1966), Vol. 1, p. 771.
- [127] Field Theory of Matter. III. Phenomenological Field Theory, *Coral Gables Conference on Symmetry Principles at High Energy*, 1965, edited by B. Kursunoglu, A. Perlmutter, and I. Sakmar, (Freeman, San Francisco, 1965), p. 372.
- [128] Field Theory of Matter. IV., *Phys. Rev.* **140**, B158 (1965).
- [129] Magnetic Charge and Quantum Field Theory, *Phys. Rev.* **144**, 1087 (1966).
- [130] Magnetic Charge and Quantum Field Theory, *Coral Gables Conference on Symmetry Principles at High Energy*, 1966, edited by A. Perlmutter, J. Wojtaszek, G. Sudarshan, and B. Kursunoglu, (Freeman, San Francisco, 1966), p. 233.
- [131] Lectures on Quantum Field Theory, Coral Gables, 1966, University of Miami, 1967.
- [132] Relativistic Quantum Field Theory, Nobel Lecture, in *Nobel Lectures—Physics, 1963–1970*, (Elsevier, Amsterdam, 1972). [Printed in *Physics Today*, June 1966.]
- [133] Electric and Magnetic-Charge Renormalization. I., *Phys. Rev.* **151**, 1048 (1966).
- [134] Electric and Magnetic-Charge Renormalization. II., *Phys. Rev.* **151**, 1055 (1966).
- [135] Particles and Sources, *Phys. Rev.* **152**, 1219 (1966). [Reprinted in *1966 Tokyo Summer Lectures in Field Theory*, ed. G. Takeda and A. Fuji (Syokabō, Tokyo, 1967).]
- [136] Sourcery, *Coral Gables Conference on Symmetry Principles at High Energy*, 1967, edited by A. Perlmutter and B. Kursunoglu, (Freeman, San Francisco, 1967), p. 180.
- [137] Chiral Dynamics, *Phys. Lett.* **24B**, 473 (1967).
- [138] Mass Empirics, *Phys. Rev. Lett.* **18**, 797 (1967).
- [139] Partial Symmetry, *Phys. Rev. Lett.* **18**, 923 (1967).
- [139a] Back to the Source, in *Proceedings of the 1967 International Conference on Particles and Fields*, ed. C. R. Hagen, G. Guralnik, and V. A. Mathur (Interscience, New York, 1967), p. 128.
- [140] Photons, Mesons and Form Factors, *Phys. Rev. Lett.* **19**, 115 (1967).
- [141] Radiative Corrections in  $\beta$  Decay, *Phys. Rev. Lett.* **19**, 1501 (1967).
- [142] Sources and Electrodynamics, *Phys. Rev.* **158**, 1391 (1967).
- [143] Boson Mass Empirics, *Phys. Rev. Lett.* **20**, 516 (1968).
- [144] Gauge Fields, Sources and Electromagnetic Masses, *Phys. Rev.* **165**, 1714 (1968); *Phys. Rev.* **167**, 1546 (1968).

- [145] Chiral Transformations, *Phys. Rev.* **167**, 1432 (1968).
- [146] Sources and Gravitons, *Phys. Rev.* **173**, 1264 (1968).
- [147] Sources and Magnetic Charge, *Phys. Rev.* **173**, 1536 (1968).
- [148] *Discontinuities in Wave Guides* (with D. Saxon) (Gordon and Breach, New York, 1968).
- [149] *Particles and Sources* (Gordon and Breach, New York, 1969). [1967 Brandeis Lectures]
- [150] A Magnetic Model of Matter, *Science* **165**, 757 (1969).
- [151] Theory of Sources, *Contemporary Physics* (Trieste Symposium 1968), (IAEA, Vienna, 1969), Vol. 11, p. 59.
- [152] *Quantum Kinematics and Dynamics* (Benjamin, New York, 1970).
- [153] *Particles, Sources and Fields*, Vol. I (Addison-Wesley, Reading, Mass., 1970).
- [154] Unit-Spin Propagation Functions and Form Factors, *Phys. Rev. D* **3**, 1967 (1971).
- [155] How Massive is the  $W$  Particle?, *Phys. Rev. D* **7**, 908 (1973).
- [156] Classical Radiation of Accelerated Electrons II. A Quantum Viewpoint, *Phys. Rev. D* **7**, 1696 (1973).
- [157] How to Avoid  $\Delta Y = 1$  Neutral Currents, *Phys. Rev. D* **8**, 960 (1973).
- [158] *Particles, Sources and Fields*, Vol. II (Addison-Wesley, Reading, Mass., 1973).
- [159] Radiative Polarization of Electrons, (with W.-y. Tsai), *Phys. Rev. D* **9**, 1843 (1974).
- [160] A Report on Quantum Electrodynamics, in *The Physicist's Conception of Nature*, edited by J. Mehra (Reidel, Dordrecht, 1973), p. 413.
- [161] Spectral Forms for Three-Point Functions, *Phys. Rev. D* **9**, 2477 (1974).
- [162] Precession Tests of General Relativity—Source Theory Derivations, *Am. J. Phys.* **42**, 507 (1974).
- [163] Spin Precession—A Dynamical Discussion, *Am. J. Phys.* **42**, 510 (1974).
- [164] Photon Propagation Function: Spectral Analysis of Its Asymptotic Form, *Proc. Natl. Acad. Sci. U.S.A.* **71**, 3024 (1974).
- [165] Photon Propagation Function: A Comparison of Asymptotic Functions, *Proc. Natl. Acad. Sci. U.S.A.* **71**, 5047 (1974).
- [166] Interpretation of a Narrow Resonance in  $e^+e^-$  Annihilation, *Phys. Rev. Lett.* **34**, 37 (1975).
- [167] Source Theory Viewpoints in Deep Inelastic Scattering, *Proc. Natl. Acad. Sci. U.S.A.* **72**, 1 (1975). [Reprinted in Schladming lectures 2/75: *Acta Phys. Austriaca Suppl.* XIV, 471 (1975).]
- [168] Source Theory Discussion of Deep Inelastic Scattering with Polarized Particles, *Proc. Natl. Acad. Sci. U.S.A.* **72**, 1559 (1975).
- [169] Psi Particles and Dyons, *Science* **188**, 1300 (1975).



- [170] Resonance Interpretation of the Decay of  $\psi'(3.7)$  into  $\psi(3.1)$ , (with K. A. Milton, W.-y. Tsai and L. L. DeRaad, Jr.), *Phys. Rev. D* **12**, 2617 (1975).
- [171] Pion Spectrum in Decay of  $\psi'(3.7)$  to  $\psi(3.1)$ , (with K. A. Milton, W.-y. Tsai and L. L. DeRaad, Jr.), *Proc. Natl. Acad. Sci. U.S.A.* **72**, 4216 (1975).
- [172] Magnetic Charge and the Charge Quantization Condition, *Phys. Rev. D* **12**, 3105 (1975).
- [173] Source Theory Analysis of Electron-Positron Annihilation Experiments, *Proc. Natl. Acad. Sci. U.S.A.* **72**, 4725 (1975).
- [174] Casimir Effect in Source Theory, *Lett. Math. Phys.* **1**, 43 (1975).
- [175] Magnetic Charge, in *Gauge Theories and Modern Field Theory*, edited by R. Arnowitt and P. Nath (MIT Press, Cambridge, Mass., 1976), p. 337.
- [176] Classical and Quantum Theory of Synergic Synchrotron-Cerenkov Radiation (with W.-y. Tsai and T. Erber), *Ann. Phys. (N.Y.)* **96**, 303 (1976).
- [177] Gravitons and Photons: The Methodological Unification of Source Theory, *Gen. Rel. and Grav.* **7**, 251 (1976). [2nd prize Gravity Research Foundation]
- [178] Deep Inelastic Scattering of Leptons, *Proc. Natl. Acad. Sci. U.S.A.* **73**, 3351 (1976).
- [179] Deep Inelastic Scattering of Charged Leptons, *Proc. Natl. Acad. Sci. U.S.A.* **73**, 3816 (1976).
- [179a] Deep Inelastic Scattering of Polarized Electrons—A Dissident View, Talk presented at the *Symposium on High Energy Physics with Polarized Beams and Targets*, Argonne Natl. Lab., August 22-27, 1976. (New York, 1976) pp. 288-305.
- [180] Nonrelativistic Dyon-Dyon Scattering (with K. A. Milton, W.-y. Tsai, L. L. DeRaad, Jr., and D. C. Clark), *Ann. Phys. (N.Y.)* **101**, 451 (1976).
- [181] Adler's Sum Rule in Source Theory, *Phys. Rev. D* **15**, 910 (1977).
- [182] Deep Inelastic Neutrino Scattering and Pion-Nucleon Cross Sections, *Phys. Lett.* **67B**, 89 (1977).
- [183] Deep Inelastic Sum Rules in Source Theory, *Nucl. Phys.* **B123**, 223 (1977).
- [184] The Majorana Formula, *Trans. N. Y. Acad. Sci.* **38**, 170 (1977). (Rabi Festschrift)
- [185] Introduction and Selected Topics in Source Theory, in *Proceedings of Recent Developments in Particle and Field Theory*, Tübingen 1977 (Braunschweig, 1979), pp. 227-333.
- [186] New Approach to Quantum Correction in Synchrotron Radiation (with W.-y. Tsai), *Ann. Phys. (N.Y.)* **110**, 63 (1978).
- [187] Casimir Effect in Dielectrics (with L. L. DeRaad, Jr. and K. A. Milton) *Ann. Phys. (N.Y.)* **115**, 1 (1978).
- [188] Casimir Self-Stress on a Perfectly Conducting Spherical Shell (with K. A. Milton and L. L. DeRaad, Jr.), *Ann. Phys. (N.Y.)* **115**, 388 (1978).

- [189] Introduction to Source Theory, with Applications to High Energy Physics, *Proceedings of the Seventh Particle Physics Conference* (University of Hawaii Press, 1978), pp. 341-481.
- [190] Multispinor Basis of Fermi-Bose Transformation, *Ann. Phys. (N.Y.)* **119**, 192 (1979).
- [191] Relativistic Comets, *Kinam* **1**, 87 (1979).
- [192] Thomas-Fermi Model: The Leading Correction, *Phys. Rev. A* **22**, 1827 (1980).
- [193] Thomas-Fermi Model: The Second Correction, *Phys. Rev. A* **24**, 2353 (1981).
- [194] New Thomas-Fermi Theory: A Test (with L. DeRaad, Jr.), *Phys. Rev. A* **25**, 2399 (1982).
- [195] Thomas-Fermi Revisited: The Outer Regions of the Atom (with B.-G. Englert), *Phys. Rev. A* **26**, 2322 (1982).
- [196] The Statistical Atom: A Study. University of Miami, P.A.M. Dirac Birthday Volume, 1982.
- [197] Quantum Electrodynamics—An Individual View, *J. Physique* **43**, 409 (1982).
- [198] Electromagnetic Mass Revisited, *Found. Physics* **13**, 373 (1983).
- [199] Renormalization Theory of Quantum Electrodynamics: An Individual View, in *The Birth of Particle Physics* (Cambridge University Press, 1983), p. 329. (Slightly edited version of [197].)
- [200] Two Shakers of Physics, in *The Birth of Particle Physics*, (Cambridge University Press, 1983), p. 354. [Tomonaga Memorial lecture delivered 7/8/80 in Tokyo.]
- [201] Statistical Atom: Handling the Strongly Bound Electrons (with B.-G. Englert), *Phys. Rev. A* **29**, 2331 (1984).
- [202] Statistical Atom: Some Quantum Improvements (with B.-G. Englert), *Phys. Rev. A* **29**, 2339 (1984).
- [203] New Statistical Atom: A Numerical Study (with B.-G. Englert), *Phys. Rev. A* **29**, 2353 (1984).
- [204] Semiclassical Atom (with B.-G. Englert), *Phys. Rev. A* **32**, 26 (1985).
- [205] Linear Degeneracy in the Semiclassical Atom (with B.-G. Englert), *Phys. Rev. A* **32**, 36 (1985).
- [206] Atomic-Binding-Energy Oscillations (with B.-G. Englert), *Phys. Rev. A* **32**, 47 (1985).
- [207] *Einstein's Legacy: The Unity of Space and Time*, Scientific American Library, Vol. 16 (1985). (Unabridged Dover edition 2002.)
- [208] Is Spin Coherence Like Humpty Dumpty? I. Simplified Treatment (with B.-G. Englert and M. O. Scully), *Found. Physics* **18**, 1045 (1988) [David Bohm festschrift].
- [208a] Hermann Weyl and Quantum Kinematics, in *Exact Sciences and Their Philosophical Foundations*, (Verlag Peter Lang, Frankfurt, 1988).

- [209] Is Spin Coherence Like Humpty Dumpty? II. General Theory (with M. O. Scully and B.-G. Englert), *Z. Phys. D* **10**, 135 (1988). [In Memorium Otto Stern, on the 100th anniversary of his birth.]
- [210] Spin Coherence and Humpty Dumpty. III. The Effects of Observation (with M. O. Scully and B.-G. Englert), *Phys. Rev. A* **40**, 1775 (1989).
- [210a] Thomas-Fermi Quantization, Classical Orbits, and the Systematics of the Periodic Table (with B.-G. Englert), in *Classical Dynamics in Atomic and Molecular Physics*, Brioni, Yugoslavia, August 30–September 2, 1988, ed. T. Grozdanov, P. Grujić, and P. Krstić (World Scientific, Singapore, 1989), p. 371.
- [211] *Particles, Sources, and Fields* (3 volumes) (Addison-Wesley, Redwood City, CA, 1989).
- [212] A Path to Quantum Electrodynamics, *Physics Today*, February 1989. [Reprinted in *Most of the Good Stuff: Memories of Richard Feynman*, edited by L. M. Brown and J. S. Rigden (AIP, New York, 1993), p. 59.]
- [213] Cold Fusion: A Hypothesis, *Z. Nat. Forsch. A* **45A**, 756 (1990). [L]
- [214] Nuclear Energy in an Atomic Lattice I, *Z. Phys. D* **15**, 221 (1990).
- [215] Anomalies in Quantum Field Theory, in *Superworld III*, Proceedings of the 26th Course of the International School of Subnuclear Physics, Erice, Italy, 7–15 August 1988 ed. A. Zichichi (Plenum, New York, 1990).
- [216] Phonon Representations, *Proc. Natl. Acad. Sci. U.S.A.* **87**, 6983 (1990).
- [217] Phonon Dynamics, *Proc. Natl. Acad. Sci. U.S.A.* **87**, 8370 (1990).
- [218] Reflecting Slow Atoms from a Micromaser Field (with B.-G. Englert, A. O. Barut, and M. O. Scully), *Europhysics Lett.* **14**, 25 (1991).
- [218a] Cold Fusion—Does It Have a Future, in *Evolutional Trends of Physical Science* (Springer, 1991).
- [219] Nuclear Energy in an Atomic Lattice, *Prog. Theor. Phys.* **85**, 711 (1991).
- [220] Phonon Green's Function, *Proc. Natl. Acad. Sci. U.S.A.* **88**, 6537 (1991).
- [221] Casimir Effect in Source Theory II, *Lett. Math. Phys.* **24**, 59 (1992).
- [222] Casimir Effect in Source Theory III, *Lett. Math. Phys.* **24**, 227 (1992).
- [223] Casimir Energy for Dielectrics, *Proc. Natl. Acad. Sci. U.S.A.* **89**, 4091 (1992).
- [224] Casimir Energy for Dielectrics: Spherical Geometry, *Proc. Natl. Acad. Sci. U.S.A.* **89**, 11118 (1992).
- [225] Casimir Light: A Glimpse, *Proc. Natl. Acad. Sci. U.S.A.* **90**, 958 (1993).
- [226] Casimir Light: The Source, *Proc. Natl. Acad. Sci. U.S.A.* **90**, 2105 (1993).
- [227] Casimir Light: Photon Pairs, *Proc. Natl. Acad. Sci. U.S.A.* **90**, 4505 (1993).
- [228] Casimir Light: Pieces of the Action, *Proc. Natl. Acad. Sci. U.S.A.* **90**, 7285 (1993).

- [229] The Greening of Quantum Field Theory: George and I, Lecture at Nottingham, July 14, 1993 (hep-ph/9310283). Printed in *Julian Schwinger: The Physicist, the Teacher, the Man*, ed. Y. J. Ng (World Scientific, Singapore, 1996).
- [230] Casimir Light: Field Pressure, *Proc. Natl. Acad. Sci. U.S.A.* **91**, 6473 (1994).
- [231] Quantum Uncertainty Principle: No Loopholes, *Science* **264**, 1830 (1994).  
[L]
- [232] *Classical Electrodynamics* (with L. L. DeRaad, Jr., K. A. Milton, and W.-y. Tsai) (Perseus Books, Reading, MA, 1998).
- [233] *Quantum Mechanics. Formalism of Atomic Measurements* (edited by B.-G. Englert, Springer, 2001; 2nd printing 2003).

Compiled by K. A. Milton, 1978, 1994–99.  
Edited and updated by B.-G Englert, 2014.