Authors

Anthony J. Anello

B.E.E., 1959, Manhattan College. Joined IBM Data Systems Division in 1959 for work in standard circuit design. Subsequently went on leave of absence, 1959–1962, and joined U. S. Air Force as Ground Electronics Officer. Is presently engaged in work in data communications, Data Systems Division in Poughkeepsie. Member of Eta Kappa Nu and Epsilon Sigma Pi.

Gene A. Baraff

A.B., 1952, Columbia University; M.S. in Nuclear Engineering, 1956, North Carolina State College; Ph.D., 1961, New York University. Worked on radiation detection, U. S. Signal Corps, 1952–1954; on nuclear reactor design at Astra Associates, 1956–1958. Bell Telephone Laboratories, 1961 to present. Primary interest has been hot electron transport theory in semiconductors.

Dale M. Brown

B.S., 1953, University of Michigan; M.S. in Physics, 1955, University of Michigan, while working on anti-jamming countermeasure communication research at University of Michigan Engineering Research Institute; Ph.D. in Physics, 1960, Purdue University (transport properties of semiconductors and hot carriers). Joined General Electric Research Laboratory in 1961. Member of Sigma Pi Sigma, Sigma Xi and American Physical Society.

Morrel H. Cohen

B.S. in Physics, 1947, Worcester Polytechnic Institute; M.A. in Physics, 1948, Dartmouth College; Ph.D. in Physics, 1952, University of California, Berkeley. Instructor, University of Chicago, 1952–1954; Assistant Professor 1954–1957; Associate Professor, 1957–1960; Professor, 1960 to present. Working in the area of solid state physics and the physics of condensed matter generally; interested in understanding, in fundamental microscopic terms, the observed properties of solids, liquids, gasses, etc. Guggenheim Fellow, 1957–1958. Fellow, American Physical Society and member, American Association for the Advancement of Science and Sigma Xi.

W. Ross Datars

B.Sc., 1955; M.Sc. in Physics, 1956, McMaster University; Ph.D., 1959, University of Wisconsin. Worked at Defence Research Telecommunications Establishment, Ottawa, 1959–1962; has been Assistant Professor of Physics at McMaster University, 1962 to present. Primary interests have been the electronic properties of semimetals and metals.

Mildred S. Dresselhaus

A.B., 1951, Hunter College; A.M., 1953, Radcliffe College; Ph.D., 1958, University of Chicago. Postdoctoral Fellow at

Cornell University, 1958–1960. Has been at MIT, Lincoln Laboratory, since 1960. Activities include microwave studies of superconductors, optical properties of metals and semimetals at high magnetic fields. Member of the American Physical Society.

Leopoldo M. Falicov

Licenciado in Chemistry, 1957, University of Buenos Aires, Argentina; Ph.D. in Physics, 1958, Institute of Physics, Bariloche, University of Cuyo, Argentina; Ph.D. in Physics, 1961, University of Cambridge, England. Demonstrator in Physics, University of Buenos Aires, 1958; Research Associate, University of Chicago, 1960–1961; Instructor in Physics, 1961–1962; Assistant Professor in Physics, 1960 to present; working in the area of the electron theory of metals and superconductivity. Member, American Physical Society and American Association for the Advancement of Science. Alfred P. Sloan Research Fellow. 1964.

George J. Y. Fan

B.S., 1957; M.S., 1958; Engineering Degree, 1960, Stanford University. Joined Advanced Systems Development Division in 1960 and Thomas J. Watson Research Center as a staff member in 1961. Since then he has done work in magneto-optics, lasers and magnetic recording.

Richard L. Garwin

B.S. in Physics, 1947, Case Institute of Technology; M.S. in Physics, 1948, and Ph.D. in Physics, 1949, both at University of Chicago. Assistant Professor of Physics at University of Chicago until 1952. Joined IBM in 1952 and has worked on liquid helium, superconductors and superconducting devices, mesons, and parity at IBM Watson Laboratories in New York City. Present interests are research in liquid helium and solid He³, and consultation on scientific problems. Appointed by President John F. Kennedy to the President's Science Advisory Committee in 1962 (term expires December, 1965). Adjunct Professor of Physics at Columbia University since 1957.

Stuart J. Golin

S.M. (Phi Beta Kappa) in Physics, 1959; Ph.D. in Physics, 1963, University of Chicago. National Science Foundation Fellow 1959-60, 1960-61, 1961-62, 1962-63. Research Associate, University of Chicago, 1963-1964. Working in the field of the band theory of metals and semiconductors. National Science Foundation Postdoctoral Fellow, 1964.

Herbert J. Greenberg

B.S., 1940; M.A. in Mathematics, 1941, Northwestern University; Ph.D. in Applied Mathematics, 1946, Brown University. During World War II was a member of the OSRD Ap-

361

plied Mathematics group at Brown University. Subsequently Research Associate and Assistant Professor of Applied Mathematics at Brown University until 1949. From 1949 to 1955. Assistant and then Associate Professor of Mathematics at Carnegie Institute of Technology. From 1955 to 1958, Associate Professor of Mathematics in the Institute of Mathematical Sciences at New York University and Associate Director of the AEC Applied Mathematics and Computing Center at N.Y.U. Joined IBM in 1958 at the Thomas J. Watson Research Center and is presently Assistant Director of the Mathematical Sciences Department. Principal research in continuum mechanics and numerical analysis, especially in the mathematical theory of plasticity, variational methods, and the solution of initial and boundary value problems for partial differential equations. Member of Phi Beta Kappa, Sigma Xi, RESA, SIAM, and American Association for the Advancement of Science.

John J. Hall

B.S., 1956; M.A., 1958; Ph.D., 1962, Columbia University. Consultant, IBM Watson Laboratory, 1962–1963. Joined IBM at the Thomas J. Watson Research Center in 1963. Primary interest is the electronic structure of solids, including piezoresistance and ultrasonic studies of semiconductors. Member of American Physical Society and Sigma Xi.

L. Charles Hebel

B.A., 1952, DePauw University; M.S., 1954 and Ph.D., 1957, University of Illinois. Joined Bell Telephone Laboratories in 1957. Earlier research on spin temperature, nuclear relaxation in normal and superconducting metals; recent interests include electronic properties of metals in magnetic fields, especially plasma properties. Member of Sigma Xi and Fellow of the American Physical Society.

Ryogo Hirota

B.Sc., 1955, and M.Sc., 1957, Kyushu University; Ph.D., 1961, Northwestern University. Joined the Laboratories RCA Inc., Tokyo, in 1962. Research on solid state theory, particularly transport in solid state plasmas and semiconductors.

Rudolf Jaggi

Ph.D. in Physics, 1959, Swiss Federal Institute of Technology, where he worked in solid state physics. Joined IBM in 1959 and is currently at the IBM Research Laboratory in Zürich. Member of the Swiss Physical Society.

A. L. Jain

B.Sc. (Hons.), 1950; M.Sc., 1952, University of Delhi; Ph.D., 1959, University of Chicago. Postdoctoral Fellow at Case Institute of Technology, 1960–1961. Research Staff member at IBM Research Laboratory, Zurich, since 1961. Principal interests are electron transport properties and ultrasonic studies in semimetals and semiconductors. Member of American Physical Society and Sigma Xi.

Keith L. Johnson

B.S., 1954, Stanford University, and M.S., Mathematics, 1955, UCLA; Fulbright scholarship to Mainz, Germany, 1959-1961. In 1961 joined IBM General Products Division,

Engineering and Scientific Computation Laboratory at San Jose. Recent work mainly in process control. Member ACM and Pi Mu Epsilon.

Claude A. Klein

B.Sc. in Mathematics and Physics, 1948, University of Strasbourg, France; M.Sc. in Electrical Engineering, 1951, École Supérieure d'Électricité, Paris; Ph.D. in Physics, 1955, Sorbonne. French Atomic Energy Commission, 1955–57. Has been with the Research Division of Raytheon Company, Waltham, Mass., since June, 1957. Now a Principal Scientist, Dr. Klein is engaged in research on transport properties of semiconductors and high-temperature materials. Visiting lecturer in nuclear science at Lowell Technological Institute, 1962–63. Member of the American Institute of Physics, the Institute of Electrical and Electronics Engineers, and the American Institute of Aeronautics and Astronautics.

Seymour H. Koenig

B.S., 1949; M.A., 1951; Ph.D. in Physics, 1952, Columbia University. Assistant in Physics, 1949–1951; AEC Predoctoral Fellow, 1951–1952. Joined IBM Watson Laboratory, 1952. Until recently worked mainly on low-temperature electrical transport in semiconductors and semimetals. Adjunct Professor of Electrical Engineering, Columbia University. Fellow, American Physical Society. Consultant to Los Alamos Scientific Laboratory.

Alan G. Konheim

B.E.E., 1955; M.S. in Mathematics, 1957, Polytechnic Institute of Brooklyn; Ph.D. in Mathematics, 1960, Cornell University. Joined IBM in 1960 at the Thomas J. Watson Research Center. Principal research in probability theory and abstract analysis. Member of Tau Beta Pi, Eta Kappa Nu, Sigma Xi, AMS, MAA, and SIAM.

Joel W. McClure, Jr.

B.S., 1949, and M.S., 1951, Northwestern University; Ph.D. in Physics, 1954, University of Chicago. University of Oregon, 1954–1956; Union Carbide Corporation Research Center, Parma, Ohio, 1956–1961; University of Oregon, 1961 to present. Research on solid state theory, particularly effect of energy band structure upon electron transport and diamagnetism. Fellow, American Physical Society and member, American Association of Physics Teachers and Sigma Xi.

Alan L. McWhorter

B.S. in E.E., 1951, University of Illinois; Sc.D. in E.E., 1955, MIT. Joined MIT, Lincoln Laboratory in 1955. Acting Head, Solid State Division, Lincoln Laboratory, and Associate Professor, Electrical Engineering Department, MIT. Present research activities are on plasma effects in solids and semiconductor lasers. Member of American Physical Society, IEEE, Sigma Xi, Tau Beta Pi.

John G. Mavroides

B.S., 1944, Tufts University; M.S. and Ph.D., 1953, Brown University. Technical and Tactical Electronics Officer, U.S.N.R., 1944-1946; engaged in research, design and

development of underwater communications and sonar devices at U.S.N. Underwater Sound Laboratory, New London, Connecticut, 1946–1949. Research assistant (1950–1951) and research fellow (1951–1952), Brown University. Joined M.I.T. Lincoln Laboratory in 1952. Presently leader of the Solid State Spectroscopy Group. Is concerned with the investigation of electronic band structure of solids. Member of the American Physical Society, Tau Beta Pi and Sigma Xi.

William G. May

S.B., S.M. in E.E., 1960, MIT. Now an Instructor in the Department of Electrical Engineering at MIT. Is presently engaged in Ph.D. thesis research on plasma waves in bismuth at MIT Lincoln Laboratory. Member of Eta Kappa Nu, Tau Beta Pi; associate member of Sigma Xi; student member of IEEE.

Albert H. Mitchell

B.S. summa cum laude in Physics, 1952, University of San Francisco; M.S., 1954, and Ph.D. in Theoretical Physics, 1956, University of California, Berkeley. Teaching and Research Assistant, University of California, Berkeley, 1952 through 1956. National Science Foundation Fellow. Joined IBM Research in 1956 working on problems in theoretical physics, numerical analysis and programming. Has worked in the Federal Systems Division in fields of applied mathematics and systems analysis and in the General Products Division in fields of numerical analysis and programming. He is presently Manager, Computer Systems and Applications Department, General Products Division Development Laboratory, San Jose. Member of the American Mathematical Society, American Physical Society, Association for Computing Machinery, Society for Industrial and Applied Mathematics, American Association of Advancement for Science, and Sigma Xi.

Ernest G. Newman

Ph.D., 1957, Columbia University. Joined IBM in 1956 in Poughkeepsie where he served in a number of engineering assignments, his last one being Technical Program Manager, Display and Image Processing Development. Joined in 1963 the General Products Division Technical Development staff in Harrison and was transferred the latter part of 1963 to San Jose as Technical Manager of Measurement Technology. Received the Invention Achievement Award in January, 1963. Member of Sigma Xi, IEEE, ASME and ACM.

John M. Rowell

B.A., 1957; M.A., D. Phil., 1961 at the University of Oxford after research on semiconductors under B. V. Rollin. Joined Bell Telephone Laboratories in 1961 and has since been engaged in studies of tunneling in superconductor and semiconductor junctions.

Albert C. Ruocchio

A.B., 1958, Columbia College; B.S. in Electrical Engineering, 1959; M.S. in Electrical Engineering, 1961, Columbia School of Engineering. Teaching Assistant in Electrical Engineering, Columbia University 1959–1961. Was with the IBM Data Systems Division for the summers of 1959 and

1960. Joined Data Systems Division, Poughkeepsie, in 1961 and is currently working in the data communications area. Secretary of the Poughkeepsie Audio Society and member of IEEE, ACM and AES.

Walter Schillinger

B.S. in Engineering, 1960, The Cooper Union. Joined IBM Watson Laboratory in 1956, and worked on electrical conduction in semiconductors. Member of Tau Beta Pi.

Searl J. Silverman

Ph.D., 1953, Syracuse University; worked in field of semiconductor physics. From 1954–1960 was Staff Member at Bell Telephone Laboratories, primarily concerned with growth and evaluation of single crystal silicon. Since 1960 has been at General Electric Research Laboratory, working on transport phenomena in compound semiconductors.

George E. Smith

B.S., 1955, University of Pennsylvania; M.S., 1956 and Ph.D., 1959, in Physics, University of Chicago. Joined Bell Telephone Laboratories in 1959. Primary interest has been the electronic properties of semimetals.

David E. Soule

B.A., 1949, DePauw University; M.S., 1951, and Ph.D., 1954, Northwestern University. Union Carbide Research Laboratory, 1954 to present. National Science Foundation Fellow at University of Cambridge, 1961–1962. Primary interest in electronic properties of metals and semimetals including transport and galvanomagnetic studies, diamagnetic susceptibility and de Haas-van Alphen type effects. Member of American Physical Society and Sigma Xi.

Soitiro Tosima

B.Sc., 1951, Kyushu University; Dr. of Science, 1962, Osaka University. Research associate in Physics Department of Kyushu University, 1954–1961. Joined the Laboratories RCA Inc., Tokyo, in 1961. Principal interests are transport theory for solids and solid state plasmas.

John Vanderkooy

B.Eng., 1963, Engineering Physics; graduate studies in department of physics, McMaster University. Research in cyclotron resonance and de Haas-van Alphen studies of semimetals. Member of Institute of Electrical and Electronics Engineers.

W. D. Van Gieson, Jr.

B.E.E., 1948, Manhattan College; is New York State Professional Engineer. Worked for Radio Corporation of America in television transmission systems and development until 1959, when he joined IBM Data Systems Division. He has worked in data transmission and speech recognition areas and is presently Manager of Advanced Communications Products. He is a member of the National Society of Professional Engineers and the New York State Society of Professional Engineers.

363

Joseph J. Vuillemin

B.S. in Physics, 1956, University of Texas; M.S., 1957, Baylor University. Was Instructor of Physics, 1957–1959, Baylor University, and was Teaching and Research Assistant, University of Chicago, 1959–1962. NSF Predoctoral Fellow, 1962 to present, University of Chicago. Member of the American Physical Society.

John L. Warren

A.B., 1953, University of Chicago; Ph.D., 1959, University of Maryland. Assistant Professor at DePauw University, 1959–1961. Presently Staff Member at Los Alamos Scientific Laboratory. Main interest is propagation of sound in solids. Member of the American Physical Society.

Robert G. Wenzel

B.A., 1959, University of California at Berkeley. Worked as a reactor supervisor on the Omega West Reactor at the Los Alamos Scientific Laboratory, 1959–1962. Began working in solid state physics, studying lattice dynamics, at the Los Alamos Scientific Laboratory in 1963. Currently enrolled as a graduate student in physics at the University of New Mexico. Member of Phi Beta Kappa.

George A. Williams

B.A., 1952, Colgate University; Ph.D., 1956, University of Illinois. Was Research Associate in the Physics Department, Stanford University, 1956–1959. Member of the Technical Staff, Bell Telephone Laboratories, 1959–1963. Presently is Visiting Assistant Professor of Physics, Cornell University. Primary interests are plasma effects in solids, properties of semimetals, and magnetic resonance. Member of the American Physical Society and Sigma Xi.

Leonard F. Winter

B.S. in Electrical Engineering, 1957, Carnegie Institute of Technology. Joined IBM Development Laboratory, Poughkeepsie, 1957, working first on the STRETCH Computer, then in Exploratory Development. Is currently working on display consoles of image processing at Data Systems Division, Kingston, New York. Member IEEE.

John L. Yarnell

A.B., 1947, and A.M., 1949, University of Kansas; Ph.D. in Physics, 1952, University of Minnesota. Staff Member at Los Alamos Scientific Laboratory, 1952 to present. Has worked in low energy nuclear physics, reactor design and operation, excitations in liquid helium, and lattice dynamics. Fellow of the American Physical Society; Member of Phi Beta Kappa, Sigma Xi.