

Authors

David Adler

Massachusetts Institute of Technology, Cambridge Massachusetts

Dr. Adler became an Associate Professor of Electrical Engineering in 1969. He works in the field of theoretical solid state physics, in particular, on the electrical and optical properties of low-mobility materials and amorphous semiconductors; also on the band structure of magnetic semiconductors and on insulator-metal transitions. He received his B.S. in Physics from Rensselaer Polytechnic Institute in 1956; his A.M. in Physics from Harvard in 1958 and his Ph.D. in Physics from Harvard in 1964. During the year 1964-1965 he was an Associate at the United Kingdom Atomic Energy Research Establishment, Harwell, England. He came to MIT in 1965 as a Research Associate and became an Assistant Professor of Electrical Engineering in 1967. He is a member of the American Physical Society and Sigma Xi.

Avraham Amith

RCA Laboratories, Princeton, New Jersey

Dr. Amith has been a member of the technical staff at the RCA Laboratories since 1966. Among his professional interests are molecular quantum mechanics, photoeffects and excess carrier lifetime and transport in semiconductors, electrical properties of thin films and surface layers, thermoelectric properties of semiconductors, and low-temperature galvanomagnetic and thermomagnetic effects in semiconductors. He received his B.S. in 1951 at the University of Michigan, his M.A. in 1953 at Harvard and his Ph.D. in Chemical Physics in 1956.

Ion N. Belciu

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Mr. Belciu has been a Teaching Assistant at the Polytechnical Institute of Bucharest since 1964. His area of speciality within the field of solid state physics is the electrical properties of magnetic oxide semiconductors.

Piet F. Bongers

Philips Research Laboratories, Eindhoven, Netherlands

Dr. Bongers is leader of a research group on magnetism at the Philips Research Laboratories, a post he has held since 1968. He has been involved in solid state chemistry at Philips since 1959, being primarily concerned with the electrical properties of vanadium oxides, magnetic semiconductors and magneto-optics. He studied inorganic chemistry at the University of Leiden. His thesis on the Jahn-Teller effect in transition metal oxides was published in 1967. Currently Dr. Bongers is President of the Nedelandse Keramische Vereniging.

Ion N. Bunget

Department of Solid State Physics, University of Bucharest, Bucharest, Romania

Dr. Bunget is currently a Lecturer in Physics at the University of Bucharest. He had been Teaching Assistant at the University from 1961 until 1969. His field is solid state physics with emphasis on the electrical properties of magnetic oxide semiconductors. His M.S. and Ph.D. degrees are both in Physics from the University of Bucharest in 1961 and 1967, respectively.

Walter J. Carr, Jr.

Westinghouse Research Laboratories, Pittsburgh, Pennsylvania

Dr. Carr is a member of the Solid State Theory Group at Westinghouse Research Laboratories. He received his B.S.E.E. in 1940 from the Missouri School of Mines, his M.S.E.E. in 1942 from Stanford University and his Ph.D. in Physics in 1950 from the Carnegie Institute of Technology. He joined the Westinghouse Research Laboratories in 1942, achieving his present position in 1965. He is a member of the American Physical Society and the IEEE.

Lester M. Corliss

Brookhaven National Laboratory, Upton, New York

Dr. Corliss is a Senior Chemist at the Brookhaven National Laboratory, where he has been employed since 1949. His fields of interest are neutron diffraction and magnetism. He received his Ph.D. in Chemical Physics from Harvard in 1949. He had been a chemist working on the Manhattan Project from 1943 to 1946 and he was a National Science Foundation Senior Fellow at Grenoble in the academic year 1959-1960. He is a member of the American Physical Society.

Daniel W. Deis

Westinghouse Research Laboratories, Pittsburgh, Pennsylvania

Since joining Westinghouse in 1968, Mr. Deis has been concerned with the fundamental properties of superconductivity, hypersonic research and problems in noncrystalline solids. From 1964 to 1967 he was a research assistant under H. A. Fairbank at Duke University studying problems in very low-temperature superconductivity and was also associated with numerous experiments on liquid and solid helium. He was an Instructor of Physics at Duke University from 1967 to 1968.

J. F. Dillon, Jr.

Bell Telephone Laboratories, Murray Hill, New Jersey

Dr. Dillon is a member of the Technical Staff at Bell Telephone Laboratories; he works in the Solid State Electronics Research Laboratory on the optical properties of magnetic materials and on ferromagnetic resonance. He received his B.A. in 1944, his M.A. in 1948 and his Ph.D. in 1949, all in Physics from the University of Virginia. He worked as a Physicist for the U. S. Department of Agriculture at the Animal Virus Disease Laboratory, Pirbright, Surrey, England from 1949 to 1952. He was a Guggenheim Fellow and visiting Scientist at the Institute for Solid State Physics, University of Tokyo during 1966-1967. He is a member of Phi Beta Kappa, Sigma Xi, the Physical Society of Japan and he is a Fellow of the American Physical Society.

John O. Dimmock

MIT Lincoln Laboratory, Lexington, Massachusetts

Dr. Dimmock became leader of the Applied Physics Group, Solid State Division, in 1966; he works in the field of semiconductor device research, in particular, on the optical and electronic properties of semiconductors. He received the A.B. in Physics from Yale in 1958 and the Ph.D. in Physics from Yale in 1962. He was a staff scientist in the Research Division of the Raytheon Company from 1962 to 1963 and became a staff member at MIT Lincoln Laboratory in 1963. He is a member of Sigma Xi and the American Physical Society.

Julius Feinleib

Energy Conversion Devices, Inc., Troy, Michigan

Dr. Feinleib joined Energy Conversion Devices as a senior physicist and project director in 1969. His area of investigation is the optical properties of amorphous semiconductors. Previously he had been at the MIT Lincoln Laboratory from 1964 to 1969 working in the solid state physics group on the properties of magnetic semiconductors. He received his Bachelor of Engineering Physics from Cornell University in 1958; his M.A. in 1959 and his Ph.D. in 1964 in Applied Physics from Harvard. He was also a Research Fellow at Harvard in 1964. He is a member of the American Physical Society.

H. P. R. Frederikse

Solid State Physics Section, National Bureau of Standards, Washington, D. C.

Dr. Frederikse is Chief of the Solid State Physics Section, in the Inorganic Materials Division at the National Bureau of Standards. He joined the National Bureau of Standards in 1953 and attained his present position in 1956. Previously, he had been a visiting lecturer at Purdue University from 1950 to 1953, and from 1945 to 1950 he was a teaching assistant at the University of Leiden, Netherlands. He received the B.S. in 1941, M.S. in 1945 and Ph.D. in 1950, all in Physics from the University of Leiden.

Lionel Robert Friedman

RCA Laboratories, Princeton, New Jersey

Dr. Friedman is a member of the technical staff at the RCA Laboratories working in a general research group on problems in transport phenomena in solids, low-mobility transport in narrow-band semiconductors, small-polaron theory and the acousto-electric effect. He received his B.S. in 1955 at Swarthmore College and his Ph.D. in Physics in 1961 from the University of Pittsburgh. He was a Research Associate at the University of Pittsburgh in 1962 and joined the RCA Laboratories in 1963. He was an Adjunct Associate Professor of Physics at Temple University from 1965 to 1967. He is a member of Sigma Xi and the American Physical Society.

E. Michael Gyorgy

Bell Telephone Laboratories, Murray Hill, New Jersey

Dr. Gyorgy has been a member of the Technical Staff at Bell Telephone Laboratories since 1953, working in magnetic materials research. He received his B.S. in Physics in 1950 and his Ph.D. in Physics in 1953, both from MIT. He is a Fellow of the American Physical Society.

C. Haas

Laboratory for Inorganic Chemistry, State University, Groningen, Netherlands

Dr. Haas has been a Professor of Inorganic Chemistry at Groningen since 1968. He studied chemistry at the University of Amsterdam, where he received his Ph.D. in 1956. During the academic year 1956-1957 he was a research associate at Brown University and from 1957 to 1968 he did research on semiconductors in magnetism at Philips Research Laboratories, Eindhoven, Netherlands.

Julius M. Hastings

Brookhaven National Laboratory, Upton, New York

Dr. Hastings has been at the Brookhaven National Laboratory since 1947. He is a Senior Chemist working in neutron diffraction and magnetism. He received his A.B. at New York University in 1940 and his Ph.D. in Physical Chemistry from Cornell University in 1945. He was a Senior Physicist at the Monsanto Chemical Company from 1945 to 1947. He is a member of the American Physical Society.

F. Holtzberg

Thomas J. Watson Research Center, Yorktown Heights, New York

Dr. Holtzberg became a member of the Research Staff in 1961 and is now manager of the magnetic crystal chemistry group at the Research Center. He received his bachelor's degree in chemistry in 1946 from Brooklyn College and a Ph.D. in Chemistry from the Polytechnic Institute of Brooklyn in 1952. He was employed by IBM in 1952 as a senior staff member and manager of chemistry at the Watson Scientific Computing Laboratory. From 1959 to 1960 he was appointed Technical Assistant to the Special Assistant to the President of the United States for Science and Technology (on leave of absence).

J. M. Honig

Department of Chemistry, Purdue University, West Lafayette, Indiana

Since 1967 Dr. Honig has been a professor of Chemistry at Purdue University. His research has been in solid state chemistry and physics, particularly in the area of oxides. He received his B.A. in Chemistry from Amherst College in 1946 and his Ph.D. in Chemistry from the University of Minnesota in 1952. He was a Research Associate at Purdue University in 1953 and an Assistant and Associate Professor from 1953 to 1959. He was on the staff of the MIT Lincoln Laboratory from 1965 to 1967. Dr. Honig is a member of Phi Beta Kappa, Sigma Xi, the American Chemical Society, the Faraday Society, the American Physical Society and is a Fellow of the New York Academy of Sciences.

Clifford K. Jones

Westinghouse Research Laboratories, Pittsburgh, Pennsylvania

Dr. Jones became a member of the Cryophysics Section of Solid State Sciences at Westinghouse in 1967. Since joining Westinghouse in 1962, he has been primarily concerned with the fundamental properties of superconductors. He holds the B.Sc. and Ph.D. degrees in Physics from the University of London, with the diploma of membership

in Imperial College (D.I.C.) For two years he was an Assistant Professor of Physics at the University of California, where he was associated with Professor H. E. Bömmel in hypersonic research. From 1957 to 1960 Dr. Jones was research bursar at Imperial College, where he participated in studies on defect structures in synthetic quartz.

Tadao Kasuya

Thomas J. Watson Research Center, Yorktown Heights, New York

Dr. Kasuya is on leave of absence from the Department of Physics, Tohoku University, Sendai, Japan, working in solid state physics theory, particularly on magnetism and transport phenomena. He received the D.Sc in Physics from Nagoya University in 1956 and held a special post-doctoral fellowship and a membership on the staff of Nagoya University from 1956 to 1959. He was an Associate Professor at Tokyo University, Institute for Solid State Physics, 1959 to 1965, and a research staff member at Bell Telephone Laboratories, Murray Hill, New Jersey from 1960 to 1962 during a leave of absence from Tokyo University. In 1961 he was a Visiting Professor at the University of California, Berkeley, and was at the Atomic Energy Research Establishment, Harwell, England during 1964. He has been a Professor at Tohoku University since 1965 and became a consultant to the IBM Research Center in 1969. He is a member of the Physical Society of Japan and the American Physical Society.

Dieter Kuse

Brown Boveri Research Center, Baden, Switzerland

Dr. Kuse has been a staff member in the magnetism and semiconductors group at Brown Boveri Research Center since 1967, where he has worked in magneto-optics and spectroscopy of solids. He received the Diploma in Physics from the Technische Hochschule Darmstadt in 1962 and Dr. rer. Nat. from the University of Karlsruhe in 1967. He is a member of the Deutsche Physikalische Gesellschaft.

Moshe Kuznietz

Solid State Science Division, Argonne National Laboratory, Argonne, Illinois

Dr. Kuznietz has been a postdoctoral appointee at the Argonne National Laboratory since September 1967, where he has studied the NMR properties of uranium compounds. He holds the degrees B.Sc., 1960; M.Sc., 1964; D.Sc., 1967; all in physics from the Technion-Israel Institute of Technology, Haifa, Israel. He was a graduate assistant and instructor at the Technion from 1960 to 1967. He is a member of the American Physical Society.

Mahendra P. Mathur

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Dr. Mathur is a Senior Scientist in the Cryophysics department at Westinghouse Research Laboratories, where he has worked since 1966. He received an M.Sc. in Nuclear Physics and Cosmic Rays from Aligarh University, India in 1955 and a Ph.D. from Purdue University in 1966. From 1955 to 1957 he was a Research Assistant with the Indian Association for the Cultivation of Science at Calcutta University. From 1958 through 1965 he did undergraduate teaching and was a Research Assistant at Purdue University. He is a member of the American Physical Society.

Gen Matsumoto

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Dr. Matsumoto is an Assistant Professor of Physics, specializing in magnetism (NMR spectroscopy). He received the B.S. in Physics in 1964; M.S. in Physics in 1966; and Ph.D. in Physics in 1969, all from the University of Tokyo. He is a member of the Physical Society of Japan.

Denis B. McWhan

Bell Telephone Laboratories, Murray Hill, New Jersey

Dr. McWhan has been a member of the technical staff at the Bell Telephone Laboratories since 1962. He works in the Solid-State and Physics-of-Metals Research Department on problems in electronic transitions at high pressure. He received a B.S. in Chemistry from Yale and a Ph.D. in Physical Chemistry from the University of California at Berkeley in 1961. During 1961 and 1962 he was a Research Associate at the Royal Institute of Technology in Stockholm. He is a member of Sigma Xi, the American Physical Society and the American Crystallographic Association.

Siegfried Methfessel

Physics Department, Ruhr University, Bochum, West Germany

Dr. Methfessel became Professor of Experimental Physics at Ruhr University in 1969; his fields of interest are solid-state physics and magnetism, particularly rare-earth compounds and magnetic semiconductors. He received the M.S. in Physics from the University of Halle in 1950 and the Ph.D. in Physics at the Technische Hochschule Calus-thal in 1955. He was a staff member at the IBM Research Laboratory in Zürich from 1958 to 1962 and worked at the Research Center in Yorktown Heights from 1962 to 1969. He is a member of the German Physical Society, the Swiss Physical Society, IEEE, and is a Fellow of the American Physical Society.

Pompiliu Nicolau

Institute of Physics of the Romanian Socialist Republic Academy, Bucharest, Romania

Mr. Nicolau has been a research staff member in the Department of Solid State Physics at the Institute of Physics in Bucharest since 1960. He is particularly interested in the electrical properties of solid state materials. He received his M.S. in Physics from the University of Bucharest in 1957.

Michael R. Oliver

MIT Lincoln Laboratory, Lexington, Massachusetts

Mr. Oliver is a graduate student at MIT. He received his B.S. in 1965 and his M.S. in 1967, both in Electrical Engineering from MIT. He is an Associate Member of Sigma Xi.

Adolphus Patterson

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Mr. Patterson is an Associate Engineer in the Cryophysics Department at Westinghouse Research. Before joining Westinghouse in 1955 he was a self-employed registered

electrician, and, since then, he has worked in electronic instrument development, mass spectroscopy of gases, and cryophysics. He received his B.S. in Electronics Engineering from the Carnegie Institute of Technology in 1958.

Carl R. Pidgeon

Francis Bitter National Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts

Dr. Pidgeon has been a staff member in the optics group at the Bitter Laboratory since 1964, where his work has been in the field of optical and magneto-optical properties of solids. He received his B.Sc. and Ph.D. degrees in Physics in 1959 and 1962, respectively, from Reading University in England. He also did post-doctoral work at Reading University from 1962 to 1964. He is a member of the American Physical Society.

Thomas B. Reed

MIT Lincoln Laboratory, Lexington, Massachusetts

Dr. Reed is the head of the crystal section of the Solid State Division, engaged in developing new crystal growth techniques, with special interest in vapor growth at very high temperatures. He received the B.S. in Chemistry at Northwestern University in 1947 and the Ph.D. in Physical Chemistry at the University of Minnesota, in 1952, specializing in x-ray crystallography. He was with the Linde Division of Union Carbide from 1952 to 1959, working in high-temperature processes, especially plasma research, and has been at the Solid State Division of Lincoln Laboratory since 1959. He held a Research Fellowship at Oxford University, 1965 to 1966, and is a member of AAAS, the Electrochemical Society and the NSF Committee on High-temperature Chemical Phenomena.

J. P. Remeika

Bell Telephone Laboratories, Murray Hill, New Jersey

Mr. Remeika has been a member of the Bell Telephone Laboratories technical staff since 1949. He works in the technical research laboratory, where his studies have been in the fields of solid state chemistry, materials research and crystal growth. He is a member of the American Physical Society, the American Crystallographic Association, the Scientific Research Society of America and the American Association for the Advancement of Science.

T. Maurice Rice

Bell Telephone Laboratories, Murray Hill, New Jersey

Dr. Rice joined the Technical Staff at Bell Laboratories in 1966. Since 1968 he has worked in the Solid-State and Physics-of-Metals Research Department investigating many-body effects in metals and insulators. He received the B.Sc. and M.Sc. degrees in 1959 and 1960, respectively, from University College, Dublin and obtained a Ph.D. in Physics at Cambridge in 1964. He was an Assistant Lecturer at the University of Birmingham during 1963-1964 and a Research Assistant at the University of California, San Diego from 1964 to 1966. He is a member of the American Physical Society.

Mihai Rosenberg

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Dr. Rosenberg has been a Professor in the Department of Solid State Physics at the University of Bucharest since 1968. His field of particular interest is magnetism. He received his M.S. in Physics in 1950 from Bucharest University and his Ph.D. in Physics in 1955 from Moscow University. He was an Associate Professor at Bucharest University from 1956 to 1968 and he has been the Head of the Magnetism Laboratory at the Institute of Physics of the Romanian Academy since 1960.

William J. Scouler

MIT Lincoln Laboratory, Lexington, Massachusetts

Since 1960 Dr. Scouler has been at the Lincoln Laboratory, where he is currently a staff physicist in the solid state physics group doing research on optical properties of solids. He holds a B.S. in Physics from the University of Rochester, 1955, and a Ph.D. in Physics from MIT, 1960. He is a member of the American Physical Society.

W. J. Siemons

E. I. du Pont de Nemours & Company, Inc., Wilmington, Delaware

Dr. Siemons is a member of the Central Research Department at du Pont where he is concerned with the electronic properties of inorganic solids. He received his Masters Degree in Chemical Engineering from the Technical University of Delft in 1949 and his Ph.D. in Chemistry from the University of California at Berkeley in 1953. He was employed at the M. W. Kellogg Corporation from 1953 to 1955. Since 1955 he has been at du Pont. He is a member of the American Physical Society.

William A. Thompson

Thomas J. Watson Research Center, Yorktown Heights, New York

Dr. Thompson has been a member of a cooperative phenomena group at the Research Center since 1964. He has been studying electron tunneling into superconductors and magnetic semiconductors. He received his B.S. in Physics from Drexel Institute of Technology in 1959 and his Ph.D. in Physics at the University of Pittsburgh in 1964. He is a member of Phi Kappa Phi, Sigma Xi and the American Physical Society.

Stephan von Molnar

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Dr. von Molnar is manager of the magnetic semiconductor group in the Physical Sciences Department. His main interests are bulk transport properties and tunneling phenomena. He received his B.S. in Physics at Trinity College, Hartford in 1957; his M.S. in Physics at the University of Maine in 1959 and his Ph.D. in Physics at the University of California at Riverside in 1965. He was a research staff member at du Pont de Nemours & Co., 1959-60, and he joined the IBM Research Center in 1965. He is a member of Sigma Pi Sigma, Sigma Xi and the American Physical Society.