

1962 PGMTT NATIONAL SYMPOSIUM

PROGRAM

MONDAY AFTERNOON, MAY 21, 1962

- 1:00- 5:00 P.M. TOURS: NBS Boulder Laboratories
- 1:00- 8:00 P.M. REGISTRATION: Lobby, Radio Building,
NBS Boulder Laboratories
- 8:00-10:00 P.M. GAB-FEST: Harvest House Hotel

TUESDAY MORNING, MAY 22, 1962

- 7:00 A.M. REGISTRATION: Lobby, Radio Building,
NBS Boulder Laboratories

9:00 - 9:45 A.M. Introductory Remarks and Keynote Speech

Dr. F. W. Brown
Director, Boulder Laboratories
National Bureau of Standards

Dr. George E. Schafer
Chairman, 1962 PGMTT National Symposium
Chief, Circuit Standards Division
National Bureau of Standards

Mr. Tore N. Anderson
PGMTT Chairman
Vice-President for Engineering
Budd-Stanley Co., Inc., Syosset, New York

KEYNOTE SPEAKER:

Dr. John M. Richardson
Chief, Radio Standards Laboratory
National Bureau of Standards

9:30-12:00 NOON Ladies Coffee: Home of Mrs. John M. Richardson

9:45 - 11:00 A.M. Session I: Microwave Frontiers

Chairman: Dr. Donald D. King
Electronic Communications, Inc.

1. 1: MILLIMETER WAVELENGTH RESONANT STRUCTURES
Robert W. Zimmerer, Milo V. Anderson, G. L. Strine,
Yardley Beers 1
1. 2: SUPERCONDUCTING DELAY LINE
R. J. Allen, A. J. Cummings, F. M. Kudo 4
1. 3: FERROELECTRIC PHASE SHIFTERS FOR VHF AND UHF
Marvin Cohn, Andrew F. Eikenberg 6

11:00 A.M. Lunch

TUESDAY AFTERNOON, MAY 22, 1962

1:00 - 2:05 P.M. Session II: Theory, Waveguide Properties

Chairman: Professor Arthur A. Oliner
Polytechnic Institute of Brooklyn

2. 1: MICROWAVE PROPAGATION IN AN OVERDENSE BOUNDED
MAGNETOPLASMA
B. Wieder. 12
2. 2: MEASUREMENTS OF FIELD STRENGTH ON RESONATOR
BOUNDARIES BY PERTURBATION OF RADIATION FIELD
Ibrahim Hefni 18
2. 3: A GENERAL POWER LOSS METHOD FOR ATTENUATION OF
CAVITIES AND WAVEGUIDES
J. J. Gustincic, R. E. Collin 20

2:00 P.M. Ladies Buses Leave Harvest House for the
 Air Force Academy

2:05 P.M. Break

2:35 - 4:00 P.M. Session III: Theory, Waveguide Discontinuities

Chairman: Professor Arthur A. Oliner
 Polytechnic Institute of Brooklyn

- 3.1: PERTURBATION THEOREMS FOR WAVEGUIDE
 JUNCTIONS, WITH APPLICATIONS
 D. M. Kerns, W. T. Grandy, Jr. 22
- 3.2: INVESTIGATIONS OF THE REFLECTION FROM A
 JUNCTION OF AN IDEAL RECTANGULAR WAVEGUIDE
 WITH ONE HAVING ROUNDED INSIDE CORNERS
 W. J. Anson, R. W. Beatty, D. M. Kerns,
 W. T. Grandy, Jr. 27
- 3.3: ELECTROMAGNETIC DIFFRACTION BY A PLANAR
 ARRAY OF CIRCULAR DISKS
 W.H. Eggimann, R.E. Collin. 32
- 3.4: THE REPRESENTATION OF WAVEGUIDES CONTAINING
 SMALL FERRIMAGNETIC ELLIPSOIDS
 L. K. Anderson, H. J. Shaw 36

4:00 P.M. Participant's Buses Leave NBS For Air Force
 Academy

WEDNESDAY MORNING, MAY 23, 1962

8:15-3:45 P.M. Ladies Denver Tour: Buses Leave From the
 Harvest House

9:00 - 10:15 A.M. Session IV: Filters

Chairman: Dr. Seymour B. Cohn
 Rantec Corporation

- 4.1: INTERDIGITAL BAND-PASS FILTERS
 George L. Matthaei 41

4.2:	MICROWAVE BANDSTOP FILTERS WITH NARROW STOP BANDS	
	Leo Young, George L. Matthaei, Edward M. T. Jones.	46
4.3:	THE DESIGN OF BRANCH-GUIDE COUPLERS, WITH APPLICATIONS TO THE SUPPRESSION OF SPURIOUS FREQUENCIES	
	Leo Young.	52
4.4:	AN ELECTRONICALLY TUNABLE BAND PASS MICROWAVE FILTER	
	I. Kaufman, W. H. Steier.	58

10:15 A.M. Break

10:45 - 12:00 Noon Session V: High Power

Chairman: Dr. Seymour B. Cohn
Rantec Corporation

5.1:	A NEW TECHNIQUE FOR MULTIMODE POWER MEASUREMENT	
	Jesse J. Taub, Julius Goldberg	64
5.2:	A NOVEL HIGH POWER HARMONIC SUPPRESSOR	
	Ernest Wantuch, R. M. Maines	70
5.3:	LAYERED MEDIA AS HIGH POWER MICROWAVE ABSORBERS	
	S. R. Steele, R. J. Briggs.	72
5.4:	FINE GRAIN SPECTRUM ANALYSIS OF PULSED MICROWAVE AMPLIFIERS	
	Roland F. Koontz	78

12:00 NOON Lunch

WEDNESDAY AFTERNOON, MAY 23, 1962

2:00 - 3:15 P.M. Session VI: Measurements

Chairman: R. W. Beatty
National Bureau of Standards

- 6.1: SUBTLE DIFFERENCES IN SYSTEM NOISE
MEASUREMENTS AND CALIBRATION OF NOISE
STANDARDS
T. Mukaihata, B. Walsh, Jr., M. F. Bottjer,
E.B. Roberts. 85
- 6.2: AN ACCURATE MILLIMETER WAVE LOSS AND
DELAY MEASUREMENT SET
M. B. Chasek 89
- 6.3: MICROWAVE PHASE COMPARATOR
J. A. Kaiser, H. B. Smith, Jr., Wm. H. Pepper,
John H. Little 94
- 6.4: WAVEGUIDE PERTURBATION TECHNIQUES IN
MICROWAVE SEMICONDUCTOR DIAGNOSTICS
Keith S. Champlin, Donald B. Armstrong. 99

3:15 P.M. Break

3:45 - 5:00 P.M. Session VII: Components

Chairman: R. W. Beatty
National Bureau of Standards

- 7.1: FURTHER DEVELOPMENTS IN DIELECTRIC
WAVEGUIDE DEVICES FOR MILLIMETER
WAVELENGTHS
C. E. Barnes 107
- 7.2: PHASE SHIFT CHARACTERISTICS OF DIELECTRIC
LOADED WAVEGUIDE
G. F. Bland, A. G. Franco 112
- 7.3: FERRITE SWITCHES IN COAXIAL OR STRIP
TRANSMISSION LINE
C. E. Fay 119

7.4: A 6 KW PEAK POWER VARACTOR DUPLEXER	
John C. Hoover.	126

6:15- 7:00 P.M. COCKTAILS: Harvest House

7:00 P.M. BANQUET: Harvest House

MASTER OF CEREMONIES:

Mr. Theodore S. Saad
President
Sage Laboratories, Incorporated

SPEAKER: "Reminiscences of a Microwaver"

Dr. Wilmer L. Barrow
Vice-President for Research and Development
Sperry Gyroscope Company

WINNER OF 1962 MICROWAVE PRIZE:

Dr. George L. Matthaei
Head, Microwave Group, Engineering Division
Stanford Research Institute

THURSDAY MORNING, MAY 24, 1962

8:30 - 9:45 A.M. Session VIII: Limiters

Chairman: M. T. Lebenbaum
Airborne Instruments Laboratory

8.1: BANDWIDTH OF TEM DIODE LIMITERS	
Robert V. Garver, John A. Rosado.	131
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R. L. Comstock, L. J. Varnerin	142
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S. Okwit.	146

8:45-10:00 A.M. Ladies Visit to Candle Cottage: Buses Leave
From Harvest House

9:45 A.M. Break

10:15 - 11:30 A.M. Session IX: Parametric Amplifiers

Chairman: M. T. Lebenbaum
Airborne Instruments Laboratory

9.1: MULTIPLE PUMPED PARAMETRIC AMPLIFIERS	
George Spacek	151
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Raoul Pettai, Bernard B. Bossard	154
9.3: LARGE SIGNAL PROPERTIES OF NON-DEGENERATE VARACTOR PARAMETRIC AMPLIFIERS	
Darrell Jackson	159
9.4: DESIGN OF A WIDEBAND TUNNEL DIODE PREAMPLIFIER FOR PHASED ARRAY RADARS	
Donald W. MacGlashan	166

10:30-12:00 NOON Ladies Tour of NBS

11:30 A.M. Lunch

THURSDAY AFTERNOON, MAY 24, 1962

~~1:00-3:00~~

~~1:00-3:30~~ **P.M. Session X: Future of Microwave and Solid State (Invited Session)**

Chairman: Dr. Kiyo Tomiyasu
General Electric Company

10.1: MASERS AND MILLIMETER WAVES	
Frank S. Barnes	172
10.2: MICROWAVES AND SOLID STATE	
Benjamin Lax.	176
10.3: COHERENT WAVE OPTICS, NEW FRONTIER OF THE MICROWAVE ART	
A. Gardner Fox	177

FRIDAY MORNING, MAY 25, 1962

8:00-12:00 NOON TOURS: NBS Boulder Laboratories

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