

PUBLICATIONS

Compilation of principal recently published books and technical articles written by APL staff members.

- D. K. Anand and S. A. Jeter (Univ. of Maryland), "Passive Radiation Coolers for Infrared Sensors," *J. British Interplanetary Soc.* **23**, No. 7, Jul. 1970, 495-508.
- A. J. Zmuda, J. C. Armstrong, and F. T. Heuring (Geonautics, Inc.), "Characteristics of Transverse Magnetic Disturbances Observed at 1100 Kilometers in the Auroral Oval," *J. Geophys. Res., Space Phys.* **75**, No. 25, Sept. 1, 1970, 4757-4762.
- L. Monchick, "Intermediate Operators and the Kinetic Theory of Gases," *J. Chem. Phys.* **53**, No. 5, Sept. 1, 1970, 2091-2095.
- A. A. Westenberg, N. deHaas, and J. M. Roscoe, "Radical Reactions in an Electron Spin Resonance Cavity Homogeneous Reactor," *J. Phys. Chem.* **74**, No. 19, Sept. 17, 1970, 3431-3438.
- L. W. Ehrlich, "Complex Matrix Inversion Versus Real," *Commun. of ACM* **13**, No. 9, Sept. 1970, 561-562.
- R. Turner, "Theta-Pinch Plasma Gun for High-Beta Injection," *Phys. Fluids* **13**, No. 9, Sept. 1970, 2398-2406.
- N. C. Nicholas and H. Überall (The Catholic Univ. of America), "Normal-Mode Propagation Calculations for a Parabolic Velocity Profile," *J. Acoustical Soc. Am.* **48**, No. 3, Sept. 1970, 745-752.
- G. J. Laughlin, "Array 1: Calculation of the Active Transmit Impedance for a Phased-Array Antenna of Lossless Elements," *IEEE Trans. on Microwave Theory and Techniques* **MTT-18**, No. 9, Sept. 1970, 666-667.
- G. J. Laughlin, "Array 2: Calculation of the Active Transmit Impedance for a Phased-Array Antenna Simulated in Waveguide," *IEEE Trans. on Microwave Theory and Techniques* **MTT-18**, No. 9, Sept. 1970, 667-669.
- R. Turner, "High-Beta Plasma Injection into Linear Multipole Fields," *Phys. Fluids* **13**, No. 10, Oct. 1970, 2597-2605.
- F. J. Adrian, "Role of Diffusion-Controlled Reaction in Chemically Induced Nuclear Spin Polarization," *J. Chem. Phys.* **53**, No. 8, Oct. 1970, 3374-3375.
- R. E. Jenkins and E. A. Mason (Brown Univ.), "Thermal Effects in Rarefied Binary Gas Mixtures," *Phys. Fluids* **13**, No. 10, Oct. 1970, 2478-2483.

ADDRESSES

Principal recent addresses made by APL staff members to groups and organizations outside the Laboratory.

- M. H. Friedman, "Computer Experiments on the Cornea Epithelial Pump Rate and Electrical Properties," *Australian Chemical Engineering Conference*, Sydney, August 24, 1970.
- V. O'Brien, "Viscous Two-Fluid Model for Solid-Liquid Flows," *1970 International Fluid Dynamics Symposium*, McMaster University, Ontario, Canada, August 25, 1970.
- M. H. Friedman, "A Theory of Swelling, and its Application to the Corneal Stroma," *Commonwealth Scientific and Industrial Research Organization*, Canberra, Australia, August 27, 1970.
- The following two papers were presented at the *American Mathematical Society*, Laramie, Wyoming, August 27-28, 1970:
- D. W. Fox, "Special Measures and Separation of Variables;"
- V. G. Sigillito, "On a Theorem of Edelman and Generalizations."
- M. H. Friedman, "Corneal Swelling, Theory and Experiment," *University of New South Wales, School of Physics*, Sydney, Australia, September 1, 1970.
- B. F. Hochheimer, "A Laser Retinal Evaluator," *Gordon Research Conference on Lasers in Medicine and Biology*, Meriden, New Hampshire, August 31 - September 4, 1970.
- E. P. Gray, "New Prospects for Fusion Power," *The Johns Hopkins University, Physics Department Colloquium*, Baltimore, September 24, 1970.
- A. I. Mahan, C. V. Bitterli, and H. J. Unger, "Some Macroscopic Properties of Dielectric Absorbing and Active Cylinders," *Optical Society of America*, Hollywood, Florida, September 29, 1970.
- K. Moorjani, "Disordered Semiconductors," *The Catholic University of America, Physics Department* Washington, D.C., October 2, 1970.
- J. R. Kuttler, "Remarks on a Stekloff Eigenvalue Problem," *SIAM Fall Meeting*, Boston, October 14, 1970.
- A. A. Westenberg, "Application of ESR to Chemical Kinetics," *Howard University Chemistry Seminar*, Washington, D.C., October 15, 1970.

APL COLLOQUIA

- Oct. 9 - "Time and Frequency Standardization," by L. J. Rueger, APL.
- Oct. 16 - "Solid Geophysics: From Sea-Floor Spreading to Mountain Building," by W. M. Elsasser, University of Maryland.
- Oct. 30 - "Clean Power from Coal," by A. M. Squires, City University of New York.

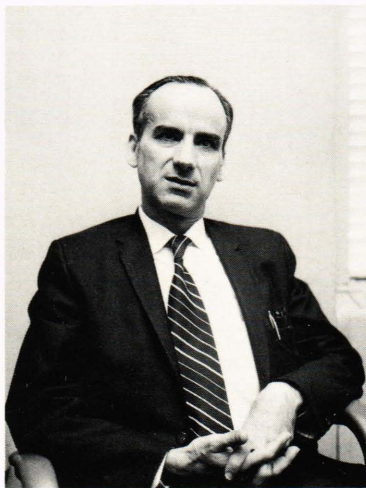
PATENTS

- E. E. Gick—*Microcircuit Test Probe with Grappler*, Patent No. 3,500,191.
- D. E. Buchholz, T. W. Sheppard—*Raid Analysis Computer*, Patent No. 3,500,397.
- T. C. Cheston, H. M. Grady—*Sub-Array Horn Assembly for Phased Array Application*, Patent No. 3,500,422.
- D. D. Scott—*Flashblindness Protective Apparatus*, Patent No. 3,507,552.
- T. A. Stansell, Jr.—*Phase Modulator Decoder*, Patent No. 3,508,248.
- C. F. Andren—*Dissipative Voltage Regulator*, Patent No. 3,509,449.
- T. Wyatt—*Controllable Heat Pipe*, Patent No. 3,517,730.
- H. A. Kues, Jr. and J. C. Murphy—*Crystal Growth in Aqueous Solution Utilizing Complexing Agents*, Patent No. 3,518,049.
- B. F. Hoffman and R. W. Carruthers, Sr.—*Solid State Chopper*, Patent No. 3,518,453.
- T. W. Pearce, A. K. Hochberg and T. O. Poehler, Jr.—*Pulse Generator*, Patent No. 3,518,455.
- R. H. Hallendorff—*Transition Structure for Broadband Coupling of Dielectric Rod Antenna to Coaxial Feed*, Patent No. 3,518,691.
- A. F. Bulfer—*Meter Reading System Comprising Filming of Meter Dial and Subsequent Analysis of the Film Using Correlation Techniques*, Patent No. 3,521,075.
- J. H. Kuck—*Driver Circuit for Latching Type Ferrite*, Patent No. 3,521,079.
- C. M. Blackburn, F. A. Oyhus, and R. S. Brashears—*Capsule for Orbiting Otolith Specimens*, Patent No. 3,521,619.

WITH THE AUTHOR

S. N. Foner, author of "High Sensitivity Mass Spectrometry of Transient Species," is Chairman of the Editorial Board of the *APL Technical Digest*. He has been a co-author of two previous papers in the *Digest*—"Mass Spectrometry of Free Radicals and Metastable Molecules" in the March-April 1966 issue and "Mass Spectrometry of Very Fast Chemical Reactions" which appeared in the July-August 1968 issue. Dr. Foner received the B. S. degree in mathematics and physics, and M. S. and D. Sc. degrees in physics from Carnegie-Mellon University.

A specialist in mass spectrometry, electron-spin resonance, molecular beams, free radicals, electron impact phenomena, and acoustics, Dr. Foner's first assignment at APL in 1945 was as a physicist in the Aerodynamics Group. Later, as Supervisor of the Mass Spectrometry Group



in the Research Center, he was concerned with research on appearance potentials, detection of free radicals, and reaction kinetics. Among his

varied activities, Dr. Foner has served as Science Coordinator, U. S. Science Exhibit, Seattle World's Fair, 1962, and as a member of the Committee of the National Academy of Sciences-National Research Council, Advisory to the Army Research Office. In his present position as Supervisor of the Electronic Physics Group, Dr. Foner is coordinating research in mass spectrometry, electron-spin resonance, atomic and molecular physics, space and ionospheric physics, and acoustics. Dr. Foner is a Fellow of the Washington Academy of Sciences and was the recipient of its Physical Science Award in 1954. He is also a member of the Cosmos Club, the Combustion Institute, the Philosophical Society of Washington, and is a Fellow of the American Association for the Advancement of Science and the American Physical Society.

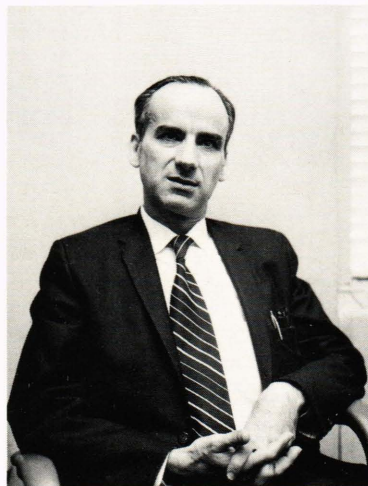
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