

Authors

John V. Cassie

Systems Development Division, Boulder, Colorado

Mr. Cassie is a Senior Engineer and manager of a tape-storage subsystems group at the laboratory in Boulder. He joined IBM in 1957 at Poughkeepsie, New York, where he worked on development of the STRETCH computer project and the 7335 and 2415 Magnetic Tape Units. Since his move to Boulder in 1966, he has worked on the design of the IBM 2420 Model 5 Magnetic Tape Unit and was development manager of the 3420 Magnetic Tape Unit. He received the B.S. in Electrical Engineering in 1957 from Carnegie-Mellon University. Prior to joining IBM he worked for the American Petroleum Institute and the Nuclear Science and Engineering Corporation.

Michel F. Choquet

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Mr. Choquet graduated from the Ecole Supérieure d'Electricité in Paris in 1962 and worked with the Compagnie Française Thomson Houston-Hotchkiss-Brandt in Gennevilliers, France, from 1964 to 1967. In 1967 he joined IBM France at LaGaude where he currently works on data transmission.

Philip E. Fox

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Mr. Fox is a Senior Engineer in logic products engineering at the East Fishkill laboratory. He received the B.S. and M.S. degrees in Electrical Engineering from the Massachusetts Institute of Technology in 1943. Until 1946, he was on active duty with the Signal Corps, engaged in the development of electronic data processors. He then joined IBM, where he participated in the design of the Selective Sequence Electronic Calculator and the 604. Following that, he developed the Williams-tube memory used in the IBM 701 and 702 computers. Beginning in 1954, he directed the development of IBM's first commercial large vacuum-tube memory and, later, solid-state magnetic core memories. Since 1965, he has been engaged in the development and introduction to manufacture of monolithic integrated logic circuits. Mr. Fox is a senior member of the IEEE.

Kurt R. Grebe

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

Mr. Grebe is a staff member in an exploratory memory group at the Research Center, where he is currently investigating materials and devices for Josephson tunneling memory application. He joined IBM manufacturing in 1952 and transferred to research in 1954, where he worked on counter and cathode ray tubes, transistors, ferrite cores, batch-fabricated ferrites and coupled-film technologies. He attended the Universidad Nacional Autonoma de Mexico in the School of Mining and was Assistant General Manager of the Cia. Internacional de Fundiciones y Minerales until 1947. He then came to the United States and became Manager of the Fishkill Landing Lumber Co. until he joined IBM.

John W. Hartwell

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Dr. Hartwell is an Assistant Professor of Electrical Engineering at Florida Atlantic University in Boca Raton, Florida. He worked at IBM in the Boca Raton laboratory as a Summer Faculty member in 1970. He received the B.S. in Mathematics in 1965, the M.S. in Electrical Engineering in 1967, and the Ph.D. in Electrical Engineering in 1971, all from Duke University. Dr. Hartwell is a member of Sigma Xi.

Francois M. d'Heurle

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Dr. d'Heurle is a member of the memory and storage group at the Research Center, where he joined IBM in 1958. His interests for the last eight years have been focused generally on the properties of thin films, and particularly on the performance of metallic conductors with respect to electromigration. He received the B.S. in 1946 from Ecole des Arts et Metiers in Paris, the M.S. in 1968 from Michigan Technological University in Houghton, and the Ph.D. in 1958 from Illinois Institute of Technology in Chicago. From 1948 to 1955 he worked at the Institute for the Study of Metals at the University of Chicago while studying philosophy at the University. He is a member of American Crystallographic Society, American Institute of Metallurgical Engineers, American Vacuum Society, Computer People for Peace, Federation of American Scientists, French Engineers in the U.S.A., Institute of Electrical and Electronic Engineers, Scientists and Engineers for Social and Political Action, and Society for Social Responsibility in Science.

John W. Irwin

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Mr. Irwin is an Advisory Engineer in the advanced control units area in the laboratory at Boulder. He joined IBM in 1956 as a customer engineer after serving in the United States Air Force as a jet pilot instructor. Subsequently, he transferred to the Poughkeepsie laboratory, where he assisted with the design of the 7080 and 7640 hypertape control units and the 2802 advanced hypertape unit. He was transferred to the Federal Systems Division in Huntsville, Alabama in 1964, and a year later was assigned to the 2415 magnetic tape unit development project in Boulder. He designed the machine organization and much of the logic for the IBM 3803 Magnetic Tape Control Unit.

Robert W. Keyes

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Dr. Keyes is the manager of the Exploratory Devices group at the Research Center. He received his M.S. and Ph.D. in Physics, 1950 and 1953, at the University of Chicago. From 1946 to 1950 he worked at the Argonne National Laboratory, and from 1953 to 1960 at the Westinghouse Research Laboratory. He joined IBM Research in 1960. He is a Senior Member, IEEE and a Fellow, American Physical Society.

W. J. Nestork

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Mr. Nestork is the manager of a new products engineering group in the logic products area of the East Fishkill laboratory. He joined IBM in 1957 after receiving a B.E.E. degree from Rensselaer Polytechnic Institute. He is a member of the IEEE.

Henri J. Nussbaumer

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Mr. Nussbaumer joined IBM in 1957 at the IBM France Development Laboratory in Paris to work on solid-state circuits until 1960 when he joined the Components Division laboratory at Poughkeepsie, New York, to work on electro-deposition of magnetic films. He returned to IBM France at the LaGaude laboratory in 1962 as manager of an advanced development group to work on parametric circuits; was appointed manager of line switching product development in 1964; and has been manager of technology at LaGaude since 1965. He completed his studies at the Ecole Centrale des Arts et Manufactures, Paris, in 1954.

Sevgin Oktay

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Mr. Oktay is the manager of a group doing electro-mechanical analysis and testing for advanced products at the laboratory in East Fishkill. He joined IBM at the Thomas J. Watson Research Center in Yorktown Heights in 1963 to work on fluid dynamics, and transferred to the Components Division in 1965 to do thermo analysis. He received the B.S. in Engineering Science from Antioch College in 1959, the M.S. and M.E. in Mechanical Engineering, 1960 and 1963, respectively, from Columbia University and was a Research Fellow from 1961 to 1962 at Columbia University. Mr. Oktay is a member of the ASME.

Harlyn C. Oppeboen

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Mr. Oppeboen is a Senior Engineer and a manager of tape control unit development at the Boulder laboratory. He joined IBM at Poughkeepsie, New York in 1958. In 1963 and 1964 he was assigned to the company's Hursley, England laboratory with responsibility for maintainability planning for the System/360 Model 40. He returned to a position in diagnostic engineering at Poughkeepsie in 1965 and was transferred to Boulder the same year in a similar position. Most recently he was assigned to developing the IBM 3803 Magnetic Tape Control Unit. He earned the B.S. in Electrical Engineering from the University of North Dakota. He is a member of Sigma Tau.

Elisabeth M. Rutz, nee Philipp

Federal Systems Division, Gaithersburg, Maryland

Dr. Rutz is an Advisory Physicist in the quantum electronics group of the Electronics Systems Center at Gaithersburg, where she is currently engaged in the development of diffraction-limited

GaAs lasers with high brightness for space navigation. She joined IBM at the Federal Systems Division in Bethesda, Maryland in 1961. Her academic background includes the B.S., M.S. and D.Sc. degrees, all in Applied Physics from the University of Vienna. She worked at Siemens and Halske in Germany from 1938 to 1948 and at the Emerson Research Laboratory in Silver Springs, Maryland from 1955 until 1961.

M. Carl Shine, Jr.

Components Division, East Fishkill, New York

Dr. Shine joined the company in 1968. From then until late 1970, he worked on the "cracked-stripe problem" at the Research Center in Yorktown Heights. He is currently working in the surface physics group at East Fishkill. Dr. Shine received his B.S. and Ph.D. in Metallurgy from the University of Pennsylvania and his M.S. in Metallurgy from M.I.T.

Gary A. Sitton

Data Processing Division, Scientific Center, Houston, Texas

Mr. Sitton joined IBM in 1970 and has since worked on problems in digital image processing, digital filtering, and numerical analysis. He received his B.S. in Physics from the University of Houston in 1966 and his M.S. in Electrical Engineering from Rice University in 1970. Previous experience includes work at the Rice University Computer Project in systems programming, speech analysis, and time series problems. He also investigated several new special-purpose computer language compilers and real-time operating systems at the Stanford Research Institute. His current research involves linear systems identification methods and time series techniques in combination.

Hans H. Zappe

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

Mr. Zappe is a member of an exploratory memory group at the Research Center. He has been there since 1966 working primarily in the fields of magnetic after-effects in permalloy and the evaluation of Josephson tunnel junction devices. Before coming to the Research Center, he worked for IBM France in Paris, at the French development laboratories in Paris and LaGaude, and at the Systems Development Division Laboratory in Poughkeepsie, New York. He has also been employed at the Institute d'Electromechanique et d'Electrometallurgie de Paris, 1951-1954, and at PEK in Stuttgart, 1955-1956. Mr. Zappe is a member of the American Association for the Advancement of Science and the American Physical Society.