

## PUBLICATIONS AND REPORTS

### MEETING PAPERS PRESENTED

Conference on Practical Utilization of Recorded Knowledge, School of Library Science,  
Western Reserve University, Cleveland  
Jan. 15-18, 1956

R. M. Fano, Information theory and the retrieval of recorded information  
(invited)

IRE National Convention, New York  
March 19-22, 1956

A. G. Bose, A theory for the experimental determination of optimum nonlinear systems

N. DeClaris, Driving-point impedance functions of active networks

H. A. Haus and R. B. Adler, Two invariants of noisy linear amplifiers

K. H. Powers, A prediction theory approach to information rates

P. D. Wall, J. Y. Lettvin, W. H. Pitts, and W. S. McCulloch, Limits on nerve impulse transmission

16th Annual Conference on Physical Electronics, Massachusetts Institute of Technology  
March 22-24, 1956

S. Aisenberg, Harmonic analysis of distribution functions

H. H. Kolm, Long-time changes in work-function

W. J. Lange, Reflection of slow electrons from tantalum

W. B. Nottingham, The application of the Fowler and Richardson thermionic equations in their relation to thermionic emission from oxide cathodes

H. Shelton, Retarding potential experiment with single crystals

Eastern Psychological Society Meeting, Atlantic City  
March 23-24, 1956

N. Y. S. Kiang and M. H. Goldstein, Jr., Waveform of electrical responses in the auditory nervous system as a function of the onset characteristics of the stimulus

American Physiological Society and Federation of American Societies for Experimental Biology, Atlantic City  
April 15-20, 1956

A. R. Johnson, P. D. Wall, J. Y. Lettvin, W. S. McCulloch, and W. H. Pitts, Excitability changes in anatomical components of the monosynaptic arc, following tetanic stimulation

N. Y. S. Kiang and M. H. Goldstein, Jr., Responses from auditory cortex to repeated bursts of noise

## MEETING PAPERS PRESENTED (continued)

Department of Physics Lecture Series, University of Minnesota, Minneapolis  
April 17, 1956, April 19, 1956

- S. C. Brown, Microwave gas-discharge breakdown (invited)
- S. C. Brown, Electron-ion plasma oscillations (invited)

Conference for Visual Research Specialists, Cleveland  
April 23-25, 1956

- W. S. McCulloch, Synoptic diagram of the optic systems (invited)

IRE (PGCT)-PIB Network Symposium, Polytechnic Institute of Brooklyn  
April 25-27, 1956

- R. C. Booton, Jr., Optimum design of final-value control systems
- T. E. Stern, Piecewise-linear analysis and synthesis

Congrès International "Tubes Hyperfréquences," Paris, France  
May 2-June 2, 1956

- H. A. Haus and R. B. Adler, Theoretical limitations on the noise performance of linear amplifiers

## SEMINAR SERIES

- M. V. Cerrillo, Methods of Approximate Integration  
(Spring and Summer, 1956)
- M. V. Cerrillo, Linear Integral Equations – Directed Toward Future Application in  
the Synthesis of Linear Systems (Spring and Summer, 1956)
- M. V. Cerrillo, The Cliff Method of Integration; Its Application to Some Problems  
in Dispersive Media
- J. R. Zacharias, Atomic and Molecular Radiation  
(April and May, 1956)

## JOURNAL ARTICLES ACCEPTED FOR PUBLICATION

(Reprints may be requested from the Document Room, 20-B-221,  
Research Laboratory of Electronics, Massachusetts Institute of  
Technology, Cambridge 39, Massachusetts)

- S. Aisenberg, Harmonic analysis of distribution functions (16th Annual Conference on  
Physical Electronics, M. I. T.)
- E. F. Bolinder, Impedance and polarization-ratio transformations by a graphical  
method using the isometric circles (Trans. IRE (PGMTT))
- E. F. Bolinder, Impedance transformations by extension of the isometric circle  
method to the three-dimensional hyperbolic space (J. Math. Phys.)

## JOURNAL ARTICLES ACCEPTED FOR PUBLICATION (continued)

- R. C. Booton, Jr., Optimum design of final-value control systems (Proc. IRE(PGCT)-PIB Network Symposium, Polytechnic Institute of Brooklyn)
- A. G. Bose, A theory for the experimental determination of optimum nonlinear systems (IRE Convention Record)
- N. DeClaris, Driving-point impedance functions of active networks (IRE Convention Record)
- N. DeClaris, An existence theorem for driving-point impedance functions (J. Math. Phys.)
- R. M. Fano, Information theory and the retrieval of recorded information (Proc. Conference on Practical Utilization of Recorded Knowledge, Western Reserve University)
- H. A. Haus and R. B. Adler, Two invariants of noisy linear amplifiers (IRE Convention Record)
- A. R. Johnson, P. D. Wall, J. Y. Lettvin, W. S. McCulloch, and W. H. Pitts, Excitability changes in anatomical components of the monosynaptic arc, following tetanic stimulation (Abstract, Proc. Federation of Am. Societies for Experimental Biology)
- H. H. Kolm, Long-time changes in work-function (16th Annual Conference on Physical Electronics, M.I.T.)
- W. J. Lange, Reflection of slow electrons from tantalum (16th Annual Conference on Physical Electronics, M.I.T.)
- W. B. Nottingham, The application of the Fowler and Richardson thermionic equations in their relation to thermionic emission from oxide cathodes (16th Annual Conference on Physical Electronics, M.I.T.)
- K. H. Powers, A prediction theory approach to information rates (IRE Convention Record)
- H. Shelton, Retarding potential experiment with single crystals (16th Annual Conference on Physical Electronics, M.I.T.)
- T. E. Stern, Piecewise-linear analysis and synthesis (Proc. IRE(PGCT)-PIB Network Symposium, Polytechnic Institute of Brooklyn)
- M. W. P. Strandberg, M. Tinkham, I. H. Solt, Jr., and C. F. Davis, Jr., Recording magnetic-resonance spectrometer (Rev. Sci. Instr.)
- P. D. Wall, J. Y. Lettvin, W. H. Pitts, and W. S. McCulloch, Limits on nerve impulse transmission (IRE Convention Record)
- V. H. Yngve, The outlook for mechanical translation (Le Linguiste, Belgium)
- V. H. Yngve, The technical feasibility of translating languages by machine (Trans. AIEE)

## LETTERS TO THE EDITOR ACCEPTED FOR PUBLICATION

- E. F. Bolinder, Maximum efficiency of four-terminal networks (Proc. IRE)
- E. F. Bolinder, The optimum tapered transmission line matching section (Proc. IRE)

## TECHNICAL REPORTS PUBLISHED

(These and previously published technical reports may be obtained from the Document Room, 20-B-221, Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge 39, Massachusetts)

- 239 H. E. Rowe, Noise analysis of a finite electron gun in an infinite magnetic field
- 267 E. B. Hensley, The conduction mechanism in oxide-coated cathodes
- 294 C. Fried, Noise in electron beams
- 297 R. A. Silverman, On binary channels and their cascades
- 311 K. H. Powers, A unified theory of information