Authors

Eric Adler

B.S. in Physics, 1959, City College of New York; M.S., 1963, and Ph.D., 1964, both in Physics, Columbia University. Worked at IBM Watson Laboratories in New York as part-time employee, 1961-1963. In January, 1964, became Post-doctoral Research Associate at the Watson Laboratories. Has worked on the theory of the propagation of sound in semimetals, on the theory of nonlinear optical frequency propagation in dielectrics, and is presently performing investigations in the quantum theory of wave propagation.

Robert K. Brayton

B.S. in Electrical Engineering, 1956, Iowa State University; Ph.D. in Mathematics, 1961, MIT. At MIT was a research assistant in artificial intelligence. In 1956 worked for Remington Rand Univac on magnetic-core memory circuits. Joined IBM Thomas J. Watson Research Center at Yorktown Heights in the Mathematics department. Worked on nonlinear differential equations arising from lumped and distributed electrical networks. Member of AMS, SIAM, Eta Kappa Nu, Tau Beta Pi, Phi Kappa Phi, Sigma Xi, and Pi Mu Epsilon.

Andrew E. Brennemann

B.S., 1949, and M.S., 1950, both in Electrical Engineering at the University of Cincinnati; M.S. in Physics, 1961, Syracuse University. Joined IBM in 1950 and worked on the electrostatic storage system of the 701 machine and later the barrier grid tube storage system of the 770 machine. Worked in the ferroelectric device area and in the cryogenic area of the Experimental Machines Research department at the Thomas J. Watson Research Center. Presently working in the Solid State Electronics department at the Research Center. Member of Tau Beta Pi, Eta Kappa Nu, and IEEE.

P. Johannes Burkhardt

B.S. in Chemistry, 1958, Fordham University; Ph.D. in Physical Chemistry, 1962, University of Oregon. Joined IBM in 1952 and is presently working in the Components Division Laboratories at Poughkeepsie. Current interests involve conduction and polarization mechanisms in thin film dielectrics. Member of American Physical Society, American Chemical Society and Sigma Xi.

Paul P. Castrucci

B.S. in Physics, 1957, Union College. Joined IBM in July, 1956 and worked in the Physical Research Department. Presently working on memory drivers for the System/360 computer. Is project engineer in charge of memory driver device development at Components Division laboratories in Poughkeepsie. Member of RESA and American Physical Society.

William T. Chen

B.S. in Mechanical Engineering, 1958, Queen Mary College, University of London; M.S. in Engineering, 1962, Brown University. Completed thesis work for Ph.D. in Applied Mechanics at Cornell University. Joined IBM, 1963, and is currently employed at the General Products Division Development Laboratory in Endicott.

George Cheroff

B.S., 1951, University of California at Berkeley. Was associated with the University of California Radiation Laboratory in 1951 and 1952 working with the cyclotron, and from 1952 to 1955 was with Varian Associates working on microwave tube design. Joined IBM Research Laboratory in Poughkeepsie in 1955. Earlier research was in the luminescence of solids (infra-red stimulable phosphors), photovoltaic properties of ZnS, CdS, and photoconductivity. More recently has been working on semiconductor device development at the Thomas J. Watson Research Center.

Francois Max d'Heurle

B.S. in Mechanical Engineering, 1946, Arts and Metiers, Paris; M.Sc. in Metallurgical Engineering, 1948, Michigan College of Mining and Technology; Ph.D. in Metallurgical Engineering, 1958, Illinois Institute of Technology. From 1948 to 1955 was associated with the Institute of the Study of Metals of the University of Chicago. Joined IBM Research at Mohansic in 1958, and is presently doing work in vacancies in metals and properties of metallic thin films at the Thomas J. Watson Research Center, Yorktown Heights. Member of American Institute of Mining, Metallurgical and Petroleum Engineers, American Crystallographic Association, and IEEE.

Frank F. Fang

B.S., 1952, Taiwan University; M.S. in Electrical Engineering, 1954, University of Notre Dame; Ph.D., 1959, University of Illinois. Joined IBM in 1960 at Thomas J. Watson Research Center. Has been working in the field of junction physics and semiconductor surfaces. Member of Sigma Xi, IEEE, and American Physical Society.

Alan B. Fowler

B.S., 1951, and M.S., 1952, both in Physics, Rensselaer Polytechnic Institute; Ph.D. in Applied Physics, 1958, Harvard University. Physicist, Signal Corps Engineering Laboratories, 1952 and 1953 while on tour of active duty. Was with Research Division, Raytheon Manufacturing Company, part-time, 1953 to 1956, working on semiconductor devices, diffusion, and ultra high vacuum microbalance studies. Joined IBM in 1958 and has since studied photo Hall effects in CdSe sintered layers, Dember effects in ZnS, optical properties of heavily doped germanium and, magnetic effects and interactions in lasers at the Thomas J. Watson Research Center. Member of American Physical Society and Sigma Xi.

Harold L. Friedman

B.S. in Chemistry, 1946, and Ph.D. in Chemistry, 1949, University of Chicago. From 1949 to 1959 was an Instructor, Assistant Professor, and Associate Professor at the University of Southern California where he conducted an elementary chemistry course and graduate thermodynamics courses. Summers, 1952 to 1957 was a consultant at Los Alamos Scientific Laboratory doing research in radiation chemistry. In 1959 joined IBM Research at Mohansic and is presently engaged in research in statistical mechanics and physical chemistry of electrolytes at the Thomas J. Watson Research Center, Yorktown Heights. In 1957 and 1958, was a Guggenheim Fellow; studied at the Free University of Brussels with I. Prigogine, doing research in ionic solution theory. 1959 to 1961, Alfred P. Sloan Research Fellow. 1962 and 1963, IBM Resident Consultant with Philips Eindhoven Labs. Member of Phi Beta Kappa, ACS, Faraday Society and Sigma Xi.

Frederick Hochberg

Attended Westchester Community College. Joined IBM in 1956 as member of the Cryogenics Department at Thomas J. Watson Research Center, Yorktown Heights. Later activities included photoconductor characterization and automated vapor pressure measurements. Presently engaged in fabrication of silicon planar devices.

Donald R. Kerr

B.S., 1958, Geneva College; B.S., 1958, M.S., 1959, and Ph.D., 1963, all in Electrical Engineering, Carnegie Institute of Technology. Joined IBM in 1962 and is presently a staff engineer in the Surface Physics group in the IBM Components Division at Poughkeepsie. Has worked on semiconductor-insulator interface problems. Member of Sigma Xi, Eta Kappa Nu, Tau Beta Pi, American Physical Society, and IEEE.

Brian W. Kington

B.A., 1959; M.A., 1963, Cambridge University. Joined IBM British Laboratories in 1960, and worked mainly on thermoelectricity. Spent 1962 working on thin film semiconductors at the IBM Kingston Laboratory and on cryogenics at the Thomas J. Watson Research Center, Yorktown. Worked on read-only stores after returning to British Laboratories, and is at present carrying out research on superconductivity for the Ph.D. degree at Cambridge.

Gordon J. Lasher

B.S. in Physics, 1949, Rensselaer Polytechnic Institute; Ph.D. in Theoretical Physics, 1953, Cornell University. Was staff member of the University of California Radiation Laboratory at Livermore, California, 1953 and 1954. Joined IBM Research Computing Center of Poughkeepsie in 1954 and worked on computing methods on physical problems. Is now with the Solid State Science department at the Research Center, Yorktown Heights, and has done research in irreversible statistical mechanics and its application to quantum mechanics of information theory. More recently he has made contributions to the theory of operation of injection lasers and is currently working in the physics of type II superconductors. Member of American Physical Society and Sigma Xi.

Herbert S. Lehman

B.S. in Chemistry, 1957, Brooklyn College; M.S. in Physical Chemistry, 1960, Purdue University. Joined IBM in 1960 and has worked in the study of surfaces and surface passivation of semiconductor devices, and particularly the electrical, physical, and chemical properties of oxide and glass systems on silicon devices. Presently employed at the Components Division Laboratories in Poughkeepsie. Member of American Chemical Society, RESA and PLV.

Reginald F. Lever

B.A. in Physics, 1951, Oxford University. Scientific Officer at the Services Electronics Research Laboratory, Baldock, England from 1951 to 1957. Spent one year at the Culcheth Laboratory of the United Kingdom Atomic Energy Authority (Industrial Group). From 1958 to 1960 was with the Research Division of the Philco Corporation, Philadelphia. Joined IBM Research Division in 1960 and has recently been concerned with the study of epitaxial growth by chemical reaction techniques at the Thomas J. Watson Research Center, Yorktown Heights. Member of American Physical Society.

Joseph S. Logan

B.E.E., 1955, Cornell University; M.S., 1956, Cornell University; Ph.D. in Electrical Engineering, 1961, Stanford University. Joined IBM in 1960. Worked for two years on tunnel diode development, and past two years on silicon surface passivation research in the Components Division at Poughkeepsie. Assisted in development of Tunnel Diode Standards by IEEE subcommittee. Member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.

William A. Pliskin

B.S., in 1941, Kent State University; M.S. in Physics, 1943 and Ph.D. in Physics, 1949, Ohio State University. Fellow at Ohio State University, 1948 to 1949. Joined IBM in 1959 and has been engaged in structure and application studies of oxide and glass systems for surface passivation of silicon devices. Presently is Manager of Physics and Chemistry of Insulators at the IBM Components Division, Poughkeepsie. Previously was a research physicist at Texaco Research Center, working on fundamental catalysis studies such as molecular surface structures determined by the infrared spectra of chemisorbed molecules. Member of Sigma Xi, Pi Mu Epsilon, Sigma Pi Sigma, American Physical Society, American Chemical Society, Electrochemical Society, and RESA; Senior Member, IEEE.

Donald P. Seraphim

B.A.Sc., 1951, and M.A.Sc., 1952 both in Metallurgy, University of British Columbia; D. Eng. in Metallurgy, 1958, Yale University. Joined the IBM cryogenics group in 1957 and managed the group in 1962 and 1963. He changed fields to semiconductor technology in 1963 and now manages groups concerned with semiconductor technology and thin film metals and dielectrics at the Thomas J. Watson Research Center, Yorktown Heights. Member of American Physical Society, American Institute of Mining and Metallurgical Engineers, and Sigma Xi.

Daniel M. Taub

B.Sc. in Engineering, 1945, London University; M.Sc., 1951, Cambridge University. Carried out research into noise phe-

nomena in vacuum tubes. Worked on electronic switching techniques at Ericsson Telephones Ltd. from 1950 to 1955 (Project Engineer), and on logic and circuit design from 1955 to 1957 at Leo Computers Ltd. where he was Assistant Manager of Development Department. Joined IBM British Laboratories in 1957 and has been concerned mainly with design and applications of read-only stores. Chartered Electrical Engineer and member of the British Computer Society.

Jacob Earl Thomas, Jr.

A.B., 1939, Johns Hopkins University; Ph.D., 1943, California Institute of Technology. From 1942 to 1945, at California Institute of Technology working on rockets, launchers and associated equipment. 1945 and 1946, at University of California, Los Alamos, engaged in classified government project work. 1947 to 1955, was at Massachusetts Institute of Technology; became Assistant Professor of Electrical Engineering. 1952, on leave of absence from MIT, at Bell Telephone Laboratories working on transistor development. 1953 to 1955, on leave of absence from MIT, led group at Lincoln Laboratories working on semiconductor devices. 1955 to 1959, Professor and Chairman of Physics department at Wayne State University. 1959 to 1962, Director of Research and Engineering at Sylvania Semiconductor Division. Joined IBM in April, 1962 and was manager of Solid State Development, Components Division, Poughkeepsie, directly supervising development of semiconductor products and processes until June, 1964. Presently with General Instrument Corporation as corporate new products manager and technical advisor to the president. Member, Phi Beta Kappa, Sigma Xi, Research Society of America; Senior Member, IEEE; Honorary Member, Tau Beta Pi; Fellow, American Physical Society.

Sol Triebwasser

B.A., 1941, Brooklyn College; M.A., 1948, Columbia University; Ph.D., 1952, Columbia University. Instructor in Physics, Brooklyn College, 1947 to 1951; Research Assistant, Columbia Radiation Laboratory, 1951 and 1952. Joined IBM in 1952 as a member of staff of the Watson Laboratory in New York; from 1957 to present held managerial positions in various aspects of solid state physics. Presently manager of Semiconductor Devices, Materials, and Technology department in the Solid State Electronics group of the Physical Science Department at the Research Center, Yorktown Heights. Member of the American Physical Society, Sigma Xi and IEEE.

Donald R. Young

B.S., 1942, Utah State Agricultural College; Ph.D. in Physics, 1949, MIT. Joined IBM in 1949. Has been engaged in ferroelectric, superconductor and ultrasonic studies. At the present time is Manager of the Surface Physics Department in the Components Division of IBM at Poughkeepsie. Fellow of the American Physical Society and Member of Sigma Xi.