

## Contributors to This Issue

M. M. ATALLA, B.S., Cairo University, 1945; M.S., Purdue University, 1947; Ph.D., Purdue University, 1949; Studies at Purdue undertaken as the result of a scholarship from Cairo University for four years of graduate work. Bell Telephone Laboratories, 1950-. For the past three years he has been a member of the Switching Apparatus Development Department, in which he is supervising a group doing fundamental research work on contact physics and engineering. Current projects include fundamental studies of gas discharge phenomena between contacts, their mechanisms, and their physical effects on contact behavior; also fundamental studies of contact opens and resistance. He is a member of Sigma Xi, Sigma Pi Sigma, Pi Tau Sigma, the American Physical Society, and an associate member of the A.S.M.E.

KENNETH JOSEPH BUSCH, B.S. in electrical engineering, Lehigh University, 1951. He joined Bell Telephone Laboratories as a member of technical staff the same year. He has worked in the transmission transformer group, principally on high voltage pulse transformers and magnetic pulse modulators. Mr. Busch is a member of the Institute of Radio Engineers, Tau Beta Pi and Eta Kappa Nu.

J. JAMES EBERS, B.S., Antioch College, 1946; M.S., Ph.D., Ohio State University, 1947, 1950. Bell Telephone Laboratories, 1951-. Prior to joining the Laboratories, Dr. Ebers served as an Instructor in Electrical Engineering at Ohio State University from 1947 to 1950, and as Assistant Professor from 1950 to 1951. He worked as a Research Foundation Assistant and Associate at Ohio State University from 1946 to 1951. His early work at the Laboratories was concerned with the development of transistors for switching applications, and for the past 2½ years he has been concerned with the development of the alloyed junction transistor. Member of the American Physical Society, Eta Kappa Nu, and Sigma Xi. Member of the I.R.E. and past chairman of its task force to standardize methods of tests for transistors in switching applications.

ANDREW D. HASLEY, B.S. in E.E., University of Michigan, 1930; Bell Telephone Laboratories, 1930-. His early work was concerned with the

design and development of transformers for use in telephone carrier systems. During World War II, he was engaged in the design and development of high-voltage pulse transformers for radar systems. Since January, 1945, he has been a supervisor of the pulse transformer group. Member of Tau Beta Pi and the Special Quality Transformer and Reactor Committee of the Radio Electronics and Television Manufacturers Association, 1950 to present. Senior member of the I.R.E.

WARREN P. MASON, B.S. in E.E., University of Kansas, 1921; M.A. and Ph.D. in Physics, Columbia University, 1925 and 1928. He joined the Engineering Department of Western Electric in 1921 before it was succeeded by Bell Telephone Laboratories. His first four years of work were spent in investigations of carrier-transmission systems. Since then he has been involved in investigation of wave transmission networks, both electrical and mechanical, in piezo-electric crystal research, and in the study of the mechanical properties of liquids and solids. At present he heads a subdepartment in the Mathematical Research Department concerned with Mechanics Research. President Acoustical Society of America. Fellow of the Institute of Radio Engineers and the American Physical Society.

GEORGE H. MEALY, A.B., Harvard College, 1951. Mr. Mealy joined Bell Telephone Laboratories in 1951. A member of the Switching Development Department, Mr. Mealy at present heads a group concerned with Fundamental Design Techniques. From 1946 to 1948 he was an electronics technician in the Navy. In 1954, Mr. Mealy taught courses in switching theory and digital computers at the College of the City of New York. Member of the Association for Computing Machinery and the Association for Symbolic Logic, and associate member of the Institute of Radio Engineers.

S. L. MILLER, B.S., Webb Institute of Naval Architecture, 1944; M.A. in Physics, Columbia University, 1949; Ph.D. in Physics, Columbia University, 1952; taught at City College of New York, 1948-1950; Bell Telephone Laboratories, 1952-. Since he has been at the Laboratories Dr. Miller has been engaged in exploratory development work on transistors. He is a member of the American Physical Society and Sigma Xi.

DR. CARL NEITZERT received his B.S. in E.E. in 1928 and his M.A. in Mathematics in 1929 from the University of Missouri. His Sc.D. in E.E. was obtained from the Massachusetts Institute of Technology in

1936 and an honorary degree of Master of Engineering from the Stevens Institute in the Fall of 1954. He was a teaching assistant, research assistant and instructor at M.I.T. during the period 1929 to 1940 and Assistant Professor, Associate Professor and Professor at Stevens from 1940 to 1955. While at Stevens he did electronic consulting work for the New Jersey State Police (1941 and 1942) and General Time Corporation Research Laboratory (1945 to 1955). Since June, 1955, he has been a full-time research engineer at the General Time Corporation Research Laboratory. He has published two papers, *The Measurement of Small Alternating Voltages at Audio Frequencies* (Co-author with E. A. Johnson) R.S.I., Vol. 5, May, 1934, and *Thermal Agitation Voltages in Resistors*, Physics, Vol. 5, October, 1934. His doctor's thesis was entitled, *The Synthesis of a Two-Terminal, Non-Dissipative Network for a Finite Band of Frequencies*. Dr. Neitzert is a member of the I.R.E. Symbols Committee (1946 to date), and was a member of the I.R.E. Circuits Committee (1945 to 1947). In addition to his membership in I.R.E., he is a member of A.I.E.E., Sigma Xi, Tau Beta Pi, Eta Kappa Nu and Pi Mu Epsilon.

S. A. SCHELKUNOFF, B.A. and M.A., State College of Washington, 1923; Ph.D., Columbia University, 1928. Western Electric Company, 1923-25; Bell Telephone Laboratories, 1925-26. The State College of Washington faculty, 1926-29. Bell Telephone Laboratories, 1929-. In the early thirties, Mr. Schelkunoff embarked on a continuing study of electromagnetic theory. This included early research in the transmission properties of coaxial lines. For many years he has worked on the theory of wave guides for transmitting microwaves and on theories of various antennas for radio communication. During World War II Mr. Schelkunoff served as a consultant on wave propagation to the National Defense Research Committee and the Navy. Other problems which have engaged Mr. Schelkunoff's attention have concerned resonators, attenuators, radiating horns, artificial grounds and similar aspects of electromagnetic theory. He holds a number of patents on wave guides, antennas and resonators. He is the author of three books, co-author of a fourth and the author of numerous technical papers and articles. Awarded the Morris Liebmann Memorial Prize by the Institute of Radio Engineers in 1942 and the Stuart Ballantine Medal by the Franklin Institute in 1949. Fellow of the Institute of Radio Engineers, Fellow of the American Institute of Electrical Engineers, Fellow of The Association for the Advancement of Science. Also member of the American Mathematical Society, and the Mathematical Association of America.