ADVANCE PROGRAM

IEEE

Ninth IEEE IVEC

IVEC 2008

April 22 – 24, 2008

Portola Plaza Hotel
Monterey, California, USA

Sponsored by the
IEEE Electron Devices Society

http://ivec2008.org

Acknowledgment

IVEC 2008 would like to acknowledge the support of the Army Research Office, Office of Naval Research, Air Force Office of Scientific Research, DARPA, and NASA. IVEC 2008 also acknowledges the corporate support of Communications & Power Industries, L-3 Communications, and SAIC.

WELCOME

On behalf of the Program Committee and the EDS Technical Committee on Vacuum Devices, I would like to welcome you to IVEC 2008. This is the 9th IEEE International Vacuum Electron Sources Conference. The conference is dedicated to the field of vacuum electronics. The meeting this year, sponsored by the IEEE Electron Devices Society, is being held at the Portola Plaza Hotel in the beautiful city of Monterey, California.

I am certain that you will find the program that the Program Committee has put together to be an exciting and rewarding one. The conference will open Tuesday morning, April 22, with a Plenary Session consisting of an excellent group of speakers covering subjects of great interest to the community. This will be followed by two and a half days of technical presentations, both oral and poster. During the conference, the special IVEC Award for Excellence and Student Paper Award will be granted. This year's conference banquet will be held at the Portola Plaza Hotel on Wednesday evening.

This conference has been arranged to enhance the presentation and discussion of useful information to manufacturers, device users, academics, and students. Traditionally, the conference attracts a diverse group of attendees, it is our hope that an environment will be created, which will allow for the broadening of our circles of interaction. During the meeting and social events, please take the time to reacquaint yourself with friends and colleagues, establish new relationships, and interact with the students.

The conference Web site (http://ivec2008.org) is a valuable source of information on the conference and will continue to serve as a clearinghouse for news and other IVEC-related information after the conference.

I would like to take this time to thank the Committee Members for their help and support, the presenters and contributors to the meeting for their participation, and, finally, Ralph Nadell of Palisades Convention Management for doing such an excellent job with the program coordination.

Baruch Levush
General Chairman
IVEC 2008

IVEC 2008 CONFERENCE COMMITTEE

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Naval Research Laboratory
Washington, DC

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Joan Yater
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Conference Coordinator:

Ralph Nadell
Palisades Convention Management
New York, NY

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Forschungszentrum Karlsruhe & University of Karlsruhe, Germany

Richard True
L-3 Communications EDD, San Carlos, CA

Jenq-Daw Wang
Chung-Shan Institute of Science and Technology, Taiwan

GENERAL INFORMATION

Registration
Advance Registration is not required, but it is strongly encouraged for quick pick-up of registration materials and for your own convenience. The registration fee includes admission to all technical sessions, a single ticket to the Wednesday evening reception/banquet/entertainment, all refreshment breaks, and a copy of the Book of Abstracts and CD. On-line registration is also available through the IVEC 2008 Web site (http://ivec2008.org) or complete the enclosed registration form (see centerfold), include your payment, and mail or fax to the address below. Checks should be made payable to IVEC in U.S. currency drawn on a U.S. bank. Only credit card payment may be faxed.

Palisades Convention Management
Attn: Ralph Nadell (IVEC 2008)
411 Lafayette Street, Suite 201
New York, NY 10003
fax (212) 460-5460

The deadline for receipt of Advance Registration is April 11, 2008. Requests for refunds must be made in writing and received no later than April 11, 2008. Confirmations will be mailed. However, confirmation of registration can also be made by calling 1-800-350-0111 or 212-460-9700.

	Before April 11	**After April 11**
IEEE Member	$525	$550
Non-Member	$600	$625
Retired/ Life Member	$250	$250
Full-Time Student	$ 75	$ 75

Registration will take place in the DeAnza Foyer of the Portola Plaza Hotel during the hours listed below.

Registration Hours

Monday, April 21	4:00 pm – 9:00 pm
Tuesday, April 22	7:00 am – 5:00 pm
Wednesday, April 23	7:30 am – 5:00 pm
Thursday, April 24	7:30 am – 1:30 pm

Hotel Accommodations
The meeting will be held at the Portola Plaza Hotel, located at Two Portola Plaza, Monterey, CA 93940; telephone 831/649-4511. The Portola Plaza Hotel is holding a block of rooms for IVEC attendees at the corporate rate of $184 single/double plus prevailing tax, currently 10.05%.

Room reservations at the Portola Plaza Hotel may be made by calling the Reservations Department at 831/649-4511 or calling the Central Reservations Office at 1-888-222-5851 and identifying yourself as an attendee at the International Vacuum Electronics Conference; or hotel reservations may be made directly through the IVEC Web site (http//ivec2008 .org). Government-rate rooms are also available to U.S. Government employees through the Conference Web site.

Airport/Hotel Transportation
The Monterey Peninsula Airport is served by major and regional carriers and offers more than 50 flights a day. There are connecting and direct flights to all major West Coast cities. The Peninsula is also convenient to all three San Francisco Bay airports. San Jose airport is just 1 hour away and both San Francisco and Oakland airports are less than 2 hours by car. Los Angeles is 5 hours away by car.

Climate
Moderate year-round temperatures and a typically dry California climate are two of Monterey's most attractive features. Daytime temperatures rarely exceed the 70s, and sweaters or light jackets are sufficient most evenings. The average temperature is 66°C.

Surrounding Attractions
Monterey, California, is also home to historic Fisherman's Wharf on Cannery Row, the world-famous Monterey Bay Aquarium, and Pebble Beach. Monterey is a seaside community providing a variety of recreational activities including shopping, golf, local wineries, art galleries, and museums.

Reception and Banquet
All conference attendees are invited to attend the Conference reception and banquet to be held on Wednesday evening, April 23. The reception will start in the De Anza foyer at 6:00 pm, dinner will be

served in the De Anza Ballroom at 7:00 pm. The evening will conclude with the presentation of the IVEC Award for Excellence in Vacuum Electronics and a program of professional entertainment provided by Eddie Slowikowski who will take us on a journey through an array of popular dance.

IVEC 2008 Award for Excellence in Vacuum Electronics

The IVEC Award for Excellence in Vacuum Electronics was established in 2002 to recognize outstanding contributions to the field. Anyone or any group of persons working in the field of vacuum electronics is eligible for this award, which will be presented each year during the IVEC conference. Anyone in the field may place a colleague in nomination. Selection of the winner will be made by a vote of the members of the Technical Committee. Members of the Technical Committee who are nominees may not vote. Only living persons are eligible for the award. The winner will receive a commemorative plaque and an award of $2000. If a group nomination is selected for the award they will each receive a plaque and share the $2000.

Messages

Messages for attendees will be posted in the Message Center, located adjacent to the IVEC registration desk. For incoming messages, please call the Portola Plaza Hotel at 831/649-4511 and ask to be transferred to the IVEC registration desk.

Conference Contact

Anyone requiring additional information should contact the Conference Coordinator, Ralph Nadell, c/o Palisades Convention Management, 411 Lafayette Street, Suite 201, New York, NY 10003, 212/460-8090 ext. 203, or Rnadell@pcm411.com. For registration verification, call 1-800-350-0111 or 212/460-9700.

Web site

For additional information on Monterey and IVEC, individuals are encouraged to visit our Web site at http://ivec2008.org

PLENARY SESSION

Tuesday, April 22, 2008 / 8:15 am – 12:00 pm / De Anza

Welcome / Introductory Remarks **(8:15)**

PL.1: Advances in Modeling of Vacuum-Electronic Devices **(8:30)**

T. M. Antonsen
IREAP, University of Maryland, College Park, MD

PL.2: Cathode Technology Overview: Current Status and Future Directions **(9:00)**

M. Green
Varian Medical Systems, Mountain View, CA

PL.3: Vacuum Electronics and the World Above 100 GHz **(9:30)**

M. Rosker
DARPA/MTO, Arlington, VA

BREAK **(10:00)**

PL.4: State of the Art in Medical and Industrial Linear-Accelerator Systems **(10:30)**

D. Whittum, M. Trail, G. Meddaugh
Varian Medical Systems, Palo Alto, CA

PL.5: Vacuum Electronics for Communications and Broadcasting **(11:00)**

M. Cascone
Communications & Power Industries, Palo Alto, CA

PL.6: TWTAs for Satellite Communications: Past, Present, and Future **(11:30)**

K. P. Mallon
L-3 Electron Technologies, Inc., Torrance, CA

LUNCH **(12:00–1:30)**

Session 1

THz DEVICES AND MICROFABRICATION I

Tuesday, April 22, 2008 / 1:30 – 3:10 pm / De Anza I

Chair: C. L. Kory
Calabazas Creek Research/Teraphysics, Cleveland, OH

1.1: Session Keynote: A Compact High-Power 0.65-THz Source (1:30)

J. Tucek, D. Gallagher, K. Kreischer
Northrop Grumman, Rolling Meadows, IL

R. Mihailovich
Teledyne Scientific & Imaging, Thousand Oaks, CA

1.2: A Selectively Metallized, Microfabricated W-band Meander-Line TWT Circuit (1:50)

S. Sengele, H. Jiang, J. H. Booske, D. van der Weide
University of Wisconsin-Madison, Madison, WI

C. Kory, L. Ives
Calabazas Creek Research, Inc., San Mateo, CA

1.3: Attenuator for W-Band Folded Waveguide TWT (2:10)

J. Cai, J. Feng, Y. Hu, X. Wu, B. Qu, S. Ma, J. Zhang, T. Chen
Vacuum Electronics National Laboratory, Beijing, ROC

1.4: Micromachined Step-Tapered High-Frequency Waveguide Inserts and Antennas (2:30)

J. Booske, A. M. Marconnet, M. He, S. M. Sengele, S-J. Ho, H. Jiang, N. Ferrier, D. W. van der Weide
University of Wisconsin-Madison, Madison, WI

1.5: High-Voltage MEMS Platform for Fully Integrated On-Chip Vacuum-Electronic Devices (2:50)

B. Stoner, C. A. Bower, K. H. Gilchrist, J. R. Piascik
RTI International, Research Triangle Park, NC

S. Natarajan, C. B. Parker, J. T. Glass
Duke University, Durham, NC

BREAK (3:10–3:30)

GYRO-DEVICES I

Tuesday, April 22, 2008 / 1:30 – 3:10 pm / De Anza II

Chair: G. Nusinovich
University of Maryland, College Park, MD

2.1: Session Keynote: Development in Russia of High-Power Gyrotrons for Plasma Fusion Installations (1:30)

G. G. Denisov, A. G. Litvak, V. E. Myasnikov, E. M. Tai, V. E. Zapevalov, M. V. Agapova, A. V. Chirkov, A. N. Kuftin, S. A. Malygin, V. I. Malygin, V. O. Nicniporenko, A. B. Pavel'ev, V. V. Parshin, E. A. Soluyanova, V. I. Ilin, V. N. Ilin, A. L. Vikharev, S. V. Usachev, V. G. Usov
Russian Academy of Sciences, Nizhny Novgorod, Russia

2.2: 170-GHz 2-MW Coaxial Cavity Gyrotron: Experimental Investigations on the Pre-Prototype Tube (1:50)

T. Rzesnicki, B. Piosczyk, J. Jin, S. Kern
Forschungszentrum Karlsruhe, Eggenstein-Leopoldsh, Baden-Wurtenber, Germany

J. Flamm, O. Prinz, M. Thumm
Universität Karlsruhe, Institut für Höchstfrequenztechnik und Elektronik, Karlsruhe, Germany

2.3: Development and Demonstration of a Multi-Megawatt 95-GHz Gyrotron Oscillator (2:10)

M. Blank, P. Borchard, P. Cahalan, S. Cauffman, K. Felch, H. Jory
CPI, Palo Alto, CA

2.4: Development of a Coaxial 95-GHz Multi-Megawatt Gyrotron Oscillator (2:30)

S. Cauffman, M. Blank, P. Borchard, P. Cahalan, K. Felch, H. Jory
CPI, Palo Alto, CA

2.5: Development of a High-Power Pulse THz Gyrotron (2:50)

M. Read, J. Neilson, R. L. Ives
Calabazas Creek Research, Inc., San Mateo, CA

G. Nusinovich
University of Maryland, College Park, MD

P. Borchard
Consultant, San Francisco, CA

BREAK (3:10–3:30)

THERMIONIC CATHODES

Tuesday, April 22, 2008 / 1:30 – 3:10 pm / De Anza III

Chair: J. Yater
Naval Research Laboratory, Washington, DC

3.1: Session Keynote: Modern State of Cathode Development and Emission Properties Investigations in Ukraine (1:30)

A. Taran, D. Voronovich , S. Plankovskyy
National Aerospace University, Kharkiv, Ukraine

V. Paderno, V. Filipov
National Academy of Science of Ukraine, Kyiv, Ukraine

3.2: Studies on Tungsten-Rhenium Mixed-Matrix Cathodes (1:50)

R. S. Raju
CEERI, Pilani, India

3.3: Characterization of Osmium-Ruthenium Coatings for Porous Tungsten Dispenser Cathodes (2:10)

J. Balk, W-C. Li
University of Kentucky, Lexington, KY

S. Roberts
Semicon Associates, Lexington, KY

3.4: Gas Poisoning of 612-M and 311-XM Cathodes (2:30)

J. W. Kwan, F. Bieniosek, E. Henestroza, M. Leitner, W. Waldron
Lawrence Berkeley National Laboratory, Berkeley, CA

R. Mitchell, R. Scarpetti, B. Prichard
Los Alamos National Laboratory, Los Alamos, NM

G. Miram
Atherton, CA

G. Westenskow
Lawrence Livermore National Laboratory, Livermore, CA

3.5: Measured Performance of Magnetron Injection Guns for Gyrotrons (2:50)

R. L. Ives, D. Marsden, G. Collins, G. Miram
Calabazas Creek Research, Inc., San Mateo, CA

K. Gunther, M. Curtis
HeatWave Laboratories, Inc., San Mateo, CA

P. Borchard
San Mateo, CA

BREAK (3:10–3:30)

Session 4

THz DEVICES AND MICROFABRICATION II

Tuesday, April 22, 2008 / 3:30 – 5:30 pm / De Anza I

Chair: J. Booske
University of Wisconsin, Madison, WI

4.1: Effect of Random Circuit Fabrication Errors on Small Signal Gain and Phase in Traveling-Wave Tubes (3:30)

P. Pengvanich, Y. Y. Lau, R. M. Gilgenbach
University of Michigan, Ann Arbor, MI

D. Chernin
SAIC, McLean, VA

J. W. Luginsland
NumerEx, Ithaca, NY

4.2: High-Heat-Flux Thermal Management of Microfabricated Upper MM-Wave Vacuum Electronic Devices (3:50)

J. P. Calame
Naval Research Laboratory, Washington, DC

4.3: Slow-Wave Structures for 220-GHz High-Power and Wideband Sheet-Beam TWT Amplifiers (4:10)

Y. Goren, P. Lally
Teledyne MEC, Rancho Cordova, CA

L. Barnett, Y-M. Shin, N. C. Luhmann, Jr.
University of California at Davis, Davis, CA

A. Higgens, M. Field
Teledyne Scientific, Thousand Oaks, CA

G. Scheitrum
SLAC, Menlo Park, CA

4.4: Beam Transmission in Microfabricated Terahertz Device with Asymmetric Magnet (4:30)

G-S. Park, J. K. So, M. A. Sattorov, A. Srivastava, K. H. Jang, J. H. Won,
Seoul National Univeristy, Seoul, Korea

C. W. Baik, S. C. Jun
Samsung Advanced Institute of Technology, Yongin, Korea

J. H. Kim and S. S. Chang
Pohang Accelerator Laboratory, Pohang, Korea

4.5: Phase-Shifted Double-Vane Circuit (Barnett-Shin TWT) for Ultra-Wideband Millimeter- and Submillimeter-Wave Generation (4:50)

Y-M. Shin, L. R. Barnett
Mountain Technology, Normandy, TN

4.6: MEMS-Based Slow-Wave Sheet-Beam Amplifier (5:10)

D. Holstein
Performance Microwave, Sparta, NJ

M. Dokmeci, C-L. Chen
Northeastern University, Boston, MA

M. Tracy
CPII, Beverly, MA

GYRO-DEVICES II

Tuesday, April 22, 2008 / 3:30 – 5:10 pm / De Anza II

Chair: G. Denisov
Russian Academy of Sciences, Nizhny Novgorod, Russia

5.1: Session Keynote: Numerical Models of Mode Interaction in Gyrotrons: Capabilities and Limitations (3:30)

A. Vlasov, I. A. Chernyavskiy
SAIC, College Park, MD

T. M. Antonsen, Jr., G. S. Nusinovich
University of Maryland, College Park, MD

J. A. McDonald, B. Levush
Naval Research Laboratory, Washington DC

5.2: Effect of the Parasitic Mode on the Stability of High-Efficiency Oscillations in the 1-MW ITER Gyrotron (3:50)

O. V. Sinitsyn, G. S. Nusinovich
University of Maryland, College Park, MD

A. N. Vlasov
SAIC, McLean, VA

5.3: Mode Self-Synchronization in Diffraction Radiation Oscillator (4:10)

K. A. Lukin, E. M. Khutoryan, A. I. Tsvyk
Institute for Radiophysics and Electronics, Kharkov, Ukraine

5.4: Advanced Quasi-Optical Mode Converter for a Multi-Frequency Gyrotron (4:30)

O. Prinz, J. Flamm, M. Thumm
Universitat Karlsruhe, Karlsruhe, Germany

G. Gantenbein
Forschungszentrum Karlsruhe, Eggenstein-Leopoldshafen, Germany

5.5: Study of Aftercavity Interaction in a High-Efficiency 1.5-MW 110-GHz Gyrotron (4:50)

Y. Hidaka, E. M. Choi, M. A. Shapiro, J. R. Sirigiri, R.J. Temkin
MIT Plasma Science and Fusion Center, Cambridge, MA

SCANDATE CATHODES

Tuesday, April 22, 2008 / 3:30 – 5:10 pm / De Anza III

Chair: K. Jensen
Naval Research Laboratory, Washington, DC

6.1: Session Keynote: Emission Declining Behavior of Scandia-Doped Dispenser Cathodes (3:30)

Y. Wang, J. Wang, Y. Wang, L. Li, W. Liu
Beijing University of Technology, Beijing, ROC

6.2: A Study of Pressed Scandate Dispenser Cathode (3:50)

J. Wang, W. Liu Y. Wang, L. Li, M. Zhou
Beijing University of Technology, Beijing, ROC

6.3: Session Keynote: An Ab-Initio Molecular Dynamics Model of the Scandate Cathode (4:10)

V. Vlahos, D. Morgan, J. H. Booske
University of Wisconsin-Madison, Madison, WI

L. Turek, M. Kirshner, R. Kowalczyk, C. Wilsen
L-3 Communications Electron Devices, San Carlos, CA

6.4: High-Current-Density Scandate Cathodes (4:30)

R. L. Ives
Calabazas Creek Research, Inc., San Mateo, CA

L. Falce, J. Stiglich
Independent Consultant

K. Gunther, M. Curtis
HeatWave Laboratories, Inc., Watsonville, CA

S. Schwartzkopf
Ron Witherspoon, Inc., Castroville, CA

6.5: In-Situ Emission Microscopy of Scandium/Scandium Oxide and Barium/Barium Oxide Thin Films on Tungsten (4:50)

M. E. Kordesch, J. M. Vaughn
Ohio University, Athens, OH

TWTS I

Wednesday, April 23, 2008 / 8:30 – 10:10 am / De Anza I

Chair: W. Menninger
L-3 Communications ETI, Torrance, CA

7.1: Session Keynote: Operation of a Low-Voltage High-Transconductance Field-Emitter-Array TWT (8:30)

D. R. Whaley, R. Duggal, C. M. Armstrong
L-3 Communications, San Carlos, CA

C. L. Bellew, C. E. Holland, C. A. Spindt
SRI International, Menlo Park, CA

7.2: Session Keynote: High-Power C- and X-Band Radar Helix TWTs (8:50)

A. Laurent, D. Chesnel, P. Thouvenin
Thales Electron Devices, Velizy, France

7.3: Recent Results on a 200-W Ku-band Power Booster TWT (9:10)

J. Welter, C. Marotta, R. True, T. Hargreaves, A. Donald, T. Schoemehl
L-3 Communications, San Carlos, CA

7.4: L-Band Ring-Bar TWT Development (9:30)

M. L. Barsanti, C. L. Wheeland, and M. A. Boyle
L-3 Communications Electron Devices Division, San Carlos, CA

7.5: Progress on Fabrication and Testing of the Omniguide Traveling-Wave-Tube Structures (9:50)

E. Smirnova, B. Carlsten, L. Earley,
Los Alamos National Laboratory, Los Alamos, NM

BREAK (10:10–10:30)

GYRO-DEVICES III

Wednesday, April 23, 2008 / 8:30 – 10:10 am / De Anza II

Chair: M. Blank
Communications and Power Industries, Palo Alto, CA

8.1: Session Keynote: New Elements for Controlled Gyrotron Systems (8:30)

V. Erckmann
IPP, Greifswald, Germany

J. Hirshfield
Yale University, New Haven, CT

W. Kasparek
Stuttgart University, Stuttgard, Germany

M. Petelin, M. Salin, D. Shchegolkov, N. Zaitsev
Institute of Applied Physics, Nizhny Novgorod, Russia

8.2: Operation of a Wideband 140-GHz 1-kW Confocal Gyro-Traveling-Wave Amplifier (8:50)

C. D. Joye, M. A. Shapiro, J. R. Sirigiri, R. J. Temkin, A. C. Torrezan
MIT Plasma Science and Fusion Center, Cambridge, MA

8.3: Broadband Gyro-TWA with Thermionic CUSP Gun: Simulations and Comparison with Experiment (9:10)

C. G. Whyte, D. H. Rowlands, C. W. Robertson, A. R. Young, A. D. R. Phelps, W. He, A. W. Cross, K. Ronald
University of Strathclyde, Glasgow, Scotland

8.4: Research Progress of the Harmonic Multiplying Gyrotron Traveling-Wave Amplifier at Ka-Band in IECAS (9:30)

J. Luo, G. Yuan, Y. Zhang, W. Guo, M. Zhu, C. Jiao, Y. Li, T. Zhang, H. Sun, Y. Luan, C. Zhang, J. Cui
Chinese Academy of Science, Beijing, ROC

8.5: A W-Band Gyro-BWO Using a Helically Corrugated Waveguide (9:50)

C. Donaldson, W. He, A. D. R. Phelps, A. W. Cross, K. Ronald, A. R. Young, C. G. Whyte, F. Li
University of Strathclyde, Glasgow, Scotland

BREAK (10:10–10:30)

POSTER I

Wednesday, April 23, 2008 / 8:30 – 11:30 am / De Anza III

P1.1: An Analytical Formula of the Wave Group Velocity in the Coupled-Cavity Chain

A. V. Konnov
FSUE R&P Corp., Moscow, Russia

P1.2: Estimation of Conductivity Losses in a Helix Slow-Wave Structure Using Eigen-Mode Solutions

P. R. Ramana Rao, S. K. Datta
Microwave Tube Research & Development Centre, Bangalore, India

P1.3: Optimization of CCTWT BWI Efficiency Using Annealing Algorithm

J. Kou, T. Yan, S. Zhao, Q. Li
Beijing Vacuum Electronics Research Institute, Beijing, ROC

P1.4: Non-Stationary Nonlinear Modeling of a Coupled-Cavity TWT

V. N. Titov, A. V. Yakovlev, N. M. Ryskin
Saratov State University, Saratov, Russia

P1.5: Experiment on TWT 3IM Suppression Using Harmonic and IM3 Injection

L. Li, J. Feng, S. Cai, X. Liang
Vacuum Electronics National Laboratory, Beijing, ROC

P1.6: Phase Velocity and Interaction Impedance Measurements on Slow-Wave Structures for Power Traveling-Wave Tubes

D. T. Lopes, C. Motta
University of Sao Paulo, Sao Paulo, Brazil

P1.7: Analysis of Serpentine Folded-Waveguide Slow-Wave Structures by Elliptical Conformal Transformation

M. Sumathy, S. K. Datta
Microwave Tube Reaearch & Development Centre, Bangalore, India

K. J. Vinoy
Indian Institute of Science, Bangalore, India

P1.8: Local Interaction Impedance of Periodic Slow-Wave Systems

S. Mukhin, D. Y. Nikonov, V. A. Solntsev
Moscow State Institute of Electronics & Mathematics, Moscow, Russia

P1.9: Calculation of High-Frequency Characteristics for Ridge-Loaded Helical Slow-Wave Structure

Z-J. Zhu, Z-X. Luo
University of Electronic Science and Technology of China, Chengdu, ROC

P1.10: SUNRAY-1D Code for Accurate and Fast Large Signal Analysis of a Helix TWT

A. Bera, V. Srivastava
Central Electronics Engineering Research Institute, Pilani, India

P1.11: TWT Harmonic Injection Calculation and Experiment

S. Cai, J. Feng
Vacuum Electronics National Laboratory, Beijing, ROC

P1.12: The Design of Ka-band High-Power Folded Waveguide Traveling-Wave Tube

H-R. Gong, Y-B. Gong, Z-G. Lu, W-X. Wang, J-J. Feng
Vacuum Electronics National Laboratory, Chengdu, Sichuan, ROC

P1.13: Phase Velocity and Interaction Impedance on Slow-Wave Structures for Power Traveling-Wave Tubes

D. T. Lopes, C. Motta
University of Sao Paulo, Sao Paulo, Brazil

P1.14: Amplification and Frequency Locking in a TWT Using Cyclotron Depression of Positive Feedback

M. Fuks, E. Schamiloglu
University of New Mexico, Albuquerque, NM

P1.15: Optimization of the TWT Attenuators' Parameters

Y. Pchelnikov
SloWaveS, Inc., Cary, NC

P1.16: The X-Range Powerful TWT

D. A. Komarov, A. V. Phetisova, S. P. Morev, Y. A. Miroshnikov, A. V. Gudovich, Y. N. Strukov
Federal State Unitary Enterprise, Moscow, Russia

P1.17: Semi-Metallic Rod Structure for Controlling the Phase Velocity Dispersion in Helix TWT

R. Martorana, A. Nicosia
Galileo Avionica, Palermo, Italy

P1.18: Helix Equivalent Parameters in the Anisotropically Conducting Cylinders

Y. Pchelnikov
SloWaveS, Inc., Cary, NC

P1.19: A 600-kW 425-MHz Hollow-Beam Klystron for Commercial Proton Linacs

P. Ferguson, D. Whittick
MDS Co., Oakland, CA

S. Humphries
Field Precision, Inc., Albuquerque, NM

M. Korringa, K. Lillis, A. Shrager
ETM Electromatic, Inc., Newark, CA

P1.20: Suppression of Chaotic Oscillations in Klystron Active Oscillator

B. Dmitriev, Y. D. Zharkov, V. N. Skorokhodov
Saratov State University, Saratov, Russia

P1.21: Aperture Coupling of Coaxial Cavity to Rectangular Waveguide

Y. Dong, J. Yang
Inner Mongolia University of Science & Technology, BaoTou, ROC

L. Xiao, Y. Ding
Chinese Academy of Sciences, Beijing, China

P1.22: Development of a 10–201.25-MHz Hollow-Beam Klystron

P. Ferguson, D. Whittick
MDS Co., Oakland, CA

S. Humphries
Field Precision LLC, Albuquerque, NM

P1.23: Two-Stage Relativistic Klystron-Oscillator

A. A. Kurayev, I. V. Lushchytskaya, A. K. Sinitsyn
Byelorussian State University of Informatics and Radioelectronics, Minsk, Belarus

P1.24: Resonance Frequency and Ohmic Q Factor in Klystron Cavities

J. J. Barroso, J. P. Leite Neto
National Institute for Space Research, Sao Jose de Campos, Brazil

P1.25: Rapid Calculation of the Properties of Klystron Cavities

R. G. Carter, C. Lingwood
Lancaster University, Lancaster, U.K.

P1.26: A General Regularity of Behavior for the Klystron Electronic Efficiency Depending on Space-Charge Parameter of Electron Beam

A. Miroshnichenko, V. A. Tzarev
Saratov State Technical University, Saratov, Russia

P1.27: The Design and Simulation of MIG for Gyrotron Using Boundary Element Method

Z. Li, J. Feng, E. Wang, B. Liu, M. Zhu
Vacuum Electronics National Laboratory, Beijing, ROC

P1.28: Transport of an Electron Beam in the Periodical Non-Sinusoidal Magnetic Fields

S. Morev, A. V. Arkhipov, A. N Darmaev, D. A Komarov, Y. A. Miroshnikov, A. V. Fetisova
Federal State Unitary Enterprise, Moscow, Russia

P1.29: 3-D Simulation of Wiggler Field Focusing Sheet Electron Beam

Z. Duan, T. Wang, Y. Gong, Z. Wang, X. Guo, Y. Wei, W. Wang
University of Electronic Science & Technology of China, Chengdu, Sichuan, ROC

P1.30: Design of Electron Gun for X-Band Linear Accelerator

T. Tiwari, R. Krishnan
SAMEER, Mumbai, India

P1.31: Electron Gun with a Control Electrode for Millimeter-Wave Devices

E. V. Patrusheva, A. I. Toreev, Y. G. Gamayunov
Saratov State University, Saratov, Russia

P1.32: Slow-Wave Structures with Composite Defect Electromagnetic Band-Gap Structure

N. Bai, X. Sun
Southeast University, Nanjing, ROC

P1.33: Bandgap Extension of Disordered One-Dimensional Metallic-Dielectric Photonic Crystals

L. Qi, Z. Yang, G. Xi, F. Lan, Z. Shi, Z. Liang
University of Electronic Science & Technology of China, Chengdu, ROC

P1.34: Study on Relativistic Cherenkov Source with Metallic Photonic Band-Gap Structure

X. Gao, Z. Yang, L. Qi , F. Lan, Z. Shi, Z. Liang
University of Electronic Science & Technology of China, Chengdu, ROC

P1.35: Using COMSOL Multiphysics Software to Model Anisotropic Dielectric and Metamaterial Effects in Folded-Waveguide Traveling-Wave-Tube Slow-Wave Circuits

J. Wilson
NASA Glenn Research Center, Cleveland, OH

D. P. Starinshak
University of Michigan, Ann Arbor, MI

N. D. Smith
Cleveland State University, Cleveland, OH

P1.36: Generation of Millimeter and Sub-millimeter Radiation in a Compact Oscillator Utilizing the Two-Stream Instability

K. Bishofberger
Los Alamos National Laboratory, Los Alamos, NM

P1.37: Emission Studies on Reservoir Cathodes

B. Vancil
E-Beam, Inc., Beaverton, OR

P1.38: Development of a Power Combined V-Band Millimeter-Wave Power Module (MMPM)

H. Song
University of Colorado, Colorado Springs, CO

F. Francisco, D. Steidle
Triton Electron Technology Division, Easton, PA

LUNCH **(11:30–1:30)**

SPACE TWTS

Wednesday April 23, 2008 / 10:30 am – 12:30 pm / De Anza I

Chair: P. Thouvenin
Thales Electron Devices, Velizy Villacoublay, France

9.1: High-Efficiency 150–200-W L-band Traveling-Wave Tube for GPS Satellites (10:30)

W. L. Menninger, J. R. Feicht, W. L. McGeary
L-3 Communications Electron Technologies, Inc., Torrance, CA

9.2: TWTA versus SSPA: Analysis Update of the Boeing Fleet On-Orbit Reliability Data (10:50)

E. F. Nicol, B. J. Mangus, J. R. Grebliunas
The Boeing Company, Space & Intelligence Systems, Los Angeles, CA

9.3: Design and Development of Ku-Band 140-W Space TWT (11:10)

A. R. Choudhury, R. K. Sharma, A. Bera, S. M. Sharma, V. Srivastava
Central Electronics Engineering Research Institute, Rajasthan, India

P. V. Bhaskar, R. R. Singh, K. Prasad, S. Ghosh, R. R. Patnaik,
Bharat Electronics Limitted, Bangalore, India

9.4: Reliability of Dual TWTAs: Spacecraft System Considerations (11:30)

T. K. Phelps
L-3 Communications Electron Technologies, Inc., Torrance, CA

9.5: End-to-End Performance Evaluation Methodology for TWTA-Based Satellite Flexible Payloads (11:50)

M. Aloisio, P. Angeletti, E. Colzi, S. D'Addio, R. Oliva Balague, E. Casini, F. Coromina
European Space Agency ESA/ESTEC, Noordwijk, The Netherlands

9.6: Space Traveling-Wave-Tube Amplifiers with On-Orbit Adjustable Saturated Output Power (12:10)

T. K. Phelps, J. D. McDowell, W. L. Menninger
L-3 Communications Electron Technologies, Inc., Torrance, CA

BREAK (10:10–10:30)

SHEET BEAMS

Wednesday, April 23, 2008 / 10:30 am – 12:10 pm / De Anza II

Chair: J. Calame
Naval Research Laboratory, Washington, DC

10.1: High-Perveance W-Band Sheet-Beam Electron Gun Design (10:30)

K. T. Nguyen, E. L. Wright
Beam-Wave Research Inc., Bethesda, MD

J. Pasour, B. Levush
Naval Research Laboratory, Washington, DC

J. Petillo
SAIC, Billerica, MA

10.2: Linear TWT Analysis for Sheet-Beam Interaction(10:50)

S. J. Cooke, B. Levush
Naval Research Laboratory, Washington DC

G. Nusinovich
University of Maryland, College Park, MD

10.3: Development of High-Current-Density Sheet-Beam Electron Gun for Terahertz Devices (11:10)

G. S. Park, A. Srivastava, J. K. So,
Seoul National Univeristy, Seoul, Korea

R.S. Raju
Central Electronics Engineering Research Institute, Pilani, India.

Y. Wang, J. Wang
Beijing University of Technology, Beijing, China

10.4: Development of High-Current Sheet Beams for THz Sources (11:30)

Y. Wang, J. Wang, L. Li, Y. Wang, W. Liu
Beijing University of Technology, Beijing, ROC

A. Srivastava. J. So, G-S. Park
Seoul National University, Korea

10.5: Design of Electron Guns and Focusing Structures for THz Linear-Beam Tubes (11:50)

M. E. Read, C. Kory, R. L. Ives
Calabazas Creek Research, Inc. San Mateo, CA

J. Booske
University of Wisconsin-Madison, Madison, WI

LUNCH (12:10–1:30)

MM-WAVE TWTs

Wednesday, April 23, 2008 / 1:30 – 3:10 pm / De Anza I

Chair: Y. Ding
Chinese Academy of Sciences, Beijing, ROC

11.1: Session Keynote: Development of High-Power Ka/Q Dual-Band and Communications/Radar Dual-Function Helix TWT (1:30)

C. K. Chong, D. Layman, R. H. Le Borgne, M. Olivieri, M. L. Ramay, R. J. Stolz, X. Zhai
L-3 Communications Electron Technologies, Inc., Torrance, CA

11.2: Development of 500-W Ka-Band Helix TWT and 200-W/Q-Band Helix TWT for Communications Applications (1:50)

C. K. Chong, R. C. Dawson, J. W. Forster, R. H. Le Borgne, M. L. Ramay, R. J. Stolz, R. N. Tamashiro
L-3 Communications Electron Technologies, Inc., Torrance, CA

11.3: Design of Overmoded Interaction Circuit for 1-kW 95-GHz TWT (2:10)

C. Kory, R. L. Ives, M. Read
Calabazas Creek Research, Inc., San Mateo, CA

J. Booske
University of Wisconsin-Madison, Madison, WI

Philipp Borchard
Consultant, San Francisco, CA

11.4: K-Band TWTA for the NASA Lunar Reconnaissance Orbiter (2:30)

D. A. Force, R. N. Simons, T. T. Peterson
NASA Glenn Research Center, Cleveland, OH

A. Rodriguez-Arroy, J. Visalsawat
NASA Goddard Space Flight Center, Greenbelt, MD

P. C. Spitsen
L-3 Communications Electron Technologies, Inc., Torrance, CA

11.5: Development of a High-Average-Power W-Band TWT (2:50)

A. J. Theiss, C. J. Meadows, K. L. Montgomery, J. M. Martin
L-3 Communications Electron Devices Division, San Carlos, CA

BREAK (3:10–3:30)

KLYSTRONS

Wednesday, April 23, 2008 / 1:30 – 3:10 pm / De Anza II

Chair: D. Abe
Naval Research Laboratory, Washington, DC

12.1: High-Power CW Klystron for Fusion Experiments (1:30)

A. Beunas, R. Marchesin, J. C. Bellemere
Thales Electron Devices, Velizy, France

F. Kazarian
EURATOM-CEA, France

12.2: A High-Duty Ka-Band Extended Interaction Klystron (1:50)

K. R. Chu, W. Y. Chiang
National Tsing Hua University, Hsinchu, Taiwan

12.3: Status of the 805-MHz Pulsed Klystrons for the Spallation Neutron Source (2:10)

S. J. Lenci, E. L. Eisen
CPI, Inc., Palo Alto, CA

M. McCarthy, K. Rust
Oak Ridge National Laboratory, Oak Ridge, TN

12.4: A 500-kW C-Band Broadband Klystron (2:30)

L. Xiu, Z. Yi-lin, W. Yu-hong, T. Yong-jian, W. Qing, W. Jie, Z. Xiang-hua, D. Yue, L. Fang
Beijing Vacuum Electronics Research Institute, Beijing, ROC

12.5: Development of an S-Band 50-kW Average Power Klystron (2:50)

Z-C. Zhang, Y. Ding, J-J. Fan, Y-F. Guo, Y-W. Zhang, Y, B. Shen, C-J. Fu, X-D. Fan
Chinese Academy of Sciences, Beijing, ROC

BREAK (3:10–3:30)

POSTER II

Wednesday, April 23, 2008 / 1:30 – 4:30 pm / De Anza III

P2.1: Effect of Electron Energy Distribution Function on the Global Model for High-Power Microwave Breakdown at High Pressures

S-K. Nam, J. P. Verboncoeur
University of California at Berkeley, Berkeley, CA

P2.2: Two-Dimensional Axisymmetric Child-Langmuir Scaling Law

B. Ragan-Kelley, J. P. Verboncoeur
University of California at Berkeley, Berkeley, CA

P2.3: A Higher Dimensional Theory of Electrical Contact Resistance

Y-Y. Lau, W. Tang
University of Michigan, Ann Arbor, MI

P2.4: Study on Virtual Cathode Oscillations by Using Finite-Difference Time-Domain Particle-in-Cell Codes

M-C. Lin, P-C. Chang
Fu Jen University, Taipei, Taiwan, ROC

P2.5: Output Characteristics of a Circular Horn Antenna by Employing Half- and Quarter-Symmetries in HFSS

M-C. Lin, Y. Wan
Fu Jen University, Taipei, Taiwan, ROC

P2.6: Development and Application of Particle Emission Algorithms from Cut-Cell Boundaries in the VORPAL EM-FDTD-PIC Simulation Tool

D. Smithe, P. Stoltz, J. Loverich, C. Nieter
Tech-X Corp., Boulder, CO

P2.7; Treatment of Near-Axis Particles and Fields in Cylindrical Coordinates

R. Jackson
Calabazas Creek Research, Inc., Greensboro, NC

J. P. Verboncoeur
University of California, Berkeley, Berkeley, CA

P2.8: Magic Linux Cluster Performance

A. Woods, D. Rhoades, L. Cavey, R. Hall, L. D. Ludeking
ATK Mission Research and Technical Services, Newington, VA

P2.9: Low-Noise Static Charging with Magic

A. Woods, L. D. Ludeking
ATK Mission Research and Technical Services, Newington, VA

P2.10: Simulation of Resonant Meander- Line Loaded Helical Slow-Wave Structure for a TWT

A.K. Agrawal, S. Raina, S. Kamath, L. Kumar
Microwave Tube R&D Centre, Bangalore, India

R. Kumar
Defence Institute of Advanced Technology, Pune, India

P2.11: Hybrid Genetic Algorithm for Optimization Design of Traveling-Wave Tubes

Y. Hu, Z-H. Yang, J-Q. Li, B. Li, T. Huang, X-L. Jin, X-F. Zhu, Q. Hu, L. Xu, J-J. Ma, W-F. Peng, L. Liao, L. Xiao, G-X. He
University of Electronic Science and Technology of China, Chengdu, ROC

P2.12: Recent Advances of Microwave Tube Simulator Suite

B. Li, Z-H. Yang, J-Q. Li, X-F. Zhu, T. Huang, X-L. Jin, Q. Hu, Y-L. Hu, L. Xu, J-J. Ma, W-F. Peng, L. Liao, L. Xiao, G-X. He
University of Electronic Science and Technology of China, Chengdu, ROC

P2.13: The Solution for Three-Dimensional EM Eigenvalue Problems with Vectorial Boundary Element Method

H. Zhengwei, W. Young
Graduate University of Chinese Academy of Science, Beijing, ROC

P2.14: The Experimental Verification of Electron Optics Simulator

T. Huang, Q. Hu, Z-H. Yang, B. Li, J-Q. Li, X-L. Jin, X-F. Zhu, Y-L. Hu, L. Xu, J-J. Ma, W-F. Peng, L. Liao, L. Xiao, G-X. He
University of Electronic Science and Technology of China, Chengdu, ROC

P2.15: Design of MIG for 42-GHz 200-kW Gyrotron

U. Singh, A. Bera, R. R. Rao, A. K. Sinha
Central Electronics Engineering Research Institute, Pilani, India

P2.16: The Simulation of an High-Power 390-GHz Large-Orbit Harmonic Gyrotron

F. Li, W. He, C. R. Donaldson, A. D. R. Phelps, A. W. Cross, K. Ronald, C. G. Whyte
University of Strathclyde, Glasgow, Scotland

P2.17: Influence of Trapped Backscattered Electrons on Parasitic Oscillations in Gyrotrons

A. Singh
University of Maryland, College Park, MD

W. B. Herrmannsfeldt
Stanford University, Stanford, CA

P2.18: Study on Suppression of Gyro-BWO by Distributed Wall Losses

C-Q. Jiao
North China Electric Power University, Beijing, ROC

P2.19: Amplification Simulation for Ka-band Second-Harmonic Gyro-TWT Using a Helical Corrugation Waveguide

L. Wenqiang
China Academy of Engineer Physics, Mianyang, ROC

P2.20: Broadband Windows for a GyroTWA

M. Duffield, G. Doherty, R. North, M. Butler, A. Griggs
E2V Technologies, Chelmsford, Essex, U.K.

P2.21: Design of a Ku-Band 110-kW TE(11) Mode Gyrotron Traveling-Wave-Tube Amplifier

Z-H. Geng, Q-Z. Xue, Y-N. Su, S-X. Xu, P-K. Liu
Chinese Academy of Sciences, Beijing, ROC

P2.22: Design of a Ka-Band TE(01) Mode Gyrotron Traveling-Wave Amplifier with High-Power Capabilities

Q-Z. Xue, P-K. Liu, W. Gu, G-J. Yuan, X-Y. Zong, C-H. Du, Y-L. Su, S-X. Xu, Z-H. Geng, J. Feng
Chinese Academy of Sciences, Beijing, ROC

P2.23: Simulation of 8-mm Two-Harmonic Gyroklystron

C-J. Lei
The Chinese People Armed Police Forces Academy, Langfang, Hebei, ROC

Yusheng
Chinese Academy of Sciences, ChengDu, ROC

P2.24: Design and Experimental Operation of a Ka-Band Second-Harmonic Gyroklystron Amplifier

S-X. Xu, P-K. Liu, S-C. Zhang, Y-N. Su, W. Gu, W-Z. Qin, F. Jin, Q-Z. Xue, Z-H. Geng
Institute of Electronics, Beijing, ROC

P2.25: Design of a High-Power W-Band Maser Based on a Two- Dimensional Periodic Structure

L. Fisher, I. V. Konoplev, A. W. Cross, A. D. R. Phelps
University of Strathclyde, Glasgow, U.K.

P2.26: The Single-Cavity Amplifier: An Optimized RF Power Source for Pulsed Superconducting Accelerators

J. Kinross-Wright, I. Roth, M. P. J. Gaudreau, M. A. Kempkes
Diversified Technologies, Inc., Bedford, MA

P2.27: Chaotic Behavior of Oscillations in Crossed-Field Electron Vacuum Devices

O.M. Nikitenko, M. V. Volovenko
Kharkiv National University of Radioelectronics, Kharkiv, Ukraine

P2.28: Dynamical Chaos and Magnetoresonant Gain in Hybrid Planar Ubitron

K. Ilyenko, V. A. Goryashko
Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

P2.29: Gyrotrons: Amplifiers, Frequency Multipliers, Oscillators

S.V. Kolosov, A. A. Kurayev
Byelarusian State University, Minsk, Belarus

P2.30: Coaxial Gyroklinotrons

A. A. Kurayev, A. K. Sinitsyn
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

P2.31: Energy Losses in Simulated Relativistic Michigan A6 Magnetron with Shaped Cathode

P. Mardahl
Air Force Research Laboratory, Kirtland AFB, NM

P2.32: Effect of Anode Plasma on Pulse Shortening in Magnetically Insulated Transmission Line Oscillator

S-H. Shin, H-C. Jung, S-H. Min, G-S. Park
Seoul National Univeristy, Seoul, Korea

D-H. Kim
Korea Electrotechnology Research Institute, Changwon, Korea

C.H. Kim, D.W. Yim
Agency for Defense Development, Daejeon, Korea

P2.33: Effects of Frequency Chirp on Magnetron Injection Locking

P. Pengvanich, Y-Y. Lau, R. M. Gilgenbach, E. Cruz
University of Michigan, Ann Arbor, MI

P2.34: Effects of Perturbing B-Field Orientation on Magnetic Priming of a Relativistic Magnetron

B. W. Hoff, R. M. Gilgenbach, N. M. Jordan, Y. Y. Lau, E. Cruz, D. French, M. R. Gomez, J. C. Zier
University of Michigan, Ann Arbor, MI

T. A. Spencer
Air Force Research Laboratory, Albuquerque, NM

D. Price
L-3 Communications, San Leandro, CA

P2.35: Improving of Frequency Characteristics of K-Range Magnetrons

G. I. Churyumov, K. M. Basrawi, A. I. Ekezli, K. V. Sivokon
Kharkov National University of Radio Electronics, Kharkov, Ukraine

P2.36: Linear Electron Accelerator on the Irregular Corrugated Waveguide

S. V. Kolosov, A. A. Kurayev, A. V. Senko
Belarussian State University of Informatics and Radioelectronics, Minsk, Belarus

P2.37: V-Band Traveling Wave Tube Design and Analysis

J-S. Lee
Consultant, Ann Arbor, MI

H. Song
University of Colorado, Colorado Springs, CO

P2.38: Simulation of RF Section and Beam-Wave Interaction in a 6 MW Peak Power S-Band Klystron

L. M. Joshi, D. Pal, D. Kant, A. R. Choudhary, S. C. Nangru, O. S. Lamba, M. K. Verma, A. Ghildiyal
Central Electronics Engineering Research Institute, Pilani, India

CODE DEVELOPMENT: CIRCUITS & INTERACTION

Wednesday, April 23, 2008 / 3:30 – 5:10 pm / De Anza I

Chair: **A. Vlasov**
SAIC/University of Maryland, College Park, MD

13.1: Large-Signal Code TESLA: Current Status and Recent Development (3:30)

I. A. Chernyavskiy, A. N. Vlasov
SAIC, McLean, VA

T. M. Antonsen, Jr.
University of Maryland, College Park, MD

S. J. Cooke, D. K. Abe, B. Levush
Naval Research Laboratory, Washington DC

K. T. Nguyen
Beam-Wave Research, Inc., Bethesda, MD

13.2: Numerical Modeling of Cavities With Low External Q (3:50)

S. J. Cooke
Naval Research Laboratory, Washington, DC

13.3; Accurate Representation of Attenuation in Large-Signal Helix TWT Simulation Codes (4:10)

D. Chernin, D. Dialetis
SAIC, McLean, VA

T. M. Antonsen, Jr.
University of Maryland, College Park, MD

B. Levush
Naval Research Laboratory, Washington DC

13.4: High-Frequency Circuit Simulator Based on Finite Integration Technology (4:30)

X-F. Zhu, Z-H. Yang, B. Li, J-Q. Li, L. Xu, T. Huang, X-L. Jin, Q. Hu, Y-L. Hu, J-J. Ma, W-F. Peng, L. Liao, L. Xiao, G-X. He
University of Electronic Science and Technology of China, Chengdu, ROC

13.5: High-Frequency Circuit Simulator Based on Finite-Element Method (4:50)

L. Xu, Z-H. Yang, B. Li, J-Q. Li, X-F. Zhu, T. Huang, X-L. Jin, Q. Hu, Y-L. Hu, J-J. Ma, W-F. Peng, L. Liao, L. Xiao, G-X. He
University of Electronic Science and Technology of China, Chengdu, ROC

Session 14

DEVICE TECHNOLOGY & PROCESSING

Wednesday, April 23, 2008 / 3:30 – 5:30 pm / De Anza II

Chair: **Y. Goren**
Teledyne Electronic Technologies, Rancho Cordova, CA

14.1: Electron Emission Near a Triple Point (3:30)

N. Jordan, Y. Y. Lau, D. M. French, R. M. Gilgenbach, P. Pengvanich
University of Michigan, Ann Arbor, MI

14.2: Secondary-Emission Property of Y_2O_3-Lu_2O_3-Mo Cathode (3:50)

J. Wang, W. Liu, F. Gao Y. Wang, M. Zhou
Beijing University of Technology, Beijing, ROC

14.3: Sintering Ceramic Laser Materials with a High-Power 83-GHz Beam (4:10)

A. Fliflet, M. Hornstein, S. H. Gold, M. Ashraf Imam
Naval Research Laboratory, Washington, DC

M. Kahn
Icarus Research, Bethesda, MD

14.4: Cryogenic Machining of Porous Tungsten for Dispenser Cathode Applications (4:30)

J. Tarter, M. Effgen
Semicon Associates, Lexington, KY

F. Pusavec
University of Ljubljana, Slovenia, EU

I. S. Jawahir
University of Kentucky, Lexington, KY

14.5: Hollow-Cathode Emission and Ignition Characterization (4:50)

W. Tighe, K-R. Chien
L-3 Communications Electron Technologies, Inc., Torrance, CA

14.6: A Compact High-Power, Sub-Millimeter-Wave Extended Interaction Klystron (5:10)

M. Hyttinen, B. Steer, A. Roitman, P. Horoyski, R. Dobbs, E. Sokol, D. Berry
CPI Canada, Georgetown, Ontario, Canada

TWT MODELING

Thursday, April 24, 2008 / 8:30 – 10:10 am / De Anza I

Chair: **R. Carter**
Lancaster University, Lancaster, UK

15.1: Simulation of Multi-Reflections in a Helix-Type TWT **(8:30)**

P. Birtel, A. F. Jacob
Tecnische Universitat, Harburg, Germany

W. Schwertfeger, J-F. David, A. Le Clair
Thales Electron Devices, Ulm, Germany

15.2: SWS Improved Analysis Based on Inhomogeneous Dielectric Loading **(8:50)**

C. Paoloni
University of Roma Tor Vergata, Rome, Italy

M. Aloisio
European Space Agency, Noordwijk, The Netherlands

15.3: Particle-in-Cell Simulations on a Ka-Band Double-Slot Staggered Coupled-Cavity Traveling-Wave Tube **(9:10)**

J. Choi, H-J. Kim, H. Kim
Kwangwoon University, Seoul, Korea

15.4: Analysis of Sever-Loss in a Helical Slow-Wave Structure **(9:30)**

V. B. Naidu, S. K. Datta, P. R. Ramana Rao, A. K. Agrawal, S. Reddy, L. Kumar
Microwave Tube Research & Development Centre, Bangalore, India

B. N. Basu
College of Engineering and Technology, Moradabad, India

15.5: Optimization of Helix Pitch Profile for Broad-Band Mini-TWTs **(9:50)**

T. Ghosh, A. Jacob, A. Tokeley, K. Rushbrook, I. Poston, R. Matthews, A. J. Challis, D. Bowler
E2v Technologies, Chelmsford, Essex, UK

BREAK **(10:10–10:30)**

DEVICES & TECHNOLOGY

Thursday, April 24, 2008 / 8:30 – 10:30 am / De Anza II

Chair: **T. Grant**
Communications and Power Industries, Palo Alto, CA

16.1: Session Keynote: Research and Determination of Microwave Amplifiers Performance Parameters Providing Unperturbed Amplification of Complicated and Nanosecond Microwave Pulses (8:30)

A. Kotov, E. A. Gelvich, A. D. Zakurdayev, E. V. Zhary
FSUE RPC 'Istok,' Fryazino, Russia

16.2: Development of High-Peak-Power Klystron in IECAS (8:50)

W. Yong, D. Yaogen , L. Pukun , X. Jingxin
Chinese Academy of Sciences, Beijing, ROC

16.3: Studies of the Transient Response of a Klystron (9:10)

R. Carter, R. O. Jenkins
Lancaster University, Lancaster, U.K.

16.4: Design Study of Planar Output Cavities for Deflection Modulated Electron Vacuum Tubes (9:30)

A. Grede, H. Henke, R. Wegner
Technische Universitat Berlin, Berlin, Germany

16.5: Potential Use of UNCD Membranes as Broadband Vacuum Windows at W-Band Frequencies (9:50)

D. Springmann, S. Ho, J. H. Booske, S. M. Drezdzon, J. J. Lipor, D. W. van der Weide
University of Wisconsin, Madison, WI

K. Montgomery
L-3 Communications, San Carlos, CA

16.6: A Fast Multilayer Window Design Tool: Simulations and Comparison with Experiment (10:10)

C. Whyte, A. R. Young, D. R. Rowlands, C. W. Robertson, A. D. R. Phelps, W. He, A. W. Cross, K. Ronald
University of Strathclyde, Glasgow, U.K.

POSTER III

Thursday, April 24, 2008 / 8:30 – 11:30 am / De Anza III

P3.1: High-Power Solid-State Magnetron Transmitters

J. Kinross-Wright, N. Butler, S. Normand, M. P. J. Gaudreau, M. A. Kempkes
Diversified Technologies, Inc., Bedford, MA

P3.2: A Modular Solid-State Switch Design for Pulsed-Power Applications

M. Davister
L-3 Communications, Williamsport, PA

P3.3: Electrons Deceleration on the Anode and Prospects of Powerful Switch Tubes for Converting Technics

V. Perevodchikov, P. Stalkov, V. Shapenko
Russian Electrotechnical Institute (VEI), Moscow, Russia

P3.4: Cathode Manufacturing Relational Data Collection and Process Control System

M. Effgen
Semicon Associates, Lexington, KY

P3.5: Thermionic Emission and Cooling on Barium Strontium Thin-Film Surface

F. Jin, S. Little, G. Qian
Ball State University, Muncie, IN

P3.6: Quality and Availability of Tungsten 3% Rhenium Wire for Cathode Heaters

J. Wellington
Communication & Power Industries, Palo Alto, CA

P3.7: Study on Growth Mechanism, Optical, and Field-Emission Properties of Inject-Like ZnO Nanostructure

X. Zhang, W. Lei, B. Wang, C. Li, X. Zhang
Southeast University, Nanjing, ROC

P3.8: Dramatic Lowering of Work Function for the Barium Atoms Adsorbed onto a p(2x2) W(001) Substrate Based on Ab Initio Calculations

M-C. Lin
Fu Jen University, Taiwan, ROC

R-F. Jao
National Cheng Kung University, Taiwan, ROC

P3.9: Coverage and Geometry Effects on Work Function of Cathode Surfaces with Adsorbed Atoms Based on Ab Initio Calculations

R-F. Jao
National Cheng Kung University, Taiwan, ROC

M-C. Lin
Fu Jen University, Taiwan, ROC

P3.10: Effects of Sintering Temperature and Composition Variations on the Magnetic Properties of Samarium Cobalt Magnets

L. Wolverton
Semicon Associates, Lexington, KY

L. R. Falce
Consultant, Surprise, AZ

P3.11: Cathode Manufacturing: Globalization and Its Effects on Instability in the Metals Markets on Cathode Pricing

M. Effgen
Semicon Associates, Lexington, KY

B. D. Hoover
NAVSEA, Crane, IN

P3.12: Effect of Electrodes Curvature of a Cold-Cathode Crossed-Field Gun on Process of Secondary-Emission Multiplication

G. Churyumov, Y. L. Starchevskiy
Kharkov National University of Radio Electronics, Kharkov, Ukraine

P3.13: Resistance Spot Welding of 50Mo–50Re Refractory Alloy Foils

J. Farrell, W. Umstead
Semicon Associates, Lexington, KY

J. Xu, T. Zhai
University of Kentucky, Lexington, KY

P3.14: High-Temperature Braze Flow Control During Manufacturing of Dispenser Cathodes

D. Busbaher
Semicon Associates, Lexington, KY

P3.15: Thermal-Management Effect of Heat Shielding Using Thin Metal Cylinders on a Dispenser Cathode Temperature

D. Busbaher
Semicon Associates, Lexington, KY

P3.16: Gun Emittance of a Space-Charge-Limited Diode Due to Temperature Effects and Surface Roughness

P. Larsen, T. M. Antonsen, Jr.
University of Maryland, College Park, MD

K. T. Nguyen, D. K. Abe
Naval Research Laboratory, Washington, DC

P3.17: Simulation of Microwave-Oven Magnetron with Transparent Cathode

B. Zeng, M. Xie, Z. Zhang, X. Li, S. Tian
University of Electronic Science & Technology of China, Chengdu, ROC

W. Lei
CAEP, Mianyang, ROC

P3.18: Research on TWTs Employing Field-Emitter Arrays

X. Li, G. Bai, M. Liu, S. Li, S. Cai, H. Li, M. Ding, F. Zhang, J. Feng, F. Liao
Beijing Vacuum Electronics Research Institute, Beijing, ROC

P3.19: Simulation Study of Field-Emitter Arrays Using Opera-3D

H. Li, J. Feng
Vacuum Electronics National Laboratory, Beijing, ROC

P3.20: Field Enhancement on Knife-Edge Cathodes

R. Miller, J. Booske
University of Wisconsin, Madison, WI

Y. Y. Lau
University of Michigan, Ann Arbor, MI

P3.21: Electromagnetic Scattering by a Conducting Circular Cylinder Coated by an Elliptic Lossy Dielectric Cylinder

J. Xu, W. Wang, L. Yue, Y. Gong, Y. Wei
University of Electronic Science & Technology of China, Chengdu, ROC

P3.22: A Matrix Electrodynamics: A Similarity to the Heisenberg's Mechanics?

A. Gritsunov, A. V. Veryovkina
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

P3.23: Three-Dimensional Excitation Equations for the Longitudinally Irregular Waveguide with Finite Conductions of the Walls

S. V. Kolosov, A. A. Kurayev, A. P. Kharseyev
Byelarusian State University, Minsk, Belarus

P3.24: The Exact Excitation Equation for the Cavity with Finite Conductions of the Wall

A. A. Kurayev, T. L. Popkova, A. K. Sinitsyn
Byelorussian State University of Informatics and Radioelectronics, Minsk, Belarus

P3.25: Research of Dependence of a Reflectivity by of Symmetrical H0i-Waves on Geometrical Parameters of Filters in a Hollow Irregular Waveguide

O. Naranovich, A. K. Sinitsyn
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

P3.26: Pulse Shortening by RF Breakdown in Relativistic Backward-Wave Oscillator

G-S. Park, S-H. Min, H-C. Jung, S-H. Shin
Seoul National Univeristy, Seoul, Korea

J-H. An, S-H. Lee, Y-J. Yoon
Yonsei University, Seoul, Korea

J-Y. Kim, W-S. Lee, J-H. So
Agency for Defense Development, DaeJeon, Korea

P3.27: Vircator System with Pre-Modulation of Electron Beam

A. Hramov, I. S. Rempen, À. A. Koronovksii, D. I. Trubetskov
Saratov State University, Saratov, Russia

P3.28: Microwave Generation by a Virtual Cathode Enclosed in a Circular Cavity Placed Transversally in a Cylindrical Waveguide

A. Santos, B. S. Araújo Filho
Aeronautical and Space Institute, SP, Brazil

J. J. Barroso
National Institute for Space Research, SP, Brazil

H. S. Maciel
Aeronautical Technology Institute, SP, Brazil

P3.29: Role of Periodicity in the Frequency-Dependent Transmission of 1D Array of Rectangular Holes

G-S. Park, J-K. So
Seoul National Univeristy, Seoul, Korea

P3.30: Design of an Ka-Band Mode Converter

W. Yong, R. Wang, D. Yaogen, R. Cunjun
Chinese Academy of Sciences, Beijing, ROC

P3.31: Study of RF Window for X-Band Linac at 9.3 GHz

T. Tiwari
SAMEER, Mumbai, India

P3.32: A Broadband Microwave Window for W-band TWT

Y. Hu, J. Feng, J. Cai, X. Wu, S. Ma, B. Qu
Vacuum Electronics National Laboratory, Beijing, ROC

P3.33: Gaseous Dielectric High-Voltage Insulation for Space Applications

D. Komm, D. J. Hoppe
California Institute of Technology, Pasadena, CA

P3.34: Types of Primary Electrons Sources for Terahertz Cold-Cathode Magnetron Firing

D. Yeryomka
Kharkiv National University, Kharkiv, Ukraine

P3.35: Field-Emission Vacuum Triode: THz Waveguide Solutions for the Transmission Lines

R. Riccitelli, F. Brunetti, C. Paoloni, G. Ulisse, A. Di Carlo
University of Roma Tor Vergata, Roma, Italy

V. Krozer
Technical University of Denmark, Lyngby, Denmark

P3.36: Optimization of Beam-Wave Interaction in a P3.5-THz Smith-Purcell Device

G-S. Park, J. K. So, M. A. Sattorov, A. Srivastava, K. H. Jang, J. H. Won
Seoul National Univeristy, Seoul, Korea

P3.37: CW Terahertz Imaging of Paraffin-Embedded Epithelial Cell of a Rat

G-S. Park, O. Kwon, D. W. Kim, H. Y. Kim, J. H. Won, Y. D. Joo, Y. H. Kim, D. S. Kim
Seoul National Univeristy, Seoul, Korea

H. J. Choi
National Cancer Center, Il-san, Korea

C. W. Baik, Y. M. Son, S. I. Kim, S. C. Jun
Samsung Advanced Institute of Technology, Yongin, Korea

J. I. Kim, S. G. Jeon
Korea Electrotechnology Research Institute, Changwon, Korea

P3.38: Superradiant Smith-Purcell Radiation in BWO/DRO Device

K. Lukin, E. M. Khutoryan
Institute for Radiophysics and Electronics, Kharkov, Ukraine

G-S. Park
Seoul National University, Seoul, Korea

LUNCH **(11:30–1:30)**

THz BWOS

Thursday, April 24, 2008 / 10:30 am – 12:10 pm / De Anza I

Chair: G-S. Park
Seoul National University, Seoul, Korea

17.1: Interaction Simulations of Two 650-GHz BWOs Using MAFIA (10:30)

C. Kory, J. A. Dayton, Jr.
Teraphysics, Cleveland, OH

17.2: Design of 650-GHz Helical BWO Using CST Studio Suite (10:50)

C. Kory, J. A. Dayton, Jr.
Teraphysics, Cleveland, OH

17.3: Session Keynote: Assembly and Preliminary Testing of the Prototype 650-GHz BWO (11:10)

J. Dayton, G. T. Mearini, C. L. Kory, D. Malta, M. Lueck, J. Tabeling, S. Worthington
Teraphysics, Cleveland, OH

17.4: A 650-GHz Helical BWO (11:30)

J. Dayton, C. L. Kory, G. T. Mearini, D. Malta, M. Lueck, C. A. Bower
Teraphysics, Cleveland, OH

17.5: Microfabricated Coupled-Cavity Backward-Wave Oscillator for Terahertz Imaging (11:50)

C-W. Baik, Y-M. Son, S. Il Kim, S-C. Jun, J-S. Kim, J. Hwang, J-M. Kim
Samsung Advanced Institute of Technology, Yongin, Korea

J-K. So, G-S. Park
Seoul National University, Seoul, Korea

LUNCH (12:10–1:30)

Session 18

ELECTRON GUNS AND COLLECTORS

Thursday, April 24, 2008 / 10:30 am – 12:10 pm / De Anza II

Chair: R. True
L-3 Communications EDD, San Carlos, CA

18.1: An Improved Magnetron Injection Gun Using Advanced High-Current-Density Cathodes for a W-Band TE(01) Gyro-TWT (10:30)

L. Barnett, N. C. Luhmann, Jr.
University of California at Davis, Davis, CA

C. C. Chiu, K. R. Chu, Y. C. Yan
National Tsing Hua University, Hsinchu, Taiwan

18.2: Beam-Current Instability Analysis with FFT (10:50)

V. Katsap, R. A. Kendall
NuFlare Technology, Hopewell Junction, NY

K. Saito
NuFlare Technology, Yokohama, Japan

18.3: Design of Electron-Optical System for a Ku-Band Multi-Beam Klystron (MBK) (11:10)

M. Vijay Kumar, V. Bhanu Naidu, A.K. Agrawal, S. Raina, Lalit Kumar
Microwave Tube R&D Centre, Bangalore, India

18.4: Thermal Mechanical Study of Mini-TWT Ceramic Jacketed Collectors (11:30)

L. Behnke, R. B. True, R. F. Watkins
L-3 Communications, San Carlos, CA

18.5: Investigation of Secondary-Electron-Emission Suppression for TWT Multistage Depressed Collectors (11:50)

M. Ding, M. Huang, J. Feng, G. Bai
Beijing Vacuum Electronics Research Institute, Beijing, ROC

LUNCH (12:10–1:30)

TWTS II

Thursday, April 24, 2008 / 1:30 – 3:10 pm / De Anza I

Chair: D. Whaley
L-3 Communications EDD, San Carlos, CA

19.1: Accurate Characterization of TWTA Distortion in Multicarrier Operation by means of a Correlation-Based Method (1:30)

M. Aloisio, E. Casini, P. Angeletti, R. Oliva Balague, E. Colzi, S. D'Addio
European Space Agency ESA/ESTEC, Noordwijk, Netherlands

19.2: New Linearizer Channel Amplifier Family Designed to Optimize TWT Operation (1:50)

J. Maynard, P. Chabbert, J. F. Villemazet, M. Perrel, P. Lautier, R. Rodriguez, T. Peyretaillade, J. L. Aoustin, P. Ayouaz, E. Frayssinhes
Thales Alenia Space, Toulouse, France

19.3: Wide/Multi-Band Linearized TWTAs (2:10)

A. Katz, R. Gray, R. Dorval
Linearizer Technology, Inc., Hamilton, NJ

19.4: MPM for EW Systems (2:30)

P. Trani, P. Nugues, P. Antoine
Thales Electron Devices, Velizy, France

19.5: A Compact Efficient 200-W Ku-band MPM for Data Links and Synthetic Aperture Radar (2:50)

A. Donald, R. Duggal, J. Welter, D. Springmann, T. Schoemehl
L-3 Communications, San Carlos, CA

BREAK (3:10–3:30)

MBK

Thursday, April 24, 2008 / 1:30 – 3:10 pm / De Anza II

Chair: Adam Balkcum
Communications and Power Industries, Palo Alto, CA

20.1: Session Keynote: Reseach Progress on X-Band Multi-Beam Klystron (1:30)

Y. Ding, B. Shen, J. Cao, Y. Zhang, C. Ruan, H-H. Gu, D. Zhang, C. Wang, M. Cao,
Chinese Academy of Sciences, Beijing, ROC

20.2: Experimental Demonstration of MBK2: An Eight-Beam Five-Cavity Multiple-Beam Klystron (1:50)

D. Abe J-X. Qiu, B. Levush,
Naval Research Laboratory, Washington, DC

D. E. Pershing, E. L. Wright, K. T. Nguyen
Beam-Wave Research, Inc., Bethesda, MD

F. N. Wood, R. E. Myers
ATK, Newington, VA

E. L. Eisen
CPI, Inc., Palo Alto, CA

20.3: High-Average-Power Broadband 18-Beam Klystron Circuit and Collector Designs (2:10)

K. Nguyen, E. L. Wright, D. E. Pershing
Beam-Wave Research, Inc., Bethesda, MD

J. Petillo
SAIC, Billerica, MA

D. K. Abe, B. Levush
Naval Research Laboratory, Washington, DC

20.4: High-Efficiency Multiple-Beam Klystron (MBK) (2:30)

C. Lingwood, R. G. Carter
Lancaster University, Lancaster, U.K.

20.5: Electrodynamics Parameters of the Double-Gap Output Structure for Multiple-Beam Klystron (2:50)

K. Zaitsev, V. M. Pikunov, A. N. Sandalov
Moscow State University, Moscow, Russia

Y. Ding, B. Shen
Institute of Electronics Chinese Academy of Sciences, Beijing, ROC

BREAK (3:10–3:30)

COLD CATHODES

Thursday, April 24, 2008 / 3:30 – 5:10 pm / De Anza I

Chair: Y. Y. Lau
University of Michigan, Ann Arbor, MI

21.1: Measurements and Analysis of Advanced Field-Emission Cold Cathodes (3:30)

X. He, J. Scharer, J. Booske, S. Sengele
University of Wisconsin, Madison, WI

21.2: Enhanced Field-Emission Properties from Carbon-Nanotube Emitters Grown on NiCr Alloy Surfaces with Grain-Boundary Effect (3:50)

C. Nguyen, S. Yim, R. Ohta, N. B. Zuckerman
NASA Ames Research Center, Moffett Field, CA

E. Allen, J. L. Killian
San Jose State University, San Jose, CA,

21.3: Field-Emission Properties of Carbon-Nanotube Pillar Arrays Patterned Directly on Metal-Alloy Surfaces (4:10)

C. Nguyen, J. L. Killian, N. Zuckerman, M. Meyyappan
NASA Ames Research Center, Moffett Field, CA

D. L. Niemann, J. Silan, B. P. Ribaya, M. Rahman
Santa Clara University, Santa Clara, CA

21.4: Gated Carbon-Nanotube Pillar Arrays for High-Current Applications (4:30)

D. L. Niemann, J. Silan, B. P. Ribaya, M. Rahman
Santa Clara University, Santa Clara, CA

C. Nguyen, J. L. Killian
NASA Ames Research Center, Moffett Field, CA

21.5: Dynamic Properties of Individual Carbon-Nanotube Emitters for Maskless Lithography (4:50)

B. Ribaya, D. L. Niemann, N. G. Gunther, M. Rahman
Santa Clara University, Santa Clara, CA

C. V. Nguyen, J. Makarewicz
NASA Ames Research Center, Moffett Field, CA

MAGNETRONS AND IOTS

Thursday, April 24, 2008 / 3:30 – 5:30 pm / De Anza II

Chair: **M. Boyle**
L-3 Communications EDD, Williamsport, PA

22.1: Magnetron Experiments on the Short-Pulse (SINUS-6) Accelerator **(3:30)**

S. Prasad, M. Roybal, K. Prestwich, M. Fuks, C. J. Buchenauer, E. Schamiloglu
University of New Mexico, Albuquerque, NM

22.2: Experimental Study on Axial Distribution of Anode Current in 2.45-GHz Oven Magnetrons **(3:50)**

T. Mitani, N. Shinohara, H. Matsumoto
Kyoto University, Kyoto, Japan

M. Aiga, N. Kuwahara, T. Ishii
Panasonic Semiconductor Discrete Devices Co., Ltd., Kyoto, Japan

22.3: The Self-Injection-Locked Magnetron **(4:10)**

G-W. Choi, H-J. Kim, J-J. Choi
Kwangwoon University, Seoul, Korea

22.4: On The Prospects of Increasing Gain, Efficiency, and Linearity of TV IOTs **(4:30)**

A. Galdetskiy, A. N. Korolev
SRPC 'Istok,' Fryazino, Moscow, Russia

22.5: Development of a Wideband Inductive Output Tube **(4:50)**

R. Kowalczyk, M. Kirshner, R. True, C. Wilsen, M. Boyle, H. Schult, J. Cipolla
L-3 Communications, San Carlos, CA

22.6: Design of a 200-MHz 250-kW Coaxial Inductive Output Tube **(5:10)**

T. Kimura, H. P. Bohlen, M. J. Cattelino, T. J. Grant, K. B. Lind, M. A. Perrin
Communications and Power Industries, Palo Alto, CA

CODE DEVELOPMENT: GUNS AND COLLECTORS

Thursday, April 24, 2008 / 3:30 –-5:10 pm / De Anza III

Chair: **K. Nguyen**
Beam-Wave Research, Bethesda, MD

23.1: Computer Optimized Design of Electron Guns (3:30)

R. L. Ives, T. Bui, M. Read
Calabazas Creek Research, Inc., San Mateo, CA

J. David, A. Attarian, H. Tran,
North Carolina State University, Raleigh, NC

23.2: Current Capabilities of the Finite-Element MICHELLE Gun & Collector Simulation Code (3:50)

J. Petillo, D. Panagos
SAIC, Billerica, MA

B. Held, J. DeFord
Simulation Technology & Applied Research,Inc., Mequon, WI

K. Nguyen
Beam-Wave Research, Inc., Bethesda, MD

K. Jensen, B. Levush
Naval Research Laboratory, Washington, DC

23.3: Advanced Electron Guns and Depressed Collectors Design and Optimization Using the MICHELLE/ ANAYST Environment (4:10)

B. Held, J. DeFord
Simulation Technology & Applied Research, Inc., Mequon, WI

J. Petillo, D. Panagos
SAIC, Billerica, MA

E. Nelson
LANL, Los Alamos, NM

Baruch Levush
NRL, Washington, DC

23.4: Simulation Possibilities of Vacuum Electronic Devices with CST PARTICLE STUDIO™ (4:30)

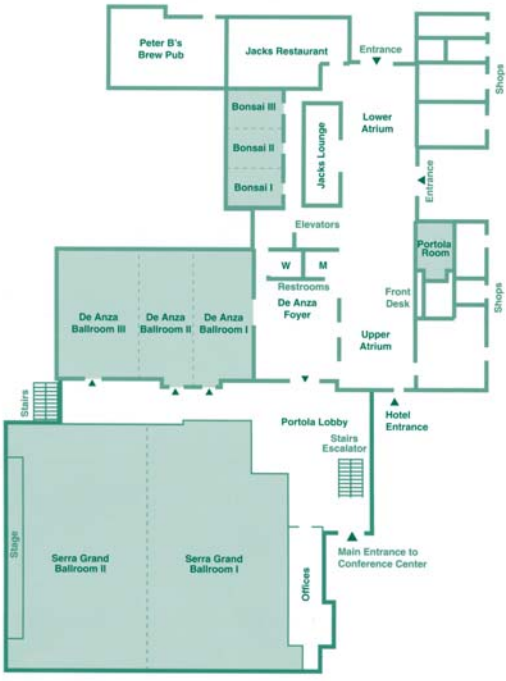
M. Balk
Computer Simulation Technology, Darmstadt, Germany

23.5: Nonlinear 3-D Magnetostatic Solver in Beam Optics Analyzer (4:50)

T. Bui, R. L. Ives
Calabazas Creek Research, Inc., Mountain View, CA

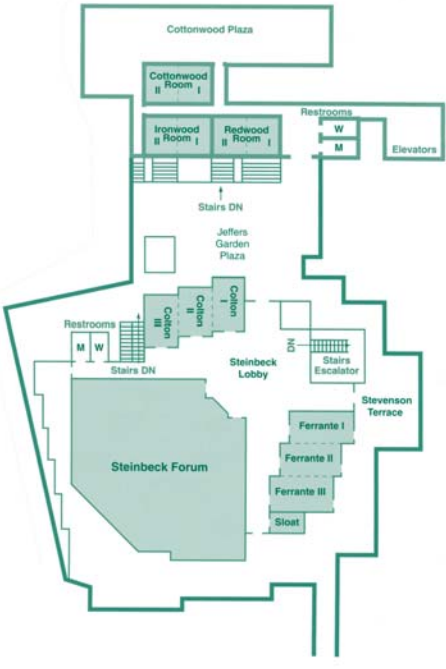
PORTOLA PLAZA HOTEL
AT MONTEREY BAY

LEVEL ONE



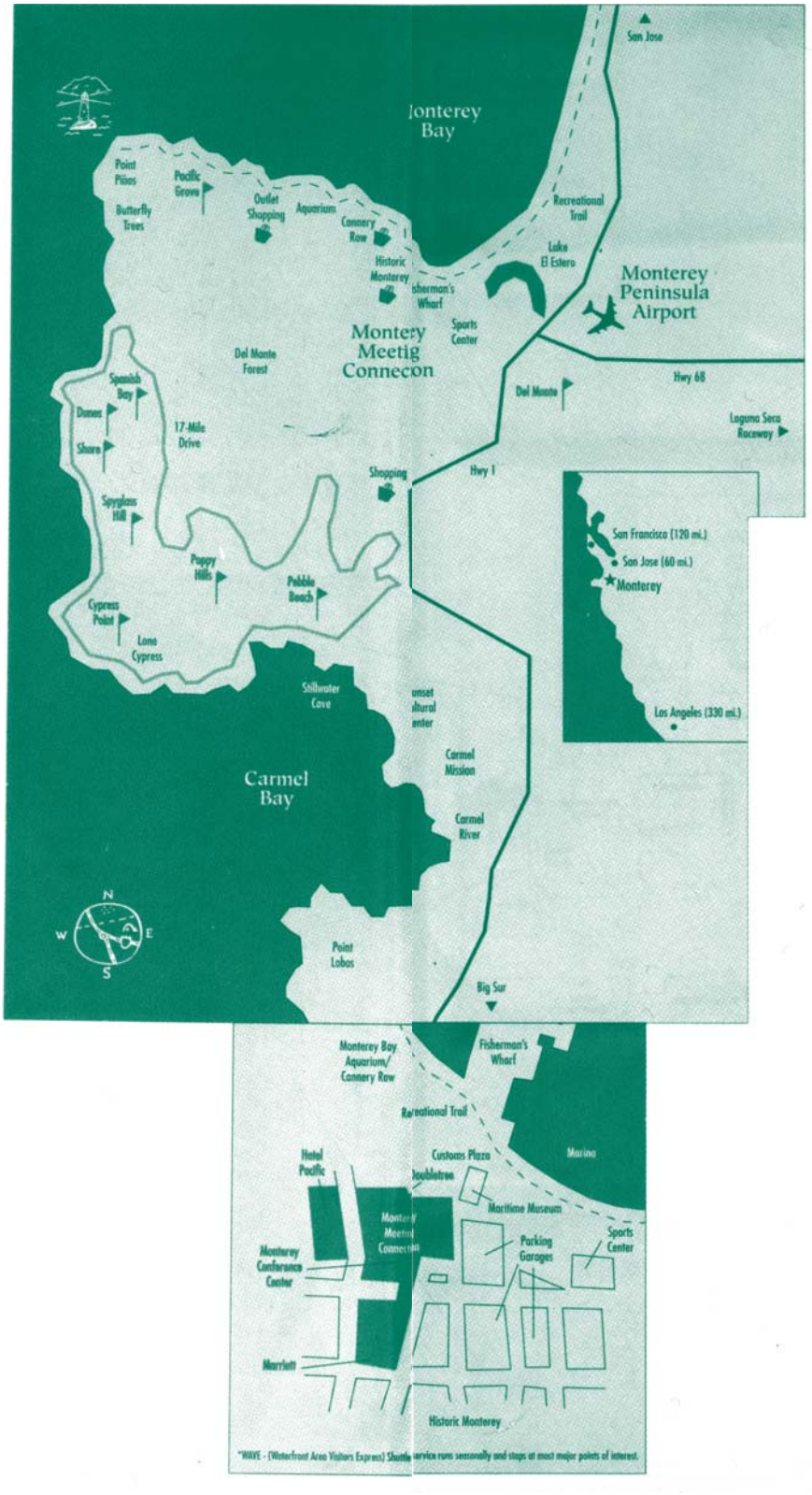
MONTEREY
CONFERENCE CENTER

LEVEL THREE



Monterey Peninsula Map

Monterey Peninsula Map



*WAVE - (Waterfront Area Visitors Express) Shuttle service runs seasonally and stops at most major points of interest.

Ninth IEEE International Vacuum Electronics Conference, Portola Plaza Hotel, Monterey, CA, April 22-24, 2008

Program at a Glance

	Tuesday, April 22			Wednesday, April 23			Thursday, April 24		
	Convention Center, Steinbeck Forum			De Anza I	De Anza II	De Anza III	De Anza I	De Anza II	De Anza III
8:30 10:10	PLENARY SESSION 8:15 AM Start			Session 7 TWTs I	Session 8 Gyro-Devices III	Poster 1	Session 15 TWT Modeling	Session 16 Devices & Technology	Poster 3
Break									
10:30- 12:10	PLENARY SESSION			Session 9 Space TWTs	Session 10 Sheet Beams		Session 17 THz BWOs	Session 18 Electron Guns & Collectors	
Lunch	De Anza I	De Anza II	De Anza III	De Anza I	De Anza II	De Anza III	De Anza I	De Anza II	De Anza III
1:30- 3:10	Session 1 THz Devices & Microfabrication I	Session 2 Gyro-Devices I	Session 3 Thermionic Cathodes	Session 11 MM-Wave TWTs	Session 12 Klystrons	Poster 2	Session 19 TWTs II	Session 20 MBKs	
Break									
3:30- 5:10	Session 4 THz Devices & Microfabrication II	Session 5 Gyro-Devices II	Session 6 Scandate Cathodes	Session 13 Code Development- Circuits & Interaction	Session 14 Device Technology & Processing		Session 21 Cold Cathodes	Session 22 Magnetrons & IOTs	Session 23 Code Development- Guns & Collectors
7:00- 9:00				Wednesday Evening Dinner & Entertainment					

Ninth IEEE International Vacuum Electronics Conference
c/o Palisades Convention Management
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New York, NY 10003

ADVANCE PROGRAM

IVEC 2008