

1964 PTGMTT International Symposium

TECHNICAL PROGRAM

TUESDAY, MAY 19, 1964

9:30-10:00 Introductory Session

WELCOMING REMARKS

S. W. Rosenthal, *Chairman, Steering Committee, 1964 PTGMTT International Symposium*

D. D. King, *Chairman, PTGMTT National Administrative Committee*

KEYNOTE ADDRESS—THE ERA OF MICROWAVES

E. Weber, *President, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.*

10:00-12:45 Session I—Waveguides

Chairman: L. Lewin

Standard Telecommunication Laboratories, Harlow, England

- I-1 CHARACTERISTICS OF LOG-PERIODIC TRANSMISSION LINE CIRCUITS, R. H. DuHamel and M. E. Armstrong, *Hughes Aircraft Co., Fullerton, Calif.*
- I-2 LOG-PERIODIC PHASE DIFFERENCE CIRCUITS, R. H. DuHamel and M. E. Armstrong, *Hughes Aircraft Co., Fullerton, Calif.*
- I-3 LOG-PERIODIC OCTALINE HYBRID JUNCTIONS, R. H. DuHamel, M. E. Armstrong and M. A. Meyer, *Hughes Aircraft Co., Fullerton, Calif.*

COFFEE BREAK

- I-4 BANDPASS FILTERS WITH STEEP SKIRT SELECTIVITY, E. N. Torgow and P. D. Lubell, *Dorne and Margolin, Inc., Westbury, N. Y.*
- I-5 APPLICATION OF EXACT SYNTHESIS METHODS TO MULTI-CHANNEL FILTER DESIGN, R. J. Wenzel, *The Bendix Corp., Southfield, Mich.*
- I-6 CIRCULAR WAVEGUIDE LOADED WITH DIELECTRIC DISCS FOR INCREASED USABLE BANDWIDTH, P. J. Meier, M. A. Balfour and H. A. Wheeler, *Wheeler Laboratories, Great Neck, N. Y.*
- I-7 PROPERTIES AND APPLICATIONS OF THE TM_{11} MODE IN CYLINDRICAL DISK-LOADED WAVEGUIDE, O. H. Altenmueller, R. R. Larsen and G. A. Loew, *Stanford University, Stanford, Calif.*
- I-8 PERIODIC WAVEGUIDE STRUCTURES CONTAINING FERRI-MAGNETIC MATERIAL, P. J. B. Clarricoats and M. I. Sobhy, *University of Leeds, Leeds, England*

2:30-5:30 Session II—Ferrites

Chairman: S. Okwit

Airborne Instruments Laboratory, Deer Park, N.Y.

- II-1 A THEORY FOR THE OPERATION OF THE TETRAHEDRAL JUNCTION FERRITE SWITCH, I. Bardash, *Radio Corporation of America, Moorestown, N. J.*
- II-2 ON THE THEORY OF THE FERRITE JUNCTION CIRCULATOR, C. E. Fay and R. L. Comstock, *Bell Telephone Laboratories, Murray Hill, N. J.*
- II-3 CIRCULATOR SYNTHESIS, J. A. Weiss, *Lincoln Laboratory, Lexington, Mass., and Worcester Polytechnic Institute, Worcester, Mass.*
- II-4 A SYMMETRICAL, DISTRIBUTED-CONSTANT CIRCULATOR, R. W. Roberts, *Melabs, Palo Alto, Calif.*

COFFEE BREAK

- II-5 PHONON GENERATION AT 70 kMcps, J. B. Thaxter and P. E. Tannenwald, *Lincoln Laboratory, Lexington, Mass.*
- II-6 PROPERTIES AND EXCITATION OF SPIN WAVES—A NEW MICROWAVE TIME DELAY MEDIUM, I. Kaufman and R. F. Soohoo, *Space Technology Laboratories, Redondo Beach, Calif.*
- II-7 A TWO-PORT MICROWAVE VARIABLE DELAY LINE, F. A. Olson and L. D. Buchmiller, *Microwave Electronics Corp., Palo Alto, Calif.*
- II-8 A YIG DELAY LINE FOR USE AT MICROWAVE FREQUENCIES, R. A. Sparks, G. R. Gourley and E. L. Higgins, *Emertron-Litton, College Park, Md.*

WEDNESDAY, MAY 20, 1964

9:00-12:30 Session III—Lasers and Millimeter Waves

Chairman: K. Tomiyasu

General Electric Co., Schenectady, N. Y.

- III-1 A NOVEL SOLID STATE MODULATOR FOR MILLIMETER WAVES, A. Saeki, Y. Horiguchi and H. Tsuru, *Nippon Electric Co., Kawasaki, Japan*
- III-2 A TECHNIQUE FOR MEASURING PHASE MODULATION OR RAPID PHASE CHANGES OF A MICROWAVE SIGNAL, W. P. Ernst, *Princeton University, Princeton, N. J.*
- III-3 QUASIOPTICAL WAVEGUIDE FILTERS, J. J. Taub, H. J. Hindin and G. P. Kurpis, *Airborne Instruments Laboratory, Deer Park, N. Y.*

- III-4 MULTIPLE QUANTUM FREQUENCY CONVERSION IN EXTENDED INTERACTION STRUCTURES, D. J. Scalapino, A. Vassiliadis and R. N. Wilson, *Kane Engineering Laboratories, Palo Alto, Calif.*

COFFEE BREAK

- III-5 DETECTION AND DEMODULATION OF LASER BEAMS (*Invited Paper*), A. Siegman, *Stanford University, Stanford, Calif.*
- III-6 DEMODULATION OF MICROWAVE FREQUENCY-MODULATED LIGHT USING BIREFRINGENT CRYSTALS, E. O. Ammann, *Sylvania Electric Products, Mountain View, Calif.*, and S. E. Harris, *Stanford University, Stanford, Calif.*
- III-7 ANALYSIS OF NEGATIVE-RESISTANCE PHOTODIODES, M. Wright, *Airborne Instruments Laboratory, Deer Park, N. Y.*
- III-8 MACROSCOPIC SINGLE-MODE WAVEGUIDE FOR THE CONSTRUCTION OF OPTICAL COMPONENTS, D. W. Wilmot, *Wheeler Laboratories, Great Neck, N. Y.*

2:30-5:00 Session IV—High Power

Chairman: S. W. Rosenthal

Polytechnic Institute of Brooklyn Graduate Center, Farmingdale, N. Y.

- IV-1 HIGH-POWER LIMITATIONS OF MICROWAVE CONTROL CIRCUITS (*Invited Paper*), L. Gould, *Microwave Associates, Burlington, Mass.*
- IV-2 HIGH-POWER FILTERS FOR THE SUPPRESSION OF SPURIOUS FREQUENCIES, L. Young, B. M. Schiffman, E. G. Cristal, *Stanford Research Institute, Menlo Park, Calif.*, and O. Allen, *Rome Air Development Center, Rome, N. Y.*
- IV-3 A DC-TRIGGERED HIGH-SPEED HIGH-POWER MICROWAVE SPARK GAP SWITCH, H. Farber, M. Klinger, M. Sucher and E. Malloy, *Polytechnic Institute of Brooklyn Graduate Center, Farmingdale, N. Y.*

COFFEE BREAK

- IV-4 GENERATION OF HIGH-POWER NANOSECOND PULSES OF MICROWAVE ENERGY, M. Gilden and F. A. Jellison, *Microwave Associates, Burlington, Mass.*
- IV-5 E AND H-PLANE BENDS FOR HIGH-POWER OVERSIZED RECTANGULAR WAVEGUIDE, J. P. Quine, *General Electric Co., Schenectady, N. Y.*
- IV-6 A HIGH-POWER FERROELECTRIC LIMITER, M. Cohn and A. F. Eikenberg, *Electronic Communications, Inc., Timonium, Md.*

THURSDAY, MAY 21, 1964

9:00-12:30 Session V, Part A—Microwave Semiconductors

Chairman: R. S. Engelbrecht
Bell Telephone Laboratories, Murray Hill, N. J.

- V-1 PHASE STABILITY OF VARACTOR FREQUENCY MULTIPLIERS,
R. A. McConnell, *Stanford University, Stanford, Calif.*
- V-2 AN X-BAND PARAMETRIC AMPLIFIER WITH CLOSED-CYCLE
COOLING, C. T. Rucker, W. Morrow and E. S. Grimes, Jr., *Sperry
Microwave Electronics Co., Clearwater, Fla.*
- V-3 THE VERSATILE TUNNEL-DIODE VIDEO DETECTOR,
W. F. Gabriel, *Aero Geo Astro Corp., Alexandria, Va.*
- V-4 SOLID STATE V-BAND LOCAL OSCILLATOR AND MIXER,
X. A. De Angelis, *Sylvania Electronic Systems, Williams-
ville, N. Y.*
- V-5 DESIGN OF STABLE BROADBAND TUNNEL-DIODE AMPLIFIER,
J. H. Lepoff, *Sylvania Electronic Systems, Mountain View, Calif.*

COFFEE BREAK

- V-6 NEW DEVICE PRINCIPLES USED IN MICROWAVE DIODES (*Invited
Paper*), R. M. Ryder, *Bell Telephone Laboratories, Murray Hill, N. J.*
- V-7 INTEGRATED CIRCULATOR DESIGN FOR PARAMETRIC AMPLI-
FIER APPLICATION, C. E. Barnes, *Bell Telephone Laboratories,
Murray Hill, N. J.*
- V-8 MICROWAVE APPLICATIONS OF THE STEP RECOVERY DIODE,
R. B. Mouw and F. S. Coale, *Melabs, Palo Alto, Calif.*
- V-9 A DIODE PHASE SHIFTER FOR ARRAY ANTENNAS, J. White,
Microwave Associates, Burlington, Mass.

2:30-5:10 Session V, Part B—Microwave Semiconductors

Chairman: M. E. Hines
Microwave Associates, Burlington, Mass.

- V-10 ADVANCES IN SOLID STATE MICROWAVE DEVICES (*Invited Pa-
per*), W. Matthei, *U. S. Army Electronics Research and Development
Laboratories, Fort Monmouth, N. J.*
- V-11 IMPROVEMENTS IN REFLEX KLYSTRON LINEARITY WITH THE
USE OF VARACTOR DIODES, V. Possenti and A. Pistilli, *S.I.T.
Siemens Laboratories, Milan, Italy.*
- V-12 A 7 Gc NARROW-BAND WAVEGUIDE SWITCH USING PIN JUNC-
TION DIODES, H. J. Peppiatt, A. V. McDaniel, Jr. and J. B.
Linker, Jr., *General Electric Co., Lynchburg, Va.*

COFFEE BREAK

- V-13 BROADBAND BINARY 180° DIODE PHASE MODULATOR,
R. V. Garver, *Harry Diamond Laboratories, Washington, D. C.*
- V-14 A MONO-CONTROL MICROWAVE SEMICONDUCTOR SWITCH,
J. C. Hoover, *Sperry Microwave Electronics Co., Clearwater, Fla.*
- V-15 IMPROVED DUPLEXING TECHNIQUES EMPLOYING GAS TR AND
SEMICONDUCTOR LIMITER DEVICES, R. Tenenholtz and P.
Basken, *Microwave Associates, Burlington, Mass.*

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