

Contributors to This Issue

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J. E. Goell, B.E.E., 1962, M.S., 1963, and Ph.D. (E.E.), 1965, Cornell University; Bell Laboratories, 1965-1974. While at Cornell, Mr. Goell was a teaching assistant and held the Sloan Fellowship and the National Science Cooperative Fellowship. At Bell Laboratories, he worked on solid-state repeaters for millimeter wave communication systems and optical integrated circuits, and repeaters for optical fiber communication systems. Member, Tau Beta Pi, Eta Kappa Nu, Sigma Xi, Phi Kappa Phi, IEEE.

Robert M. Gray, B.S. and M.S., 1966, Massachusetts Institute of Technology; Ph.D., 1969, University of Southern California. Mr. Gray is an Assistant Professor of Electrical Engineering at Stanford University engaged in research and teaching in random processes communication and information theory, and data compression. He is past chairman of the San Francisco Chapter of the IEEE Information Theory Group. Member, IEEE, SIAM, MAA, IMS, AAAS, Sigma Xi, Eta Kappa Nu.

John C. Irvin, B.A. (physics), 1949, Miami University, M.A., 1953, and Ph.D., 1957 (both physics), University of Colorado; Bell Laboratories, 1957—. Mr. Irvin was initially engaged in the investigation of bulk silicon and of diffused layers of silicon. He later became involved in the development of microwave diodes, especially gallium arsenide varactor, mixer, Gunn, and IMPATT diodes. After an interlude in surface-state physics, he returned to the microwave device field and is currently concerned with gallium arsenide IMPATT diodes and field-effect transistors. Member, IEEE, American Physical Society, Sigma Xi, Phi Beta Kappa.

Dawon Kahng, B.Sc., 1955, Seoul University; M.Sc., 1956, Ph.D., 1959, The Ohio State University; Instructor, The Ohio State University, 1959; Bell Laboratories, 1959—. Mr. Kahng has worked on studies of impurity diffusion into silicon, feasibility studies of MOS transistors, hot electron devices, and on silicon epitaxial film doping profile studies. Since 1964, he has supervised a group concerned with development of surface barrier diodes, large gap and ferroelectric semiconductors, and luminescence in thin-film devices, charge-coupled devices, and MIS charge-storage memory devices. Fellow, IEEE; Life Member, Korean Physical Society; Member, Sigma Xi, Pi Mu Epsilon.

Louis J. Lanzerotti, B.S. (Engineering Physics), 1960, University of Illinois; M.A., 1963, and Ph.D., 1965, Harvard University; Bell Laboratories, 1965—. In 1972, Mr. Lanzerotti served as Visiting Scientist in the Department of Physics, University of Calgary. At Bell Laboratories, he is a member of the Radiation Physics Department. Member, American Physical Society, American Geophysical Union, Society of Terrestrial Magnetism and Electricity of Japan.

Joseph R. Ligenza, B.S. (Chemistry), 1951, Illinois Institute of Technology; M.A., 1952, and Ph.D. (Physical Chemistry), 1954, Columbia University; Bell Laboratories, 1954—. Mr. Ligenza has been engaged in studies on aspects of silicon oxidation and chemical reactions in plasmas. Member, Sigma Xi, Phi Lambda Epsilon.

Carol G. MacLennan, A.B. (Mathematics), Pembroke College in Brown University, 1960; Bell Laboratories, 1960—. In 1963–1964, Ms. MacLennan was on the staff of the Cornell University Computation Center. Since 1964, she has been a member of the Radiation Physics Research Department at Bell Laboratories.

Jack M. Manley, B.S. (Electrical Engineering), 1930, University of Missouri; Bell Laboratories, 1930–1974. He was first concerned with theoretical and experimental studies of nonlinear electric circuits. The Manley-Rowe relations are a result of this work. A few years were spent in adapting nonlinear coils to generate very high voltage pulses for use in radar transmitters. He later worked with new multiplex methods for communication systems, including early research work on PCM. Afterward, he was engaged in transmission-line research, then in study of noise problems in digital transmission systems. During the past several years he has been studying the use of negative impedances in transmission lines. Upon retirement, he was appointed Visiting Professor in the Department of Electrical and Computer Engineering of the University of Wisconsin at Madison. Fellow, IEEE; member, Sigma Xi, Tau Beta Pi, Eta Kappa Nu.

Dietrich Marcuse, Diplom Vorpruefung, 1952, Dipl. Phys., 1954, Berlin Free University; D.E.E., 1962, Technische Hochschule, Karlsruhe, Germany; Siemens and Halske (Germany), 1954–1957; Bell Laboratories, 1957—. At Siemens and Halske, Mr. Marcuse was engaged in transmission research and studying coaxial cable and circular waveguide transmission. At Bell Laboratories, he has been engaged in studies of circular electric waveguides and work on gaseous masers. He spent one year (1966–1967) on leave of absence from Bell Laboratories at the University of Utah. He is presently working on the transmission aspect of a light communications system. Mr. Marcuse is the author of three books. Fellow, IEEE; member, Optical Society of America.

Charles T. Neppell, B.A. (Physics), 1965, Queens College; Bell Laboratories, 1968—. Mr. Neppell's early work at Bell Laboratories was in semiconductor device physics and included spectroscopic investigations of semiconductor properties. As a member of the Unipolar Integrated Circuit Laboratory, he is presently involved in designing and testing semiconductor memory circuits.

William J. Sundburg, B.S.E.E., 1968, Newark College of Engineering; M.S.E.E., 1971, Rutgers; Bell Laboratories, 1959—. Mr. Sundburg initially worked in the Surface Physics Research Department on semiconductor surface phenomena. In 1965 he transferred to the Physical Chemistry Research Department to study oxide film growth on single crystal metals in ultrahigh vacuum. From 1969 to present, Mr. Sundburg has been working in the Unipolar Integrated Circuit Laboratory designing and testing integrated circuits.

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Aaron D. Wyner, B.S. 1960, Queens College; B.S.E.E., 1960, M.S., 1961, and Ph.D., 1963, Columbia University; Bell Laboratories, 1963—. Mr. Wyner has been doing research in various aspects of information and communication theory and related mathematical problems. He spent the year 1969-1970 visiting the Department of Applied Mathematics, Weizmann Institute of Science, Rehovot, Israel, and the Faculty of Electrical Engineering, the Technion, Haifa, Israel on a Guggenheim Foundation Fellowship. He has also been a full- and part-time faculty member at Columbia University and the Polytechnic Institute of Brooklyn. He has been chairman of the Metropolitan New York Chapter of the IEEE Information Theory Group, and has served as an associate editor of the Group's *Transactions* and as cochairman of two international symposia. He is presently second vice-president of the IEEE Information Theory Group. Member, IEEE, AAAS, Tau Beta Pi, Eta Kappa Nu, Sigma Xi.