



the MONITOR

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FERROELECTRICS—Wed., October 7, 7:30 P. M.



Warren P. Mason

WARREN P. MASON was born in Colorado Springs, Colorado, in 1900. He graduated from the University of Kansas in 1921 and obtained the A.M. degree in 1924 and the Ph.D. degree in 1928 from Columbia University. From 1921 to date he has been a research engineer and physicist with the Bell Telephone Laboratories. His principal contributions have been in the fields of piezoelectric crystals, ultrasonics, and electrical networks.

Dr. Mason is a member of Sigma Xi and Tau Beta Pi, and a Fellow of the American Physical Society, the Acoustical Society of America, and the Institute of Radio Engineers. He is the author of numerous technical papers and of the book "Electromechanical Transducers and Wave Filters."

FERROELECTRICS AND THE DIELECTRIC AMPLIFIER by W. P. Mason (Bell Telephone Laboratories, Inc., Murray Hill, N. J.)

ABSTRACT

Ferroelectrics are the dielectric analogues of ferromagnetic materials. A review of the properties of the most used ferroelectric barium titanate is given. Large dielectric constants are obtained for ceramics composed of sintered small crystals and these can be stabilized by certain additives. The change in dimensions associated with the spontaneous polarization is the source of large piezoelectric effects in the ceramics which have been used in transducers and filters. The non-linearity of the charge voltage relation can be used in producing dielectric amplifiers and storage devices. Dielectric amplifiers work best for materials having large non-linearity effects with small hysteresis loops while storage devices require square type hysteresis loops with low coercive forces.

PLACE—Engineering Societies Bldg., 33 W. 39th St., Main Auditorium.

PRE-MEETING DINNER—6:00 P. M., Midston Grill, 22 E. 38th St. Everyone welcome—no reservations necessary.

NEXT MEETING—Wed., November 4, "Guided Missiles, Weapons Old and New" by Donald E. Mullen, General Electric Co.

LECTURE SERIES SPONSORED JOINTLY BY IRE-AIEE

Fall 1953

7:00 P. M., Room 502, ENGINEERING

SOCIETIES BUILDING, 33 West 39th Street, New York City

PULSES AND PULSE TECHNIQUES

The use of pulses and pulse techniques has become an important factor in many branches of the electronic art including communications, industrial design and scientific research. The concepts and circuits associated with pulse work, especially in the microsecond range, differ markedly from the familiar ones found in steady-state sine-wave applications. A well-developed body of knowledge is now available relating to this field and the more important aspects will be covered in the following series of lectures.

1 October 19

BASIC PROPERTIES OF PULSES

J. H. Mulligan, New York University. Fundamental Pulse Characteristics; Steady-State and Transient Pulse Analysis; Distortion of Pulses.

2. October 26

CIRCUIT RESPONSE TO PULSES

O. E. Dow, RCA Laboratories. R-L and R-C Coupling Circuits; Differentiators and Integrators; Pulse Transformers; Delay Lines and Pulse-Forming Networks.

3. November 2

BASIC BUILDING BLOCKS—I

W. A. Malthaner, Bell Telephone Laboratories. Astable and Monostable Multivibrators; Toggles (Flip-Flops); Binary Counters; Saw-Tooth Generators; Blocking Oscillators.

4. November 9

BASIC BUILDING BLOCKS—II

R. K. Steinberg, IBM Laboratories. Limiters; DC Restorers; Gating Circuits; Diode Logic Circuits; Decimal Counters (Tubes and Transistors).

5. November 16

PULSE MEASUREMENTS

M. B. Kline, A. B. DuMont Laboratories. Characteristics of Pulse Generating and Measuring Equipment; Interconnection of Equipment; Examples of Correct and Incorrect Techniques.

6. November 23

APPLICATIONS AND SPECIAL DEVICES

S. Moskowitz, Federal Telecommunication Laboratories. Pulse Circuits in TV, Communication and Navigational-Aid Systems; Circuit Simplifications; Special Tubes and Other Devices.

Fees: \$1.00 per lecture, \$4.00 for the series to IRE, AIEE, AIME, ASCE, ASME members; others \$1.50 per lecture, \$6.00 for the series. Send notice of registration to O. J. Murphy, Bell Telephone Laboratories, Inc., 463 West St., New York 14, N. Y., accompanied by appropriate check or M. O., payable to N. Y. Section, IRE.

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Field Trips

R. Petruzzelli—Allen B. DuMont Labs.
1500 Main Ave.
Clifton, N. J.

Refreshments

A. R. Morton—18 Maple St.
Brooklyn 25, N. Y.

Publication

H. S. Renne—Ziff-Davis Pub. Co.
366 Madison Ave.
New York 17, N. Y.

Lecture Series

O. J. Murphy—Bell Telephone Labs.
463 West St.
New York 14, N. Y.

(Continued next month)

LONG ISLAND SECTION

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The next meeting will be held on Tuesday, October 13 at the Stewart Ave. school, corner of Clinton Road and Stewart Ave., Garden City, L. I., 8:00 P. M. Mr. J. R. Pierce of Bell Telephone Labs. will discuss recent advances in microwaves tubes. There will be a pre-meeting dinner at Felices, Post Ave. and Old Country Road, Westbury, at 6:00 P. M. No reservations necessary.

SUBSECTIONS

Northern New Jersey

G. P. MCCOUCH, Chairman
F. A. POLKINGHORN, Vice-Chairman
W. R. THURSTON, Secretary
H. R. TERHUNE, Treasurer

The next meeting will be held on Wednesday, October 14, 8:00 P. M., at the Federal Telecommunication Lab. auditorium, Nutley, N. J. Mr. R. T. Cappodanno and Walter Lucas of Emerson Radio and Phonograph Corp. will discuss "The Practical Aspects of Home Receiver Design." There will be a pre-meeting dinner at the Riverview Inn, Delawanna, at 6:15 P. M.

Monmouth

O. D. PERKINS, Chairman
W. M. GOODALL, Vice-Chairman
E. MASSELL, Secretary-Treasurer

The next meeting will be held on Wednesday, October 21, at the Post Demonstration Theater, Ft. Monmouth. Speaker and topic to be announced.

Mid-Hudson

D. SALING, Chairman
J. HICKERSON, Vice-Chairman
E. A. KELLER, Secretary-Treasurer

The next meeting will be held on Thursday, October 22, at the Nelson House in Poughkeepsie. Mr. William Keister of Bell Telephone Labs. will speak on "Logical Switching Circuits."

H. S. RENNE
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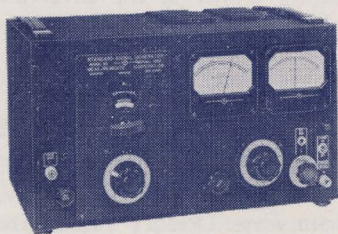
AIEE LECTURE SERIES

Just a note to remind you of the two lecture series that have been made available to IRE members by the AIEE. The first is on magnetic amplifiers and will be held on 12 consecutive Wednesday nights, starting Oct. 7. The second will consist of 14 Tuesday night sessions,

starting October 6, and will be on "Instrumentation and Control."

For further information or registration, contact Mr. S. Friend, Jr., Chairman, Education Committee of N. Y. Section, AIEE, Power and Industrial Division, in care of Anaconda Wire & Cable Co., 25 Broadway, N. Y. 6.

Laboratory Standards



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