

The following members of IEEE were elected as Fellows with the support of MTT-S.

**John A. Copeland**, Sangamo Weston, Inc. For contributions to the development of optically coupled semiconductor logic circuits.

**Takanori Okoshi**, Department of Electrical Engineering, University of Tokyo. For contributions to lightwave and

microwave engineering and, in particular, for the development of techniques for the analysis and synthesis of propagation in multimode fibers. Member, MTT-S.

**P. Peet Silvester**, McGill University. For contributions to the development of finite element methods and their application to electromagnetic-field problems. Member, MTT-S.

# 1982 MTT Symposium Digest

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M/A-Com, Inc., Burlington, MA
- 8:40 MTT Society Administrative Committee President  
Charles T. Rucker  
Georgia Institute of Technology, Atlanta, GA
- 8:50 Technical Program Committee Chairman  
Ralph Levy  
Microwave Development Labs, Inc., Natick, MA

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CONSTITUTION ROOM

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| 14<br>9:40                    | WAVE-GUIDING CHARACTERISTICS OF PARTIALLY CORRUGATED DIELECTRIC WAVEGUIDES<br>M. Tsuji, H. Shigesawa, K. Takiyama<br>Doshisha University, Kyoto, Japan                                          | 296 | K4<br>2:40                                                               | A FREQUENCY TRANSLATOR USING DUAL-GATE GaAs FETs<br>S. R. Mazumder, T. L. Tsai, W. C. Tsai<br>Raytheon Co., Northborough, MA<br>346                                         |
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| 16<br>10:20                   | SOME DIELECTRIC-WAVEGUIDE FILTER STRUCTURES<br>G. L. Matthaei, D. C. Park, Y. M. Kim, D. L. Johnson<br>University of California, Santa Barbara, CA                                              | 299 | K6<br>3:40                                                               | A DUAL-GATE GaAs FET ANALOG FREQUENCY DIVIDER<br>D. Kaminsky, P. Goussu, R. Funck, A. G. Bert<br>Thompson CSF, Orsay, France<br>352                                         |
| 17<br>10:40                   | INSULATED NONRADIATIVE DIELECTRIC WAVEGUIDE FOR MILLIMETER-WAVE INTEGRATED CIRCUITS<br>T. Yoneyama, S. Fujita, S. Nishida<br>Tohoku University, Sendai, Japan                                   | 302 | K7<br>4:00                                                               | WIDEBAND AGILE TRANSVERSAL FILTER<br>C. Ryan, C. Weitzel, D. Gottman, J. Frary<br>Motorola, Inc., Gilbert & Phoenix, AZ<br>355                                              |
| 18<br>11:00                   | SUSPENDED H-WAVEGUIDE AND ITS MILLIMETER WAVE APPLICATIONS<br>T. N. Trinh, R. Mittra<br>University of Illinois, Urbana, IL                                                                      | 305 | <b>SESSION L</b>                                                         |                                                                                                                                                                             |
| <b>SESSION J</b>              |                                                                                                                                                                                                 |     | <b>MICROWAVE MEASUREMENTS</b>                                            |                                                                                                                                                                             |
| <b>ACOUSTICS AND FERRITES</b> |                                                                                                                                                                                                 |     | <b>CONSTITUTION ROOM</b>                                                 |                                                                                                                                                                             |
|                               | Chairman: R. Kagwada<br>TRW, Inc., Redondo Beach, CA                                                                                                                                            |     | L1<br>1:40                                                               | COMPARISON OF SINGLE DIODE VS. DUAL DIODE DETECTORS FOR MICROWAVE POWER DETECTION<br>S. Wetenkamp<br>Pacific Measurements, Inc., Sunnyvale, CA<br>361                       |
| J1<br>8:40                    | THE ROLE OF SAW OSCILLATORS IN MILITARY RADAR SYSTEMS<br>P. Pedi, J. Loan, E. McManus<br>Raytheon Co., Bedford, MA                                                                              | 311 | L2<br>2:00                                                               | CONVERSION LOSS AND NOISE TEMPERATURE OF MIXERS FROM NOISE MEASUREMENTS<br>R. Trambarulo, H. S. Berger<br>Bell Laboratories, Holmdel, NJ<br>364                             |
| J2<br>9:05                    | A REVIEW OF SURFACE ACOUSTIC WAVE DEVICES AND THEIR CURRENT APPLICATIONS<br>R. C. Rosenfield, R. M. Hays, Jr<br>Sawtek Inc. Orlando, Florida                                                    | 314 | L3<br>2:20                                                               | A NEW MEASUREMENT OF THE NOISE PARAMETERS OF TWO-PORT DEVICES<br>N. Fanelli<br>Cise SpA, Milano, Italy<br>366                                                               |
| J3<br>9:30                    | NEW SAW OSCILLATORS FOR LAND MOBILE TELEPHONE RADIO UNIT<br>S. Urabe, S. Saito, N. Kanmuri<br>Nippon Telegraph and Telephone Public Corp<br>Yokosuka-shi, Japan                                 | 315 | L4<br>2:40                                                               | A UNIFIED ANALYSIS OF TRANSMISSION LINE DISCRIMINATORS FOR FM NOISE MEASUREMENTS<br>R. S. Brozovich<br>Sperry Electronic Systems, Clearwater, FL<br>369                     |
| J4<br>10:10                   | A TUNABLE MAGNETOSTATIC VOLUME WAVE OSCILLATOR<br>J. P. Castera, P. Hartemann, J. M. Dupont, Y. LeTron A. Bert, A. Trillaud<br>Thompson-CSF, Orsay, France                                      | 318 | L5<br>3:20                                                               | AN E-PLANE COUPLED MATCHED WAVEGUIDE 5-PORT FOR MAKING 6-PORT MEASUREMENTS OVER A FULL WAVEGUIDE BAND<br>G. P. Riblet<br>Microwave Development Labs, Inc. Natick, MA<br>372 |
| J5<br>10:30                   | A HYBRID GaAs MIC OSCILLATOR USING A MAGNETOSTATIC WAVE RESONATOR<br>J. M. Owens, R. L. Carter, Y. W. Sam<br>The University of Texas at Arlington, Arlington, TX                                | 323 | L6<br>3:40                                                               | DEVELOPMENT OF BROADBAND COAXIAL COMPONENTS FOR A 0.01 TO 40 GHz MEASUREMENT<br>W. Oldfield<br>Wiltron Co., Mountain View, CA<br>375                                        |
| J6<br>10:50                   | A MULTI-OCTAVE FREQUENCY SELECTIVE LIMITER<br>S. N. Stitzer, H. Goldie<br>Westinghouse Electric Corp. Baltimore, MD                                                                             | 326 | L7<br>4:00                                                               | VIDEO IMPEDANCE PROPERTIES OF PULSED X-BAND GaAs IMPATT DIODES<br>C. Horvitz, R. Laton, L. Olsen, D. Porterfield<br>Raytheon Co., Bedford, MA<br>378                        |
| J7<br>11:10                   | YIG-FILTER RECOVERY AFTER EXPOSURE TO HIGH POWER AND X-BAND FREQUENCY-STEPPED YIG FILTER<br>E. Schloemann, R. E. Blight<br>Raytheon Co., Lexington, MA                                          | 329 | L8<br>4:20                                                               | AUTOMATED MEASUREMENT SYSTEM FOR CHARACTERIZING POWER AMPLIFIER PERFORMANCE<br>E. R. Carlson<br>Bell Laboratories, Holmdel, NJ<br>381                                       |
| J8<br>11:40                   | LOW LOSS ELECTRONICALLY CONTROLLED EHF VARIABLE POWER DIVIDERS<br>D. S. Besse<br>Massachusetts Institute of Technology, Lincoln Lab, Lexington, MA                                              |     | <b>SESSION M</b>                                                         |                                                                                                                                                                             |
|                               | T. E. Sharon<br>Electromagnetic Sciences, Inc., Norcross, GA                                                                                                                                    | 332 | <b>NEW EFFECTS IN GUIDED WAVE STRUCTURES</b>                             |                                                                                                                                                                             |
|                               |                                                                                                                                                                                                 |     | Chairman: J. W. Mink<br>Army Research Office, Research Triangle Park, NC |                                                                                                                                                                             |

|            |                                                                                                                                                                                       |             |                                                                                                                                                                                                                        |     |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| M1<br>1:40 | SOLUTION OF FIN-LINE DISCONTINUITIES THROUGH THE IDENTIFICATION OF ITS FIRST FOUR HIGHER ORDER MODES<br>M. Helard, J. Citerne<br>Laboratoire "Structures Rayonnantes", Rennes, France | N10<br>4:00 | AN EIGHT-PHASE BROADBAND SERRODYNE MODULATOR<br>M. Topi<br>Elettronica S.P.A., Rome, Italy                                                                                                                             | 432 |
|            | O. Picon, V. Fouad Hanna<br>Centre National de Etudes des Telecommunications<br>Issy-les Moulineaux, France                                                                           | N11<br>4:00 | A BROADBAND 16 PORT MODEFORMER SYSTEM USING COMPUTER AIDED DESIGN<br>G. R. Branner, E. A. Cota, T. J. Minasi<br>ESL Inc., Sunnyvale, CA                                                                                | 435 |
| M2<br>2:00 | LEAKY MODES OF SYMMETRICAL GROOVE GUIDE<br>A. A. Oliner<br>Polytechnic Institute of New York, Brooklyn, NY                                                                            | N12<br>4:00 | MILLIMETER WAVELENGTH SOLID STATE OSCILLATOR AM & FM NOISE<br>J. R. Ashley, F. M. Palka, P. E. Pages, J. C. Rolfs<br>Sperry Electronic Systems, Clearwater, FL                                                         | 438 |
|            | P. Lampariello<br>University of Rome, Rome, Italy                                                                                                                                     | N13<br>4:00 | DESIGN AND PERFORMANCE OF DUAL-GATE GaAs MESFET UP-CONVERTER<br>A. A. deSalles<br>CETUC-Universidade Catolica, Rio de Janeiro, Brasil                                                                                  | 440 |
| M3<br>2:20 | MODE PROPAGATION IN LATERALLY BOUNDED CONDUCTOR-BACKED COPLANAR WAVEGUIDES<br>G. Leuzzi, R. Sorrentino<br>Universita' di Roma, Roma, Italy                                            | N14<br>4:00 | MODELLING AND EVALUATION OF DUAL GATE MESFETs AS LOW-NOISE, SELF-OSCILLATING AND IMAGE-REJECTION MIXERS<br>C. Tsironis, R. Meierer<br>Laboratoires d'Electronique et de Physique Appliquee<br>Limeil-Brevannes, France | 443 |
|            | A. Silbermann<br>Elettronica S.p.a., Roma, Italy                                                                                                                                      |             | R. Stahlmann<br>Institute of Semiconductor Electronics,<br>T. U. Aachen (FRG)                                                                                                                                          |     |
| M4<br>3:00 | ANALYSIS OF MIS OR SCHOTTKY CONTACT COPLANAR LINES USING THE F.E.M. AND THE S.D.A.<br>M. Aubourg, J. P. Villotte, F. Godon, Y. Garault<br>Universite de Limoges, Limoges, France      | N15<br>4:00 | SPURIOUS PRODUCT ZONE CHART - A PRACTICAL APPROACH TO FREQUENCY CONVERSION SYNTHESIS<br>A. D. Vincze<br>Ford Aerospace & Communications Corp., Palo Alto, CA                                                           | 446 |
|            | P. Kennis, P. Pribetich, C. Seguinot, P. Gelin<br>Universite de Lille 1, Villeneuve D'Ascq, France                                                                                    | N16<br>4:00 | INVESTIGATION OF A SINGLE-SIDEBAND MIXER ANOMALY<br>B. R. Hallford<br>Rockwell International, Dallas, TX                                                                                                               | 449 |
| M5<br>3:20 | SLOW-WAVE COPLANAR WAVEGUIDE ON PERIODICALLY DOPED SEMICONDUCTOR SUBSTRATE<br>Y. Fukuoka, T. Itoh<br>University of Texas at Austin, Austin, TX                                        | N17<br>4:00 | DETECTION OF VX2 CARCINOMA IN RABBITS BY PASSIVE MICROWAVE RADIOMETRY<br>J. Shaeffer, P. E. Parker, A. M. El-Mahdi<br>Eastern Virginia Medical School, Norfolk, VA                                                     | 452 |
|            | C. M. Krowne<br>Naval Research Laboratory, Washington, DC                                                                                                                             |             | K. L. Carr<br>M/A-Com, Inc., Burlington, MA                                                                                                                                                                            |     |
| M6<br>3:40 | SLOW WAVE PROPAGATION IN GENERALIZED CYLINDRICAL WAVEGUIDES LOADED WITH A SEMICONDUCTOR<br>C. M. Krowne<br>Naval Research Laboratory, Washington, DC                                  | N18<br>4:00 | EFFECT OF 330 MHz RADIOFREQUENCY RADIATION OF THE HUMAN ERYTHROCYTE GHOSTS<br>V. L. Shnyrov, G. G. Zhadan, I. G. Akoev<br>USSR Academy of Sciences,<br>Institute of Biological Physics, Moscow, USSR                   | 455 |
| M7<br>4:00 | SMITH-PURCELL RADIATION FROM A CHARGE MOVING ABOVE A PENETRABLE GRATING<br>S. L. Chuang, J. A. Kong<br>Massachusetts Institute of Technology, Cambridge, MA                           | N19<br>4:00 | THE PERFORMANCE OF INDUCTIVE SHORTWAVE DIATHERMY APPLICATORS<br>G. Kantor,<br>National Center for Devices and Radiological Health<br>Rockville, MD                                                                     | 456 |
|            |                                                                                                                                                                                       |             | C. Moon<br>University of Maryland, College Park, MD                                                                                                                                                                    |     |
|            |                                                                                                                                                                                       | N20<br>4:00 | THE DESIGN OF LOW-NOISE BROAD-BAND MICROWAVE FET AMPLIFIERS<br>Y. Wu<br>Tianjin University China<br>H. J. Carlin<br>Cornell University, Ithaca, NY                                                                     | 459 |

## Thursday Late Afternoon, 2 June 1983

SESSION N REPUBLIC BALLROOM  
OPEN FORUM SESSION II

|            |                                                                                                                                                                                  |     |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| N1<br>4:00 | EVALUATION OF MODES IN DIELECTRIC RESONATORS USING A SURFACE INTEGRAL EQUATION FORMULATION<br>D. Kajfez, A. W. Glisson, J. James<br>University of Mississippi, University, MS    | 409 |
| N2<br>4:00 | PASSIVE COMPONENTS IN INVERTED MICROSTRIP AND SUSPENDED MICROSTRIP CONFIGURATIONS<br>S. K. Koul, B. Bhat, M. C. Krishnaswamy<br>Indian Institute of Technology, New Delhi, India | 412 |
| N3<br>4:00 | INTEGRATED APPROACH TO MICROWAVE POSTPRODUCTION TUNING<br>J. W. Bandler, A. E. Salama<br>McMaster University, Hamilton, Canada                                                   | 415 |
| N4<br>4:00 | AUTOMATIC MEASUREMENT OF FILTER COUPLING PARAMETERS<br>A. E. Williams, R. G. Egri, R. R. Johnson<br>COMSAT Laboratories, Clarksburg, MD                                          | 418 |
| N5<br>4:00 | RESONANT FREQUENCIES OF DIELECTRIC LOADED WAVEGUIDE CAVITIES<br>K. A. Zaki<br>University of Maryland, College Park, MD                                                           |     |
|            | A. E. Atia<br>Communication Satellite Corporation, Washington, DC                                                                                                                | 421 |
| N6<br>4:00 | MODAL ANALYSIS OF A COAXIAL-LINE WAVEGUIDE JUNCTION<br>M. E. Bialkowski, P. J. Khan<br>University of Queensland, St. Lucia, QLD, Australia                                       | 424 |
| N7<br>4:00 | DESIGN OF AN OVERLAY DIRECTIONAL COUPLER BY A FULL-WAVE ANALYSIS<br>L. Su, T. Itoh, J. Rivera<br>University of Texas, Austin, TX                                                 | 427 |
| N8         | Paper Withdrawn                                                                                                                                                                  |     |
| N9<br>4:00 | RECTANGULAR CAVITY HIGH HARMONIC GYROTRON AMPLIFIER<br>A. M. Ferendeci<br>Case Western Reserve University, Cleveland, OH                                                         | 430 |

## Friday Morning, 3 June 1983

SESSION O GRAND BALLROOM  
MICROWAVE SYSTEMS

|             |                                                                                                                                                                         |     |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|             | Chairman J. Osepchuk<br>Raytheon Co., Lexington, MA                                                                                                                     |     |
| O1<br>8:40  | MICROWAVE TECHNOLOGY-KEY TO AWACS<br>W. A. Skillman<br>Westinghouse Electric Corp., Baltimore, MD                                                                       | 465 |
| O2          | Paper Withdrawn                                                                                                                                                         |     |
| O3          | Paper Withdrawn                                                                                                                                                         |     |
| O4<br>10:00 | A HIGH-RESOLUTION TOTAL-POWER RADIOMETER USING SAW COMPRESSIVE RECEIVERS<br>R. D. Towns, J. J. Chambers, R. F. Humphries<br>Signal Technology, Ltd., Wiltshire, England |     |
|             | C. I. Smith<br>Andersen Laboratories, Inc., Bloomfield CN                                                                                                               | 469 |



U7 CRYOGENIC ALL SOLID-STATE MILLIMETER-WAVE RECEIVERS  
4:20 FOR AIRBORNE RADIOMETRY

B. Vowinkel  
Universitat Koln, Koln, F.R.G.

K. Gruner, H. Suss  
Institut fur HF-Technik, DFVLR  
Oberpfaffenhofen, F.R.G.

W. Reinert  
Institut fur Angewandte, Festkorperphysik  
Freiburg, F.R.G.

566

V1 NEW PERSPECTIVES ON THE GREEN'S FUNCTION FOR  
1.40 QUASI-TEM PLANAR STRUCTURES

H. Lee, V. K. Tripathi  
Oregon State University, Corvallis, OR

571

V2 PLANAR CIRCUIT EQUATION AND ITS PRACTICAL APPLICATION TO  
2:00 PLANAR-TYPE TRANSMISSION-LINE CIRCUIT

Hsu, Jui-Pang, T. Anada  
Kanagawa University, Yokohama-shi, Japan

574

V3 ASYMPTOTIC EVALUATION OF RESONANT FREQUENCIES  
2:20 FOR TWO COUPLED CIRCULAR MICROSTRIP DISK RESONATORS

T. M. Habashy, J. A. Kong  
Massachusetts Institute for Technology, Cambridge, MA

577

V4 MODAL ANALYSIS OF A LEAKY FEEDER CABLE MODELED BY A  
2:40 SHEATH HELIX WITH A CONDUCTING CORE

C. V. Valerio, R. Bansal  
University of Connecticut, Storrs, CN

580

## SESSION V

## FIELD THEORY

## INDEPENDENCE ROOM

Chairman: C. M. Krowne  
Naval Research Laboratory, Washington, DC

**1983 IEEE Microwave and Millimeter Wave  
Monolithic Circuits Symposium  
May 31  
HYNES AUDITORIUM MAIN HALL**

Tuesday Morning

Tuesday Afternoon, May 31, 1983

| I SIGNAL PROCESSING<br>Chairman C. Chao, Honeywell Corporate Technology Center, Bloomington, MN |                                                                                                                                                                                                                   | III MILLIMETER WAVE CIRCUITS<br>Chairman B.E. Spielman, NRL, Washington, DC |                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 am                                                                                         | <b>WELCOMING REMARKS</b><br>Steering Committee Chairman, H.J. Kuno<br>Hughes Aircraft Corp., Torrance, CA                                                                                                         | 1:15 pm                                                                     | <b>A TWO-STAGE MONOLITHIC BUFFER AMPLIFIER FOR 20 GHz SATELLITE COMMUNICATION</b><br>W.C. Peterson and A.K. Gupta<br>Rockwell International, Thousand Oaks, CA                                    |
| 8:45 am                                                                                         | <b>HIGH QUALITY X-BAND MONOLITHIC DIODE MIXER</b><br>A.W. Jacomb Hood and J.R. Smith<br>GEC Research Laboratories, Wembley, England                                                                               | 1:35 pm                                                                     | <b>A GaAs MONOLITHIC PHASE SHIFTER FOR 30 GHz APPLICATION</b><br>V. Sokolov, P. Bauhahn, J. Geddes, T. Contolatis, C. Chao<br>Honeywell Corporate Technology Center, Bloomington, MN              |
| 9:05 am                                                                                         | <b>WIDEBAND GaAs FOUR QUADRANT MULTIPLIER</b><br>C. Ryan, D. Hartman, J.M. Frary, and C.E. Weitzel<br>Motorola, Inc., Phoenix, AZ                                                                                 | 1:55 pm                                                                     | <b>MONOLITHIC FREQUENCY DOUBLERS</b><br>A. Chu, W.E. Courtney, L.J. Mahoney, R.A. Murphy, R.W. McClellan<br>Lincoln Laboratory, Lexington, MA                                                     |
| 9:25 am                                                                                         | <b>A GaAs HIGH-SPEED COUNTER USING CURRENT MODE LOGIC</b><br>K. Suyama, H. Suzuki, Y. Nemoto, S. Yamamura and M. Fukuta<br>Fujitsu Ltd., Nakahara-ku, Kawasaki, Japan                                             | 2:15 pm                                                                     | <b>94 GHz MONOLITHIC GaAs BALANCED MIXERS</b><br>C. Chao, A. Contolatis, S. Jamison, C. Butler<br>Honeywell Corporate Technology Center, Bloomington, MN                                          |
| 9:45 am                                                                                         | <b>BREAK</b>                                                                                                                                                                                                      | 2:35 pm                                                                     | <b>BREAK</b>                                                                                                                                                                                      |
| II DEVICE AND PROCESSING<br>Chairman R.A. Murphy, MIT Lincoln Laboratory, Lexington, MA         |                                                                                                                                                                                                                   | IV POWER AMPLIFIERS<br>Chairman R. Gilson, U.S. Army, Ft. Monmouth, NJ      |                                                                                                                                                                                                   |
| 10:10 am                                                                                        | <b>A GaAs/GaAs HETEROJUNCTION BALLISTIC BIPOLAR TRANSISTOR (BBT) FOR EHF AMPLIFIERS</b><br>E.J. Zhu, W.H. Ku, and C.E.C. Wood<br>Cornell University, Ithaca, NY                                                   | 3:00 pm                                                                     | <b>A NEW, SPECIFICALLY MONOLITHIC APPROACH TO MICROWAVE POWER AMPLIFIERS</b><br>D. Pavlidis, Y. Archambault, M. Efthimerou, D. Kaminsky, A. Bert, J. Magarshack<br>Thomson CSF/DCM, Orsay, France |
| 10:30 am                                                                                        | <b>PROFILE STUDIES OF ION-IMPLANTED MESFETS</b><br>J.M. Golio and R.J. Trew<br>North Carolina State University, Raleigh, NC                                                                                       | 3:20 pm                                                                     | <b>MONOLITHIC BROADBAND POWER AMPLIFIER AT X-BAND</b><br>A. Platzker, M.S. Durschlag, J. Vorhaus<br>Raytheon, Lexington, MA                                                                       |
| 10:50 am                                                                                        | <b>LOW-NOISE MESFETS FOR ION-IMPLANTED GaAs MMICS</b><br>A.K. Gupta, D.P. Siu, K.T. Ip, and W.C. Peterson<br>Rockwell International, Thousand Oaks, CA                                                            | 3:40 pm                                                                     | <b>WIDEBAND 3W AMPLIFIER EMPLOYING CLUSTER MATCHING</b><br>R.G. Freitag, J.E. Degenford, D.C. Boire, M.C. Driver, R.A. Wickstrom, C.D. Chang<br>Westinghouse, Baltimore, MD                       |
| 11:10 am                                                                                        | <b>TRANSIENT CAPLESS ANNEALING OF ION-IMPLANTED PBNLEC GaAs FOR MONOLITHIC MICROWAVE INTEGRATED CIRCUITS</b><br>R.C. Clarke, G.W. Eldridge, S.K. Wang and W.F. Valek<br>Westinghouse R & D Center, Pittsburgh, PA | 4:00 pm                                                                     | <b>2-20 GHz TRAVELING-WAVE POWER AMPLIFIER</b><br>Y. Ayasli, L.D. Reynolds, R. Mozzi, J.L. Vorhaus, L. Hanes<br>Raytheon, Lexington, MA                                                           |
| 11:30 am                                                                                        | <b>A NEW VIA HOLE STRUCTURE FOR POWER GaAs MESFETS and MMIC</b><br>Li Songfa, Liu Qingxiang<br>Hebei Semiconductor Research Institute, Shijiazhuang, China                                                        |                                                                             |                                                                                                                                                                                                   |

**Wednesday Morning Session: See page 29, Session A. (also, page iv)**