

2022 23rd International Vacuum Electronics Conference (IVEC 2022)

**Monterey, California, USA
25-29 April 2022**

**IEEE Catalog Number: CFP22VAM-POD
ISBN: 978-1-6654-4326-5**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22VAM-POD
ISBN (Print-On-Demand):	978-1-6654-4326-5
ISBN (Online):	978-1-6654-4325-8

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

1-1: High-Power V-Band TWT Development (Page 1)

Young-Min Shin (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Brad Stockwell (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Rasheda Begum (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Andy Moyer (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Kevin Childs (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Christopher Nilsen (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Loren Roeder (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Michael Cusick (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Peter Kolda (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)
Tom Grant (*Microwave Power Product Division Communications and Power Industries (CPI) LLC*)

1-2: Low-Voltage, Four-Beam Ka-Band TWT Experiment (Page 3)

Reginald Jaynes (*U.S. Naval Research Laboratory*)
Colin Joye (*U.S. Naval Research Laboratory*)
Franklin Wood (*U.S. Naval Research Laboratory*)
Igor Chernyavskiy (*U.S. Naval Research Laboratory*)
Alexander Vlasov (*U.S. Naval Research Laboratory*)
John Pasour (*U.S. Naval Research Laboratory*)
John Rodgers (*U.S. Naval Research Laboratory*)
Baruch Levush (*U.S. Naval Research Laboratory*)
Khanh Nguyen (*Beam-Wave Research, Inc.*)
John Petillo (*Leidos Corp.*)
Vadim Jabotinski (*Leidos Corp.*)

1-3: Q-band 190W Helix TWT with Two Stage Collector (Page 5)

Sosuke Higashibata (*NEC Network and Sensor Systems, Ltd.*)
Naofumi Kosugi (*NEC Network and Sensor Systems, Ltd.*)
Daiki Matsumoto (*NEC Network and Sensor Systems, Ltd.*)
Takatsugu Munehiro (*NEC Network and Sensor Systems, Ltd.*)
Tetsuo Machida (*NEC Network and Sensor Systems, Ltd.*)
Yoshinori Mori (*NEC Network and Sensor Systems, Ltd.*)
Kenji Nakajima (*NEC Network and Sensor Systems, Ltd.*)
Travis Stewart (*NEC Corporation of America*)

1-4: Q-Band Helix Traveling-Wave Tube for Next-Generation Wireless Communications (Page 7)

Chuanchao Wang (*University of Electronic Science and Technology of China*)
Guang Yang (*Nanjing Sanle Microwave Technology Development Co., Ltd.*)
Ying Li (*Nanjing Sanle Microwave Technology Development Co., Ltd.*)
Hongxia Cheng (*Nanjing Sanle Microwave Technology Development Co., Ltd.*)
Pu Zhang (*University of Electronic Science and Technology of China*)
Silong Huang (*University of Electronic Science and Technology of China*)
Xuanming Zhang (*University of Electronic Science and Technology of China*)
Zhifang Lyu (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)

1-5: Design of Ka-Band Traveling-Wave Tube for Wireless Links (Page 9)

Rupa Basu (*Lancaster University*)
Purushothaman Narasimhan (*Lancaster University*)
Juan Sucuellamos (*Lancaster University*)
Claudio Paoloni (*Lancaster University*)

Session 2: Power Supplies & Components I: Power Supplies and Windows

Larry Sadwick (*Innosys*)

2-1: X-Band TWT Transmitter (Page 11)

Marcel P.J. Gaudreau (*Diversified Technologies, Inc.*)
Luan Jashari (*Diversified Technologies, Inc.*)
John Kinross-Wright (*Diversified Technologies, Inc.*)
Bill Lindsay (*Diversified Technologies, Inc.*)
Kevin Vaughan (*Diversified Technologies, Inc.*)
Tim Hawkey (*Diversified Technologies, Inc.*)
Michael Kempkes (*Diversified Technologies, Inc.*)
Rebecca Simpson (*Diversified Technologies, Inc.*)

2-2: COBRA DANE Radar Transmitter Group Replacement (Page 13)

Timothy Hawkey (*Diversified Technologies, Inc. (DTI)*)
Luan Jashari (*Diversified Technologies, Inc. (DTI)*)
Kevin Vaughan (*Diversified Technologies, Inc. (DTI)*)
Ynnesh Francis (*Diversified Technologies, Inc. (DTI)*)

Michael Kempkes (*Diversified Technologies, Inc. (DTI)*)
Rebecca Simpson (*Diversified Technologies, Inc. (DTI)*)

2-3: High-Stability Klystron Modulator for Commercial Accelerator Application (Page 15)

Christopher Chipman (*Diversified Technologies, Inc.*)
Anthony Heindel (*Diversified Technologies, Inc.*)
Merouane Benjnane (*Diversified Technologies, Inc.*)
Henry von Kelsch, IV (*Diversified Technologies, Inc.*)
Ziliang Ruan (*Diversified Technologies, Inc.*)
Marcel P.J. Gaudreau (*Diversified Technologies, Inc.*)
Michael Kempkes (*Diversified Technologies, Inc.*)
Rebecca Simpson (*Diversified Technologies, Inc.*)

2-4: Design of Pulse Power Supply for High Current Density Electron-Beam Source (Page 17)

Anand Abhishek (*CSIR-Central Electronics Engineering Research Institute*)
Niraj Kumar (*CSIR-Central Electronics Engineering Research Institute*)
Vishant (*CSIR-Central Electronics Engineering Research Institute*)
Bhim Singh (*Indian Institute of Technology, Delhi*)

2-5: Experimental Research on Output Window of S-Band High-Peak-Power Klystron (Page 19)

Yong Zhong (*Beijing Vacuum Electronics Research Institute*)
Yan Shu (*Beijing Vacuum Electronics Research Institute*)

2-6: Design and Thermal Analysis of Broadband Output Window for W-Band Gyro-TWT (Page 21)

Dajun Zhao (*University of Electronic Science and Technology of China*)
Wei Jiang (*University of Electronic Science and Technology of China*)
Yu Wang (*University of Electronic Science and Technology of China*)
Yuhao Song (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Jianxun Wang (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)

Session 3: Klystron / IOT

Aaron Jensen (*Leidos*)

3-1: A 3.0Mw, 402.5MHz, Pulsed Klystron for Use in the Spallation Neutron Source DTL-Linear at the Oak Ridge National Laboratory (Page 23)

Edward Eisen (*Communications & Power Industries LLC*)
Paul Krzeminsk (*Communications & Power Industries LLC*)
Jim McGrain (*Communications & Power Industries LLC*)
Rasheda Begum (*Communications & Power Industries LLC*)
Brad Stockwell (*Communications & Power Industries LLC*)
Takuji Kimura (*Communications & Power Industries LLC*)
Scott Forrest (*Communications & Power Industries LLC*)
Merritt Chesnut (*Communications & Power Industries LLC*)
Steve Lenci (*Communications & Power Industries LLC*)

3-2: DMLS Enables Rapid, Low-Cost Manufacture of an X-Band Klystron Circuit (Page 25)

Charlotte Wehner (*SLAC National Accelerator Laboratory*)
Julian Merrick (*SLAC National Accelerator Laboratory*)
Emilio Nanni (*SLAC National Accelerator Laboratory*)
Brandon Weatherford (*SLAC National Accelerator Laboratory*)
Brad Shirley (*SLAC National Accelerator Laboratory*)

3-3: Multiple Beam-Power Grid Tubes (Page 27)

R. Lawrence Ives (*Calabazas Creek Research, Inc.*)
Mike Read (*Calabazas Creek Research, Inc.*)
Thuc Bui (*Calabazas Creek Research, Inc.*)
David Collins (*Calabazas Creek Research, Inc.*)
George Marsden (*Calabazas Creek Research, Inc.*)
Thomas Habermann (*Calabazas Creek Research, Inc.*)
Ricky Ho (*Communications & Power Industries, LLC*)
Tom Cox (*Communications & Power Industries, LLC*)
Christopher McVey (*Communications & Power Industries, LLC*)
Ed Davies (*Communications & Power Industries, LLC*)
Nileshwar Chaudary (*Communications & Power Industries, LLC*)
James M. Potter (*JP Accelerator Works*)

3-4: Compact Low-Voltage Klystrons for Integrated Linear Accelerator Systems (Page 29)

Brandon Weatherford (*SLAC National Accelerator Laboratory*)
Erik Jongewaard (*SLAC National Accelerator Laboratory*)
Julian Merrick (*SLAC National Accelerator Laboratory*)
Chris Nantista (*SLAC National Accelerator Laboratory*)
Alex Nguyen (*SLAC National Accelerator Laboratory*)

Ann Sy (*SLAC National Accelerator Laboratory*)
Sami Tantawi (*SLAC National Accelerator Laboratory*)

3-5: A Multi-Mode Extended Interaction Amplifier (Page 31)

Zhiwei Chang (*Shenzhen University*)
Guoxiang Shu (*Shenzhen University*)
Yanyan Tian (*Shenzhen University*)
Wenlong He (*Shenzhen University*)

3-6: A 1.3 GHz 100 kW Ultra-high Efficiency Klystron (Page 33)

Michael Read (*Calabazas Creek Research Inc.*)
Thomas Habermann (*Calabazas Creek Research Inc.*)
Aaron Jensen (*Leidos*)
David Marsden (*Calabazas Creek Research Inc.*)
Thuc Bui (*Calabazas Creek Research Inc.*)
George Collins (*Calabazas Creek Research Inc.*)
R. Lawrence Ives (*Calabazas Creek Research Inc.*)

Session 4: Microfabricated MMW Sources

James Dayton (*16ZSL0*)

4-1: Additive Manufacturing Methods for Millimeter-Wave Vacuum Electronics (Page 35)

Alan Cook (*U.S. Naval Research Laboratory*)
Colin Joye (*U.S. Naval Research Laboratory*)
Reginald Jaynes (*U.S. Naval Research Laboratory*)
Benjamin Albright (*U.S. Naval Research Laboratory*)
Frank Wood (*U.S. Naval Research Laboratory*)
Jeffrey Calame (*U.S. Naval Research Laboratory*)
David Schipf (*NRC Research Assoc. Program*)

4-2: Test of D-Band Folded Waveguide Traveling-Wave Tube (Page 37)

Yujiang Liu (*University of Electronic Science and Technology of China*)
Feng Lan (*University of Electronic Science and Technology of China*)
Hongfei Li (*University of Electronic Science and Technology of China*)
Zugen Guo (*University of Electronic Science and Technology of China*)
Ruifeng Zhang (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)

4-3: D-Band Medium-Power Traveling-Wave Tube (Page 39)

Rupa Basu (*Lancaster University*)
Purushothaman Narasimhan (*Lancaster University*)
Rosa Letizia (*Lancaster University*)
Claudio Paoloni (*Lancaster University*)

4-4: Design and Cold-Test of D-Band Planar Microstrip Meander Line Slow-Wave Structures and Adaptors (Page 41)

Yang Xie (*Southeast University*)
Ningfeng Bai (*Southeast University*)
Xiaohan Sun (*Southeast University*)
Hongxia Chen (*Nanjing Sanle Group Co. Ltd*)
Pan Pan (*Beijing Vacuum Electronics Institution*)
Jun Cai (*Beijing Vacuum Electronics Institution*)
Wenjie Yu (*Beijing Vacuum Electronics Institution*)
Jinjun Feng (*Beijing Vacuum Electronics Institution*)

4-5: Study on a Microfabricated Slow-Wave Structure for the Millimeter-band Backward-Wave Oscillator Based on the Pseudospark-Source Electron Gun (Page 43)

Andrey Starodubov (*Saratov Branch, V.A. Kotel'nikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Roman Torgashov (*Saratov Branch, V.A. Kotel'nikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Viktor Galushka (*Saratov Branch, V.A. Kotel'nikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Anton Pavlov (*Saratov State University*)
Andrey Rozhnev (*Saratov Branch, V.A. Kotel'nikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Valeriy Emelyanov (*Saratov Branch, V.A. Kotel'nikov Institute of Radio Engineering and Electronics RAS & SC 'RPE 'Almaz'*)
Nikita Ryskin (*Saratov Branch, V.A. Kotel'nikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Anand Abhishek (*CSIR-Central Electronics Engineering Research Institute*)
Vishant (*CSIR-Central Electronics Engineering Research Institute*)
Niraj Kumar (*CSIR-Central Electronics Engineering Research Institute*)

Session 5: Gyrotron Amplifiers

Monica Blank (CPI)

- 5-1: Experiment on Gyrotron Traveling Wave Tube with Inner Mode Converter in W-band TE₀₂ Mode** (Page 45)
Efeng Wang (*Beijing Vacuum Electronics Research Institute*)
Xu Zeng (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)
- 5-2: Observation of Low-Frequency Oscillations in W-Band Gyro-TWTs caused by Weak and Strong Plasma** (Page 47)
Guo Liu (*University of Electronic Science and Technology of China*)
Yu Wang (*University of Electronic Science and Technology of China*)
Wei Jiang (*University of Electronic Science and Technology of China*)
Jianxun Wang (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)
- 5-3: Experiment Design of One-Octave Bandwidth Gyro-BWO with Zigzag Quasi-Optical Transmission Line** (Page 49)
Sergey V. Samsonov (*Institute of Applied Physics, Russian Academy of Sciences*)
Grigoriy G. Denisov (*Institute of Applied Physics, Russian Academy of Sciences*)
Alexander A. Bogdashov (*Institute of Applied Physics, Russian Academy of Sciences*)
Igor G. Gachev (*Institute of Applied Physics, Russian Academy of Sciences*)
Maxim V. Kamenskiy (*Institute of Applied Physics, Russian Academy of Sciences*)
Kseniya A. Leshcheva (*Institute of Applied Physics, Russian Academy of Sciences*)
- 5-4: Dielectric Loss Dissipation and Power Capacity Analysis for W-Band Gyro-TWT** (Page 51)
Wei Jiang (*University of Electronic Science and Technology of China*)
Boxin Dai (*University of Electronic Science and Technology of China*)
Chaoxuan Lu (*University of Electronic Science and Technology of China*)
Jianxun Wang (*University of Electronic Science and Technology of China*)
Youlei Pu (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Zewei Wu (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)
- 5-5: A Broadband TE₀₁ Mode Input Coupler for Ka-Band MW-Level Coaxial Gyrotron Traveling Wave Tubes** (Page 53)
Yingjian Cao (*University of Electronic Science and Technology of China*)
Weijie Wang (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Yu Wang (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)

Session 6: Scandate and Dispenser Cathodes

Daniel Busbaher (3M)

- 6-1: Scandate Cathode Performance in Xenon Discharge** (Page 55)
Bernard Vancil (*e beam, inc.*)
Charles Osborne (*e beam, inc.*)
Victor Schmidt (*e beam, inc.*)
Michael Kleschuk (*e beam, inc.*)
Wayne Ohlinger (*Consultant*)
- 6-2: Evaluation of Work Function for Scandate Cathodes Produced from Nano-Scandia/Tungsten Composite** (Page 57)
Daniel E. Bugaris (*Engi-Mat Co.*)
Claudia Goggin (*Engi-Mat Co.*)
Antonio Mántica (*University of Kentucky*)
T. John Balk (*University of Kentucky*)
Ruslan Chubaruk (*3M Technical Ceramics*)
Daniel Busbaher (*3M Technical Ceramics*)
- 6-3: Relative Thermodynamic Stabilities of Sc-Containing Surface Configurations in Scandate Cathodes** (Page 59)
Mujan N. Seif (*University of Kentucky*)
T. John Balk (*University of Kentucky*)
Matthew J. Beck (*University of Kentucky*)
- 6-4: Characterization of the Materials, Phases, and Morphology Typical of High-Performance Scandate Cathodes** (Page 61)
T. John Balk (*University of Kentucky*)
Michael J. Detisch (*University of Kentucky*)
Huanhuan Bai (*University of Kentucky*)
Xiaotao Liu (*University of Kentucky*)

Mujan N. Seif (*University of Kentucky*)
Matthew J. Beck (*University of Kentucky*)
Bernard K. Vancil (*E Beam, Inc.*)

- 6-5: Paper Unavailable: Y2O3 -W Matrix Dispenser Cathodes with Activator Addition** (Page NA)
Jinshu Wang (*Beijing University of Technology*)

Session 7: Modeling I - Devices

Peng Zhang (*Michigan State University*)

- 7-1: Effects of Magnetic Field on Stability and Attainable Power of VE Amplifiers** (Page 63)
Vadim Jabotinski (*Leidos*)
Igor A. Chernyavskiy (*Naval Research Laboratory*)
Alexander N. Vlasov (*Naval Research Laboratory*)
- 7-2: Eigenmode Solution for Beam-Loaded Slow-Wave Structures Based on Particle-In-Cell Simulations** (Page 65)
Tarek Mealy (*University of California, Irvine*)
Filippo Capolino (*University of California, Irvine*)
- 7-3: Comprehensive and Increasingly Accurate Stability Study of the Experimental W-Band TWT with Code TESLA-Z Stability Framework** (Page N/A)
Igor A. Chernyavskiy (*US Naval Research Laboratory*)
Alan M. Cook (*US Naval Research Laboratory*)
John C. Rodgers (*US Naval Research Laboratory*)
- 7-4: Impact of Asymmetric Beam Shapes on the Body Current and BWO Margin in Helix TWTs** (Page 69)
Philip Birtel (*Thales Deutschland GmbH*)
Moritz Hägermann (*Hamburg University of Technology*)
Arne Jacob (*Hamburg University of Technology*)
- 7-5: Characterization of Reflected RF Power in a Misaligned Ka-Band Serpentine Waveguide TWT** (Page 71)
Kyle F. Kuhn (*University of Maryland, College Park*)
Thomas Antonsen (*University of Maryland, College Park*)
Brian Beaudoin (*University of Maryland, College Park*)
Philipp Borchard (*Dymenso LLC*)
Joseph Hoh (*Dymenso LLC*)
John Petillo (*Leidos Corporation*)
Aaron Jensen (*Leidos Corporation*)
- 7-6: Beam Dynamics Modeling of an Electron Gun for an L-Band High-Efficiency IOT** (Page 73)
Mohamed A. K. Othman (*SLAC National Accelerator Laboratory*)
Brad Shirly (*SLAC National Accelerator Laboratory*)
Ann Sy (*SLAC National Accelerator Laboratory*)
Erik Jongewaard (*SLAC National Accelerator Laboratory*)
Brandon Weatherford (*SLAC National Accelerator Laboratory*)
Michael Boyle (*Stellant Systems*)
Holger Schult (*Stellant Systems*)

Session 8: HPM - Devices

David Abe (*DARPA*)

Dev Palmer (*Defense Advanced Research Projects Agency*)

- 8-1: Generation of 565 MW of X-Band Power for Structure-Based Wakefield Acceleration Using a Metamaterial-Based Power Extractor** (Page 75)
Julian Picard (*Massachusetts Institute of Technology*)
Xueying Lu (*Northern Illinois University & Argonne National Laboratory*)
Manoel Conde (*Argonne National Laboratory*)
Scott Doran (*Argonne National Laboratory*)
Gwanghui Ha (*Argonne National Laboratory*)
Chunguang Jing (*Euclid Techlabs & Argonne National Laboratory*)
Ivan Mastovsky (*Massachusetts Institute of Technology*)
John G. Power (*Argonne National Laboratory*)
Jiahang Shao (*Argonne National Laboratory*)
Michael A. Shapiro (*Massachusetts Institute of Technology*)
Richard J. Temkin (*Massachusetts Institute of Technology*)
Eric E. Wisniewski (*Argonne National Laboratory*)
- 8-2: Recent Advances on Magnetically Insulated Line Oscillator (MILO)** (Page 77)
Drew A. Packard (*General Atomics*)
Y. Y. Lau (*University of Michigan*)
Emma N. Guerin (*University of Michigan*)
Chris J. Swenson (*University of Michigan*)
Stephen V. Langelotti (*University of Michigan*)
Abhijit Jassem (*University of Michigan*)

Dion Li (*University of Michigan*)
John W. Luginsland (*Air Force Office of Scientific Research*)
Nicholas M. Jordan (*University of Michigan*)
Ryan D. McBride (*University of Michigan*)
Ronald M. Gilgenbach (*University of Michigan*)

8-3: Dual Recirculating Planar Crossed-Field Amplifier (Page 79)

Christopher J. Swenson (*University of Michigan*)
Ryan Revolinsky (*University of Michigan*)
Emma N. Guerin (*University of Michigan*)
Nicholas M. Jordan (*University of Michigan*)
Ryan D. McBride (*University of Michigan*)
Y. Y. Lau (*University of Michigan*)
Ronald M. Gilgenbach (*University of Michigan*)

8-4: A Novel Scheme to Reduce the Electron Loss and Power Amplification in an Axial Virtual Cathode Oscillator (Page 81)

Sohail Mumtaz (*Kwangwoon University*)
Pradeep Lamichhane (*Kwangwoon University*)
Eun Ha Choi (*Kwangwoon University*)

8-5: Efficiency Enhancement for an S-Band Axial Vircator Using Five-Stage Two-Step Tapered Radiators (Page 83)

Patrizia Livreri (*University of Palermo & M.E.C.S.A.*)
Francesco Bennardo (*University of Palermo*)
Benito F. Tusa (*University of Palermo*)
Pietro Bia (*Elettronica S.p.A.*)
Marco Bartocci (*Elettronica S.p.A.*)
Antonio Manna (*Elettronica S.p.A.*)
Lorenzo Valletti (*University of Rome Tor Vergata*)
Franco Di Paolo (*M.E.C.S.A. & University of Rome Tor Vergata*)
Ernesto Limiti (*M.E.C.S.A. & University of Rome Tor Vergata*)

8-6: Cherenkov Maser Amplifier Nonlinear Analysis and Simulations (Page 85)

Paul Argyle (*Brigham Young University*)
Phillip Sprangle (*University of Maryland*)
Thomas Antonsen (*University of Maryland*)

Session 9: Cathodes II: Characterization

Ryan Jacobs (*University of Wisconsin*)

9-1: Impact of Patch Fields and Space Charge on the Shape of the Miram Curve (Page 87)

Dongzheng Chen (*University of Wisconsin-Madison*)
Ryan Jacobs (*University of Wisconsin-Madison*)
Dane Morgan (*University of Wisconsin-Madison*)
John Booske (*University of Wisconsin-Madison*)

9-2: Heterogeneous Cathode Work Function Measurement and Interpretation: A Case Study with SrVO₃ (Page 89)

Lin Lin (*University of Wisconsin-Madison*)
Ryan Jacobs (*University of Wisconsin-Madison*)
Dane Morgan (*University of Wisconsin-Madison*)
John Booske (*University of Wisconsin-Madison*)

9-3: Emission Imaging as Cathode Research Tool (Page 91)

Victor Katsap (*NuFlare Technology America, Inc.*)

9-4: Emission Testing Facility for Dispenser Cathodes (Page 93)

Scott Faulkner (*3M Technical Ceramics Inc.*)
Daniel Busbahr (*3M Technical Ceramics Inc.*)
Wayne Ohlinger (*Independent Consultant*)

9-5: M-Type Cathode Characterization Using a Kelvin Probe System in Vacuum Chamber (Page 95)

Antonio M. Mántica (*University of Kentucky*)
Michael J. Detisch (*University of Kentucky*)
T. John Balk (*University of Kentucky*)

9-6: High-efficiency S-band Axial Vircator (Page 97)

Lorenzo Valletti (*University of Rome Tor Vergata*)
Franco Di Paolo (*University of Rome Tor Vergata & M.E.C.S.A.*)
Pietro Bia (*Elettronica S.p.A.*)
Marco Bartocci (*Elettronica S.p.A.*)
Antonio Manna (*Elettronica S.p.A.*)
Patrizia Livreri (*M.E.C.S.A. & University of Palermo*)
Ernesto Limiti (*University of Rome Tor Vergata & M.E.C.S.A.*)

Session 11: Modeling - Emission

John Petillo (*Leidos*)

- 11-1: Predicting Secondary Electron Yield of Metals and Their Alloys Using First-Principles Input** (Page N/A)
Maciej P. Petillo (*University of Wisconsin*)
Ivana Matanovic (*University of New Mexico*)
Raul E. Gutierrez (*University of New Mexico*)
Edl Schamiloglu (*University of New Mexico*)
John Booske (*University of Wisconsin*)
Dane Morgan (*University of Wisconsin*)
- 11-2: Shock-Induced Current due to Charge Impact on a Conducting Surface** (Page 101)
Dion Li (*University of Michigan*)
P. Wong (*Michigan State University*)
D. Chernin (*Leidos Inc.*)
Y. Y. Lau (*University of Michigan*)
- 11-3: Quantum Efficiency of Photoemission from Biased Metal Surfaces with Lasers from UV to NIR** (Page 103)
Yang Zhou (*Michigan State University*)
Peng Zhang (*Michigan State University*)
- 11-4: Characterization of a Duo-emitter Thermionic Diode** (Page 106)
Roelof Erasmus Groenewald (*Modern Electron*)
Daniel Velazquez (*Modern Electron*)
Peter Scherpelz (*Modern Electron*)
- 11-5: High-Fidelity Particle-in-Cell Simulations of Thermionic Converters** (Page 108)
Peter Scherpelz (*Modern Electron*)
Roelof E. Groenewald (*Modern Electron*)
Kevin Zhu (*Modern Electron*)
Michael Kieburtz (*Modern Electron*)
Nicholas Ruof (*Modern Electron*)
Phil Miller (*Intense Computing*)
Amanda M. Lietz (*Sandia National Laboratories*)
Matthew M. Hopkins (*Sandia National Laboratories*)

Session 12: V/W-band TWT

Diana Gamzina (*Stanford University*)

- 12-1: Paper Unavailable: Wideband Linearized E-Band MPM for Communication Applications** (Page NA)
Julia Meinen (*Stellant Systems, Inc.*)
Russell Martin (*Stellant Systems, Inc.*)
Kevin Berg (*Stellant Systems, Inc.*)
Michael Ramay (*Stellant Systems, Inc.*)
- 12-2: High Frequency Circuit for E-Band Sheet Beam TWT** (Page 110)
Shasha Qiu (*University of California, Davis*)
Yuan Zheng (*University of California, Davis*)
Neville C. Luhmann (*University of California, Davis*)
Diana Gamzina (*Elve Inc.*)
Mik Kuffel (*Elve Inc.*)
Michelle Gonzalez (*Elve Inc.*)
Blake Griffin (*Elve Inc.*)
- 12-3: Enhanced Linearity with Low AM-PM Conversion of InnoSys' Millimeter-Wave Solid-State Vacuum Device (SSVD™) Traveling-Wave Tubes** (Page 112)
Ruey-Jen Hwu (*InnoSys, Inc.*)
Jishi Ren (*InnoSys, Inc.*)
Tomas Gutierrez (*InnoSys, Inc.*)
Yun-Jan Hu (*InnoSys, Inc.*)
Larry P. Sadwick (*InnoSys, Inc.*)
- 12-4: Frozen Mode in Three-Way Waveguide Slow-Wave Structure for Three-Mode Synchronization** (Page 114)
Robert Marosi (*University of California, Irvine*)
Tarek Mealy (*University of California, Irvine*)
Alexander Figotin (*University of California, Irvine*)
Filippo Capolino (*University of California, Irvine*)
- 12-5: Investigation on E-Band High Efficiency Folded Wave-Guide Traveling-Wave Tube** (Page 116)
Li Fei (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Zicheng Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Yuhui Sun (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Hongxia Yi (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Xinwen Shang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

12-6: Regime of Traveling-Wave Amplification in an Oversized Circuit with Nonuniform Grating (Page 500)

Sergey S. Ponomarenko (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Yurii S. Kovshov (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Sergey A. Kishko (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Alexandr A. Likhachev (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Eduard M. Khutoryan (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Alexandr F. Zabrodskiy (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Sergey A. Vlasenko (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Victoria V. Stoyanova (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Alexei N. Kuleshov (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)

Session 13: Gyrotron Oscillators

Philipp Borchard

13-1: Progress on TH1509U 170GHZ 1MW European Gyrotron Program (Page 118)

Alberto Leggieri (*THALES*)
Ferran Albajar (*Fusion For Energy*)
Stefano Alberti (*Swiss Plasma Center*)
Andrea Allio (*Politecnico di Torino*)
Kostantinos A. Avramidis (*Karlsruhe Institute of Technology*)
David Bariou (*THALES*)
William Bin (*National Research Council*)
Alex Bruschi (*National Research Council*)
Ioannis Chelis (*National and Kapodistrian University*)
Rosa Difonzo (*Politecnico di Torino*)
Francesco Fanale (*National Research Council*)
Gerd Gantenbein (*Karlsruhe Institute of Technology*)
Tim Goodman (*Swiss Plasma Center EPFL*)
Jean-Philippe Hogge (*Swiss Plasma Center EPFL*)
Stefan Illy (*Karlsruhe Institute of Technology*)
Zisis Ioannidis (*National and Kapodistrian University*)
John Jelonnek (*Karlsruhe Institute of Technology*)
Jianbo Jin (*Karlsruhe Institute of Technology*)
George Latsas (*National and Kapodistrian University*)
François François (*THALES*)
Gerald Lietaer (*THALES*)
Christophe Lievin (*THALES*)
Rodolphe Marchesin (*THALES*)
Tomasz Rzesnicki (*Karlsruhe Institute of Technology*)
Francisco Sanchez (*Fusion For Energy*)
Laura Savoldi (*Politecnico di Torino*)
Sebastian Stanculovic (*Karlsruhe Institute of Technology*)
Ioannis Tigelis (*National and Kapodistrian University*)
Humberto Torreblanca (*Swiss Plasma Center EPFL*)
Manfred Thumm (*Karlsruhe Institute of Technology*)

13-2: Tunable Multi-Mirror Gyrotron for Direct Positronium Measurements (Page 120)

Vladislav Zaslavsky (*Institute of Applied Physics RAS*)
Mikhail Glyavin (*Institute of Applied Physics RAS*)
Irina Zotova (*Institute of Applied Physics RAS*)

13-3: Stepped Sub-THz Gyrotron Cavity with Improved Output Mode Purity (Page 122)

Dietmar Wagner (*Max-Planck-Institute for Plasma Physics*)
Manfred Thumm (*Karlsruhe Institute of Technology*)

13-4: Design of a Two-Stage Depressed Collector for Continuous Wave Operation of MW-Class Gyrotrons (Page N/A)

Benjamin Ell (*Karlsruhe Institute of Technology (KIT-IHM)*)
Chuanren Wu (*Karlsruhe Institute of Technology (KIT-IHM)*)
Gerd Gantenbein (*Karlsruhe Institute of Technology (KIT-IHM)*)
Stefan Illy (*Karlsruhe Institute of Technology (KIT-IHM)*)
Ioannis Gr. Pagonakis (*Karlsruhe Institute of Technology (KIT-IHM)*)
Tomasz Rzesnicki (*Karlsruhe Institute of Technology (KIT-IHM)*)
Sebastian Stanculovic (*Karlsruhe Institute of Technology (KIT-IHM)*)
Manfred Thumm (*Karlsruhe Institute of Technology (KIT-IHM)*)
Jörg Weggen (*Karlsruhe Institute of Technology (KIT-IHM)*)
John Jelonnek (*Karlsruhe Institute of Technology (KIT-IHM)*)

13-5: Paper Unavailable: Fabrication of 110GHz, 1MW Gyrotron with Direct Coupled Output (Page NA)

Robert Lawrence Ives (*Calabazas Creek Research, Inc.*)
David Marsden (*Calabazas Creek Research, Inc.*)
George Collins (*Calabazas Creek Research, Inc.*)
Jeffrey Neilson (*Lexam Research*)

James Anderson (*General Atomics*)

Kurt Zeller (*General Atomics*)

Session 14: Components, Facilities, and Processes

- 14-1: Demonstration of a 250GHz Quasi-Optical Ring Resonator/Pulse Compressor with High Gain** (Page N/A)
Jeremy Genoud (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
Elliot L. Claveau (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
Julian F. Picard (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
Guangjiang Li (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
Sudheer K. Jawla (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
Michael A. Shapiro (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
Richard J. Temkin (*Plasma Science and Fusion Center, Massachusetts Institute of Technology*)
- 14-2: C-Band Engineering Test Facility: A New High Gradient Breakdown Test Stand at LANL** (Page 128)
Evgenya I. Simakov (*Los Alamos National Laboratory*)
Dmitry V. Gorelov (*Los Alamos National Laboratory*)
Mark E. Middendorf (*Los Alamos National Laboratory*)
Mitchell E. Schneider (*Los Alamos National Laboratory*)
Tsuyoshi Tajima (*Los Alamos National Laboratory*)
MD Rashed Alam Zuboraj (*Los Alamos National Laboratory*)
- 14-3: Improved Multipactor Coatings Using Atomic Layer Deposition** (Page 130)
R. Lawrence Ives (*Calabazas Creek Research, Inc.*)
Christopher Oldham (*VaporPulse Technologies, Inc.*)
Mark Gilmore (*University of New Mexico*)
Ian Kern (*University of New Mexico*)
- 14-4: Preliminary Optimum Design of Process Parameters of Transient Liquid Phase Welding** (Page 132)
Guangjiang Yuan (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Wei Song (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Xin Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Yuhui Sun (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Jun He (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Zhiqiang Zhang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
- 14-5: Multi-Modes OAM Beam Generation Based on Reflective Holographic Technology** (Page 134)
Jiahao Qian (*University of Electronic Science and Technology of China*)
Minxing Wang (*University of Electronic Science and Technology of China*)
Yuhang Peng (*University of Electronic Science and Technology of China*)
You Li (*University of Electronic Science and Technology of China*)
Huan Gao (*University of Electronic Science and Technology of China*)
Zewei Wu (*University of Electronic Science and Technology of China*)

Session 15: Cold Cathodes

Rahan Kapadia (*University of Southern California*)

- 15-1: High Current p-i-n-nanoC Diamond Diodes for Electron Emission** (Page 136)
Franz A. Koeck (*Arizona State University*)
Harshad Surdi (*Arizona State University*)
Robert J. Nemanich (*Arizona State University*)
- 15-2: High Field-Emission Performance of Carbon Nanotube Bundle Field Emitters** (Page 138)
Jiayu Alexander Liu (*University of Waterloo*)
Jiaqi Wang (*University of Waterloo*)
Yonghai Sun (*University of Waterloo*)
Siyuan Chen (*University of Waterloo*)
Zhemiao Xie (*University of Waterloo*)
John T.W. Yeow (*University of Waterloo*)
- 15-3: Hot Electron Laser-Assisted Cathode Using Electronically Tunable Negative Electron Surfaces: Prospects and Challenges** (Page 140)
Subrata Das (*University of Southern California*)
Hyun Uk Chae (*University of Southern California*)
Ragib Ahsan (*University of Southern California*)
Rehan Kapadia (*University of Southern California*)
- 15-4: Field-Emission Characteristics of GaN Arrays** (Page 142)
Ranajoy Bhattacharya (*Boise State University*)
Pao-Chuan Shih (*Massachusetts Institute of Technology*)
Tomás Palacios (*Massachusetts Institute of Technology*)
Jim Browning (*Boise State University*)
- 15-5: Vacuum-Channel Field-Emission Transistor Array with Comb-Type Gate** (Page 144)
Hairong Lai (*Southeast University*)
Lei Xu (*Southeast University*)

Ningfeng Bai (*Southeast University*)
Changshen Shen (*Southeast University*)
Hehong Fan (*Southeast University*)
Zhaofu Chen (*Southeast University*)
Xiaohan Sun (*Southeast University*)

Session 16: Modeling - Methods

Eric Nelson (*Los Alamos National Laboratory*)

16-1: Adjoint Approach to Optimization of TWT Design (Page 146)

Alexander N. Vlasov (*US Naval Research Laboratory*)
Thomas M. Antonsen, Jr. (*Leidos Inc.*)
David P. Chernin (*Leidos Inc.*)
Igor A. Chernyavskiy (*US Naval Research Laboratory*)

16-2: Paper Unavailable: Development and Application of Adjoint Methods in the Presence of Static Electric and Magnetic Fields in the MICHELLE Beam Optics Code (Page NA)

John Petillo (*Leidos*)
Thomas Antonsen (*University of Maryland*)
Brian Beaudoin (*University of Maryland*)
Serguei Ovtchinnikov (*Leidos*)
Philipp Borchard (*Dymenso*)
Kyle Kuhn (*University of Maryland*)
Aaron Jensen (*Leidos*)

16-3: Shapelets with Optimization in Beam Optics Analyzer (Page 148)

Thuc Bui (*Calabazas Creek Research Inc.*)
Chris McKenzie (*Oxford Instruments X-ray Technology, Inc.*)
Robert Lawrence Ives (*Calabazas Creek Research Inc.*)

16-4: Enhanced Transmission Phenomenon of Subwavelength-Hole Arrays Under Electron Beam Excitation (Page 150)

Shuhe Zhang (*University of Electronic Science and Technology of China*)
Ping Zhang (*University of Electronic Science and Technology of China*)
Shu Jing (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Lin Meng (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

16-5: Inverse Design of Folded-Waveguide SWS with Bidirectional Fully Connected Neural Network (Page 152)

Yijun Zhu (*Southeast University*)
Ningfeng Bai (*Southeast University*)
Xiaohan Sun (*Southeast University*)
Pan Pan (*Beijing Vacuum Electronics Institution*)
Jun Cai (*Beijing Vacuum Electronics Institution*)
Jinjun Feng (*Beijing Vacuum Electronics Institution*)

Session 17: Electron Gun Development

John Petillo (*Leidos*)

17-1: Direct Comparison of Analytically Derived Fedosov Solution with Numerical Simulations of Intense Relativistic Electron-Beam Generation in Magnetically Insulated Coaxial Diode of SINUS-6 High-Current Electron-Beam Accelerator (Page 154)

Andrey D. Andreev (*University of New Mexico*)
K. Nusrat Islam (*University of New Mexico*)
Edl Schamiloglu (*University of New Mexico*)

17-2: Two Benchmark Simulations of Intense Annular High-Current Electron Beam Generation, Acceleration, and Transport in a Smooth Cylindrical Waveguide Driven by the SINUS-6 Accelerator at UNM (Page 156)

K. Nusrat Islam (*University of New Mexico*)
Andrey D. Andreev (*University of New Mexico*)
Edl Schamiloglu (*University of New Mexico*)

17-3: Design of an Electron Gun and PPM Focusing System for Low-Voltage W-Band TWTs (Page 158)

Huanli Ji (*Beijing Vacuum Electronics Research Institute*)
Jinsheng Yang (*Beijing Vacuum Electronics Research Institute*)
Ji Chen (*Beijing Vacuum Electronics Research Institute*)
Jun Cai (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)

17-4: Design and Optimization of a Sheet-Beam Electron Gun for Terahertz SDV-TWTs (Page 160)

Ying Shang (*Shenzhen University & Beihang University*)
Guoxiang Shu (*Shenzhen University & Beihang University*)
Zhaolun Liang (*Shenzhen University & Beihang University*)

Kaihang Huang (*Shenzhen University & Beihang University*)

Wenlong He (*Shenzhen University & Beihang University*)

Cunjun Ruan (*Beihang University*)

17-5: Experiment of a Grid-Controlled Electron Gun for the Reversed Cherenkov Radiation Oscillator (Page 162)

Zhifang Lyu (*University of Electronic Science and Technology of China*)

Shengkun Jiang (*University of Electronic Science and Technology of China*)

Xuanming Zhang (*University of Electronic Science and Technology of China*)

Chuanhao Wang (*University of Electronic Science and Technology of China*)

Dejun Jin (*Nanjing Sanle Microwave Technology Development Co., Ltd.*)

Zhanliang Wang (*University of Electronic Science and Technology of China*)

Yubin Gong (*University of Electronic Science and Technology of China*)

Zhaoyun Duan (*University of Electronic Science and Technology of China*)

Session 18: TWT

Rich Kowalczyk (*Multibeam*)

18-1: The Hot Test of High-Power Ku/K Dual-Band TWT (Page 164)

Hongxia Yi (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Fei Li (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Xinwen Shang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Liu Xiao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

18-2: Fabrication of Traveling-Wave Tube Amplifier Circuit using Elastic Averaging Precision Alignment Techniques (Page 166)

Philipp Borchard (*Dymenso LLC*)

Joseph Hoh (*Dymenso LLC*)

Kyle Kuhn (*University of Maryland*)

Brian Beaudoin (*University of Maryland*)

Thomas Antonsen Jr. (*University of Maryland*)

John Petillo (*Leidos Corporation*)

Aaron Jensen (*Leidos Corporation*)

18-3: Paper Unavailable: 500-Watt, 4 to 10GHz, Meander-Line Elliptical Beam Traveling-Wave Tube (Page NA)

Xiaoling Zhai (*Stellant Systems, Inc.*)

James Michael Martin (*Stellant Systems, Inc.*)

Alexander May (*Stellant Systems, Inc.*)

Sean Douglass (*Stellant Systems, Inc.*)

Russell Martin (*Stellant Systems, Inc.*)

18-4: Paper Unavailable: 140-Watt, 50% Efficient Ku-Band Microwave Power Module for Improved Airborne Data Link Range Capability (Page NA)

Sean Douglass (*Stellant Systems, Inc.*)

Julia Meinen (*Stellant Systems, Inc.*)

Thomas Hargreaves (*Stellant Systems, Inc.*)

Dan Springmann (*Stellant Systems, Inc.*)

18-5: Development of C/X/Ku-Band High-Power Helix Traveling-Wave Tube (Page 168)

Zhun Xu (*Nanjing Sanle Group Company Ltd.*)

Yuan Wang (*Nanjing Sanle Group Company Ltd.*)

Xiaoping He (*Nanjing Sanle Group Company Ltd.*)

Hongyan Yang (*Nanjing Sanle Group Company Ltd.*)

Wengjing Zou (*Nanjing Sanle Group Company Ltd.*)

Daxi Ji (*Nanjing Sanle Group Company Ltd.*)

Tian Liang (*Nanjing Sanle Group Company Ltd.*)

Hui Xu (*Nanjing Sanle Group Company Ltd.*)

Yang Chen (*Nanjing Sanle Group Company Ltd.*)

Gangxiong Wu (*Nantong University*)

Session 19: Magnetrons and Fast-Wave Components

Nicholas Jordan (*University of Michigan*)

19-1: 8MW Light-Weight, High-Power, Vane and Strap Magnetron (Page 170)

Michael S. Worthington (*Stellant Systems*)

John C. Cipolla (*Stellant Systems*)

Hugh Shultz (*Stellant Systems*)

Joe Musheno (*Stellant Systems*)

Bethany Maihle (*Stellant Systems*)

Todd Hansen (*Stellant Systems*)

19-2: Low-Voltage Magnetrons with Two Energy Outputs (Page 172)

Gennadiy I. Churyumov (*O.Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Science of Ukraine*)

Shuang Qiu (*Tsinghua University*)
Nan-nan Wang (*Harbin Institute of Technology*)

19-3: ICEPIC Simulations of Microwave Power Increase from 2.45GHz Magnetron (Page 174)

Andrey D. Andreev (*University of New Mexico*)
Edl Schamiloglu (*University of New Mexico*)
Sean M. Torrez (*Physical Sciences Inc.*)
Brendan E. Nunan (*Physical Sciences Inc.*)

19-4: Fabrication and Characterization of TE₆₂ Mode Generator for W-Band Gyrotron (Page 176)

Nani Medicherla (*MTRDC, DRDO*)
Naveen Sharma (*MTRDC, DRDO*)
R. Seshadri (*MTRDC, DRDO*)
Machavaram V. Kartikeyan (*IIT TP*)

19-5: Higher Order Mode Generator Direct-Coupled with a Dielectric Rod Waveguide at W-band (Page N/A)

TaeGyu Han (*Ulsan National Institute of Science and Technology*)
JinHo Lim (*The University of Suwon*)
EunMi Choi (*Ulsan National Institute of Science and Technology*)

Session 20: Microfabricated THz Regime Sources

Alan Cook (*NRL*)

20-1: 0.34THz Continuous-Wave Microwave Power Module (Page 180)

Pan Pan (*Beijing Vacuum Electronics Research Institute*)
Lin Zhang (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)

20-2: Design and Fabrication of Devices for Characterization of Cold Parameters in Self-Assembled Metal Helices (Page 182)

Divya J. Prakash (*University of New Mexico*)
Marcos Martinez-Argudo (*University of Wisconsin-Madison*)
Shiva Hajitabarmarznaki (*University of Wisconsin-Madison*)
Max G. Lagally (*University of Wisconsin-Madison*)
Daniel W. van der Weide (*University of Wisconsin-Madison*)
Francesca Cavallo (*University of New Mexico*)

20-3: 3D Study of the Hybrid Bulk-Surface Eigen Modes in THz Cherenkov Oscillator (Page 502)

Eduard M. Khutoryan (*O. Ya. Usikov Institute for Radiophysics and Electronics, NAS of Ukraine*)
Alexei N. Kuleshov (*O. Ya. Usikov Institute for Radiophysics and Electronics, NAS of Ukraine*)
Sergey S. Ponomarenko (*O. Ya. Usikov Institute for Radiophysics and Electronics, NAS of Ukraine*)
Kostyantyn A. Lukin (*O. Ya. Usikov Institute for Radiophysics and Electronics, NAS of Ukraine*)
Yoshinori Tatematsu (*Research Center for Development of Far-Infrared Region, University of Fukui*)
Masahiko Tani (*Research Center for Development of Far-Infrared Region, University of Fukui*)

20-4: Research on G-Band Extended Interaction Klystron with Broad Bandwidth and High Output Power (Page 184)

Feng Zhang (*Beihang University*)
Yaqi Zhao (*Beihang University*)
Cunjun Ruan (*Beihang University*)

20-5: Design of a High-Frequency System for a Dual-Mode 220GHz Sheet-Beam TWT (Page 186)

Jingcong He (*Shenzhen University*)
Guoxiang Shu (*Shenzhen University*)
Jiacai Liao (*Shenzhen University*)
Junchen Ren (*Shenzhen University*)
Zhiwei Chang (*Shenzhen University*)
Jujian Lin (*Shenzhen University*)
Guangxin Lin (*Shenzhen University*)
Qi Li (*Shenzhen University*)
Wenlong He (*Shenzhen University*)

Session 21: Multipactor

Dev Palmer (*Defense Advanced Research Projects Agency*)

21-1: Susceptibility of Single-Surface Multipactor Driven by Non-sinusoidal Transverse RF Electric Field (Page 188)

De-Qi Wen (*Michigan State University*)
Asif Iqbal (*Michigan State University*)
Corey Scutt (*Michigan State University*)
Peng Zhang (*Michigan State University*)
John P. Verboncoeur (*Michigan State University*)

21-2: Investigation of Two-Surface Multipactor with Two-Frequency RF Fields and Space-Charge Effects (Page 190)

Asif Iqbal (*Michigan State University*)

John Verboncoeur (*Michigan State University*)

Peng Zhang (*Michigan State University*)

21-3: Multipactor Susceptibility and Suppression in Microstripline Transmission Line (Page 192)

Mirhamed Mirmozafari (*University of Wisconsin-Madison*)

Nader Behdad (*University of Wisconsin-Madison*)

John Booske (*University of Wisconsin-Madison*)

21-4: Experiments on Multipactor Suppression in a Coaxial Transmission Line (Page 194)

Stephen V. Langelotti (*University of Michigan*)

Nicholas M. Jordan (*University of Michigan*)

Y.Y. Lau (*University of Michigan*)

Ronald M. Gilgenbach (*University of Michigan*)

Session 22: Space TWT

Lawrence Ives (*CCR*)

22-1: High-Power High-Frequency Space Traveling-Wave Tube (Page 196)

Frédéric André (*THALES AVS France*)

Sophie Kohler (*THALES AVS France*)

Justin Demory (*THALES AVS France*)

Jean Gastaud (*THALES AVS France*)

Jérôme Puech (*CNES*)

Cedric Tottolo (*CNES*)

Roberto Dionisio (*ESA/ESTEC*)

22-2: Paper Unavailable: Space 35-Watt Q-Band Linearized Traveling-Wave Tube Amplifier Flight Set (Page NA)

Neal Robbins (*Stellant Systems, Inc.*)

Xiaoling Zhai (*Stellant Systems, Inc.*)

William Menninger (*Stellant Systems, Inc.*)

Eddie Rodgers (*Stellant Systems, Inc.*)

22-3: K-Band Helix TWT for NASA Artemis Project (Page 198)

Miki Nishioka (*NEC Network and Sensor Systems, Ltd.*)

Naofumi Kosugi (*NEC Network and Sensor Systems, Ltd.*)

Daiki Matsumoto (*NEC Network and Sensor Systems, Ltd.*)

Takatsugu Munehiro (*NEC Network and Sensor Systems, Ltd.*)

Tetsuo Machida (*NEC Network and Sensor Systems, Ltd.*)

Yoshinori Mori (*NEC Network and Sensor Systems, Ltd.*)

Kenji Nakajima (*NEC Network and Sensor Systems, Ltd.*)

Travis Stewart (*NEC Corporation of America*)

22-4: Dual Mini-TWT for Active Array Antenna (Page 200)

Frédéric André (*Thales AVS/MIS*)

Jean-Claude Racamier (*Thales AVS/MIS*)

Gaël Derven (*Thales AVS/MIS*)

Amel Maati (*Thales AVS/MIS*)

Stephane Cholet (*Thales AVS/MIS*)

Antoine Mollard (*Thales AVS/MIS*)

Martin Hecht (*Thales Germany*)

Peter Ehret (*Thales Germany*)

Florian Corbel (*Thales AVS/MIS*)

Franck Beillevoire (*Thales AVS/MIS*)

22-5: Space Radar TWTs for New Applications (Page 202)

Ernst Bosch (*Thales Deutschland GmbH*)

Philip Birtel (*Thales Deutschland GmbH*)

Poster Session 1

1: TWT/Linear Beam

P1-1: A High-Current Field-Emission Triode with Nested Ring Gate and Anode (Page 204)

Lei Xu (*Southeast University*)

Hairong Lai (*Southeast University*)

Ningfeng Bai (*Southeast University*)

Xiaohan Sun (*Southeast University*)

P1-2: Analysis of Y₂O₃ Content to Thermionic Emission Behavior of Rare-Earth Oxide Cathode (Page 206)

Xingqi Wang (*Aerospace Information Research Institute*)

Xiaoxia Wang (*Aerospace Information Research Institute*)

Jirun Luo (*Aerospace Information Research Institute*)

Yun Li (*Aerospace Information Research Institute*)
Shikai Qi (*Jiujiang University*)

- P1-3: A High Average Efficiency Depressed Collector for a 140GHz Sheet-Beam Traveling-Wave Tube with Low Back-Streaming Current** (Page 208)
Zhaolun Liang (*Shenzhen University*)
Ying Shang (*Shenzhen University*)
Kaihang Huang (*Shenzhen University*)
Guoxiang Shu (*Shenzhen University*)
Cunjun Ruan (*Beihang University*)
Wenlong He (*Shenzhen University*)
- P1-4: A Method for Solving the Output Current of Traveling-Wave Tube Electron Gun** (Page 210)
Xu Zhang (*University of Electronic Science and Technology of China*)
WeiBo Huang (*China Academy of Space Technology (Xi'an)*)
YuLu Hu (*University of Electronic Science and Technology of China*)
LuanFeng Gao (*University of Electronic Science and Technology of China*)
Quan Hu (*University of Electronic Science and Technology of China*)
XiaoFang Zhu (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
ZhongHai Yang (*University of Electronic Science and Technology of China*)
- P1-6: Sc₂O₃-Y₂O₃ Co-Doped W Matrix Dispenser Cathode** (Page 212)
Leqi Liu (*Beijing University of Technology*)
Yunfei Yang (*Beijing University of Technology*)
Jinshu Wang (*Beijing University of Technology*)
Wei Liu (*Beijing University of Technology*)
Zhikai Hu (*Beijing University of Technology*)
- P1-7: Simulation of Multiple Electron Beam Focusing Electron Optical System by MTSS** (Page 214)
Peng Tian (*University of Electronic Science and Technology of China*)
Quan Hu (*University of Electronic Science and Technology of China*)
Lizheng Zhao (*Beijing Vacuum Electronics Research Institute*)
Xiaofang Zhu (*University of Electronic Science and Technology of China*)
YuLu Hu (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
- P1-8: Paper Unavailable: Trajectory Analysis and Experimental Set-Up for Studying Beam Misalignments in THz Multibeam Gyrotrons** (Page NA)
Eduard Khutoryan (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Alexei Kuleshov (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Sergey Ponomarenko (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Sergey Vlasenko (*O. Ya. Usikov Institute for Radiophysics and Electronics, NASU*)
Ilya Bandurkin (*Institute of Applied Physics, Russian Academy of Sciences*)
Mikhail Glyavin (*Institute of Applied Physics, Russian Academy of Sciences*)
Vladimir Manuilov (*Institute of Applied Physics, Russian Academy of Sciences*)
Irina Zotova (*Institute of Applied Physics, Russian Academy of Sciences*)
Masafumi Fukunari (*FIR Center, University of Fukui*)
Seitaro Mitsudo (*FIR Center, University of Fukui*)
- P1-9: 340GHz EIK Electron-Optical System with High Compression Ratio** (Page 216)
Zixuan Su (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Hongru Li (*University of Electronic Science and Technology of China*)
Hongbin He (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)
Guo Guo (*University of Electronic Science and Technology of China*)
Tianzhong Zhang (*University of Electronic Science and Technology of China*)
Wenxin Liu (*Aerospace Information Research Institute, Chinese Academy of Science*)
W.X. Wang (*University of Electronic Science and Technology of China*)
Y.Y. Wei (*University of Electronic Science and Technology of China*)
- P1-10: First-Principle Calculation of Tin Oxide for Resistive-Wall Amplifier** (Page 218)
Zhaoyi Zhu (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Chenyang Li (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)

W. X. Wang (*University of Electronic Science and Technology of China*)
Y. Y. Wei (*University of Electronic Science and Technology of China*)

- P1-11: Dielectric Characteristic Measurement of Gyrotron Output Windows** (Page 220)
Ziye Chen (*Aerospace Information Research Institute (Chinese Academy of Sciences) & University of Chinese Academy of Sciences*)
Wei Guo (*Aerospace Information Research Institute (Chinese Academy of Sciences)*)
Xiaoxia Wang (*Aerospace Information Research Institute (Chinese Academy of Sciences)*)
Jirun Luo (*Aerospace Information Research Institute (Chinese Academy of Sciences) & University of Chinese Academy of Sciences*)
Chen Yang (*Aerospace Information Research Institute (Chinese Academy of Sciences)*)
Yu Fan (*Aerospace Information Research Institute (Chinese Academy of Sciences)*)
- P1-12: Design of a W-Band Sheet Beam Electron-Optics System and the Equivalent Theory of PCM** (Page 222)
HongBin He (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Hongru Li (*University of Electronic Science and Technology of China*)
Zixuan Su (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)
W.X. Wang (*University of Electronic Science and Technology of China*)
Y.Y. Wei (*University of Electronic Science and Technology of China*)
- P1-13: Modeling of a Sheet-Beam Electron Gun with High Compression Ratio** (Page 224)
Hongru Li (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Hongbin He (*University of Electronic Science and Technology of China*)
Zixuan Su (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)
W.X. Wang (*University of Electronic Science and Technology of China*)
Y.Y. Wei (*University of Electronic Science and Technology of China*)
- P1-14: Simulation Study of Annular Beam Electron Optical System Based on Carbon Nanotube Cold Cathode** (Page 226)
Yifan Zu (*University of Electronic Science and Technology of China*)
Xuesong Yuan (*University of Electronic Science and Technology of China*)
Xiaotao Xu (*University of Electronic Science and Technology of China*)
Qingyun Chen (*University of Electronic Science and Technology of China*)
Bin Wang (*University of Electronic Science and Technology of China*)
Hailong Li (*University of Electronic Science and Technology of China*)
Yang Yan (*University of Electronic Science and Technology of China*)
- P1-15: High-Temperature Contact Potential Difference and Thermionic Emission Analysis Using Kelvin Probe Systems** (Page 228)
Antonio Miguel Mantica (*University of Kentucky*)
Michael Jesse Detisch (*University of Kentucky*)
T. John Balk (*University of Kentucky*)
- P1-16: Low-Frequency Oscillator Circuit Using Si-Gated Field-Emitter Arrays** (Page 230)
Ranajoy Bhattacharya (*Boise State University*)
Robert Hay (*Boise State University*)
Mason Cannon (*Boise State University*)
Girish Rughoobur (*Massachusetts Institute of Technology*)
Nedeljko Karaulac (*Massachusetts Institute of Technology*)
Akintunde I. Akinwande (*Massachusetts Institute of Technology*)
Jim Browning (*Boise State University*)
- P1-17: Power Generation in a Pulsed Plasma Thermionic Diode Using a Barium Dispenser Cathode** (Page 232)
Daniel Merthe (*Modern Electron Corporation*)
Mark Stone (*Modern Electron Corporation*)
Roelof Groenewald (*Modern Electron Corporation*)
Eric Clark (*Modern Electron Corporation*)
Andrew Koch (*Modern Electron Corporation*)
- P1-18: Development of a Cryocooler-Driven RF Cavity Test Facility** (Page 234)
Paolo Pizzol (*Los Alamos National Laboratories*)
Tsuyoshi Tajima (*Los Alamos National Laboratories*)
Evgenya I. Simakov (*Los Alamos National Laboratories*)
Quinn R. Marksteiner (*Los Alamos National Laboratories*)

- P1-19: Photoinjector in IAP RAS: State and Prospects** (Page 236)
 Ilya Bandurkin (*Institute of Applied Physics, Russian Academy of Sciences*)
 Vladimir Bratman (*Institute of Applied Physics, Russian Academy of Sciences*)
 Alexey Gorbachev (*Institute of Applied Physics, Russian Academy of Sciences*)
 Kirill Mineev (*Institute of Applied Physics, Russian Academy of Sciences*)
 Nikolai Peskov (*Institute of Applied Physics, Russian Academy of Sciences*)
 Andrei Savilov (*Institute of Applied Physics, Russian Academy of Sciences*)
 Alexander Vikharev (*Institute of Applied Physics, Russian Academy of Sciences*)
- P1-20: Observations of Temperature-Induced Material Transformations in Impregnated Scandate Cathode Samples During *in situ* Heating in the SEM** (Page 238)
 Huanhuan Bai (*University of Kentucky*)
 T. John Balk (*University of Kentucky*)
- P1-21: M-Type Cathode Emission Degradation Simulation Based on Surface-Coating Degradation Mechanisms** (Page 240)
 Hehong Fan (*Southeast University*)
 Wenrui Sun (*Southeast University*)
 Shuai Tang (*Southeast University*)
 Ying Wei (*Beijing Vacuum Electronics Research Institute*)
 Xiaohan Sun (*Southeast University*)
- P1-22: Theory Description and Verification on 0.34THz Circular Beam** (Page 242)
 Yiyang Su (*BEIHANG University*)
 Cunjun Ruan (*BEIHANG University*)
 Feng Zhang (*BEIHANG University*)
- P1-23: Correlation of Emission Characteristics of Dispenser Cathodes with Structure of Aluminates** (Page 244)
 Haoyue Li (*University of Electronic Science and Technology of China*)
 Qiang Zheng (*University of Electronic Science and Technology of China*)
 Yafen Shang (*University of Electronic Science and Technology of China*)
 Jianxun Wang (*University of Electronic Science and Technology of China*)
 Yong Luo (*University of Electronic Science and Technology of China*)

2: Gyrotrons and Magnetrons Posters

- P2-1: Design of an Ultra-Broadband Meta-Surface Output Window for W-Band Confocal Gyro-Amplifiers** (Page 246)
 Yibin Sun (*University of Electronic Science and Technology of China*)
 Yelei Yao (*University of Electronic Science and Technology of China*)
 Wenzhang Li (*University of Electronic Science and Technology of China*)
 Wenqi Gao (*University of Electronic Science and Technology of China*)
 Guo Liu (*University of Electronic Science and Technology of China*)
 Jianxun Wang (*University of Electronic Science and Technology of China*)
 Yong Luo (*University of Electronic Science and Technology of China*)
- P2-2: Study on 220GHz Confocal Gyro-Amplifier Circuits with Wedges-Loaded Mirrors** (Page 248)
 Wenzhang Li (*University of Electronic Science and Technology of China*)
 Yelei Yao (*University of Electronic Science and Technology of China*)
 Jianxun Wang (*University of Electronic Science and Technology of China*)
 Yong Luo (*University of Electronic Science and Technology of China*)
- P2-3: Experimental Test of the Field-Emission Cathode for Low-Power Gyrotrons** (Page 250)
 Evgeny Taradaev (*Peter the Great St. Petersburg Polytechnic University*)
 Gennadii Sominskii (*Peter the Great St. Petersburg Polytechnic University*)
 Mikhail Glyavin (*IAP RAS*)
- P2-4: Experimental Test Results of 170GHz Gyrotron-Driver for Frequency Locked MW Gyrotron** (Page 252)
 Gregory Denisov (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Andrey Kuftin (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Alexey Chirkov (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Mikhail Bakulin (*GYCOM Ltd.*)
 Elena Soluyanov (*GYCOM Ltd.*)
 Eugeny Tai (*GYCOM Ltd.*)
 German Golubyatnikov (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Mikhail Morozkin (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Boris Movshevich (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Mikhail Glyavin (*Institute of Applied Physics of the Russian Academy of Sciences*)
- P2-5: Design and Measurement of a Novel Overmoded TE₀₁ Mode Converter for a Rectangular Gyro-TWT** (Page 254)
 Chaoxuan Lu (*University of Electronic Science and Technology of China*)
 Wei Jiang (*University of Electronic Science and Technology of China*)
 Zewei Wu (*University of Electronic Science and Technology of China*)

Jianxun Wang (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Youlei Pu (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)

P2-6: Design of High-Power S-Band Pulsed Magnetron for Linear Accelerator System (Page 256)

Patibandla Anilkumar (*Indian Institute of Technology Guwahati*)
Dobbidi Pamu (*Indian Institute of Technology Guwahati*)
Tapeswar Tiwari (*Centre for High Power Microwave Tube and Component Technology, SAMEER Guwahati*)

P2-7: Concept of a Frequency-Tunable Sub-THz Gyrotron Based on the Partial Reflection of the Output Radiation from an External Mirror (Page 258)

Ilya Bandurkin (*Institute of Applied Physics, Russian Academy of Sciences*)
Yuriy Kalynov (*Institute of Applied Physics, Russian Academy of Sciences*)
Nikolay Peskov (*Institute of Applied Physics, Russian Academy of Sciences*)
Andrei Savilov (*Institute of Applied Physics, Russian Academy of Sciences*)
Ivan Osharin (*Institute of Applied Physics, Russian Academy of Sciences*)
Dmitriy Shchegolkov (*Institute of Applied Physics, Russian Academy of Sciences*)

P2-8: Electron-Optic Systems for Gyrotrons with Multi-Mirror Cavities (Page 260)

Mikhail Glyavin (*Institute of Applied Physics of the Russian Academy of Sciences*)
Kseniya Leshcheva (*Institute of Applied Physics of the Russian Academy of Sciences*)
Vladimir Manuilov (*Institute of Applied Physics of the Russian Academy of Sciences*)

P2-9: Study on a 140GHz,170GHz Dual-Frequency Gyrotron for Plasma Heating (Page 262)

Yichi Zhang (*Beijing Vacuum Electronics Research Institute*)
Xu Zeng (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)

P2-10: Design of a Quasi-Optical Launcher for a 135/170GHz, Dual-Frequency Gyrotron (Page 264)

Pu Chen (*Beijing Vacuum Electronics Research Institute*)
Xu Zeng (*Beijing Vacuum Electronics Research Institute*)
Yichi Zhang (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)

P2-11: Research on Low-Frequency Oscillations Caused by Outgassing from Attenuated Dielectric (Page 266)

Yuhao Song (*University of Electronic Science and Technology of China*)
Wei Jiang (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Yu Wang (*University of Electronic Science and Technology of China*)
Dajun Zhao (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)

P2-12: High-Power RF Loads for Gyrotrons (Page N/A)

Lawrence Ives (*Calabazas Creek Research, Inc.*)
Thuc Bui (*Calabazas Creek Research, Inc.*)
Thomas Habermann (*Calabazas Creek Research, Inc.*)
David Marsden (*Calabazas Creek Research, Inc.*)
George Collins (*Calabazas Creek Research, Inc.*)
Jeff Neilson (*Lexam Research*)
Tim Horn (*N.C. State University*)
Christopher Rock (*N.C.State University*)

P2-13: Frequency Self-Modulation in the W-Band Gyrotron Traveling-Wave Tube Hot Test (Page 270)

Yu Wang (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Wei Jiang (*University of Electronic Science and Technology of China*)
Jianxun Wang (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)

P2-14: Comparison of Excitation Voltage-Waveforms for Millimeter-Wave Magnetron (Page 272)

Minsheng Song (*University of Electronic Science and Technology of China*)
Yu Qin (*University of Electronic Science and Technology of China*)
Haixia Liu (*University of Electronic Science and Technology of China*)
Yin Yong (*University of Electronic Science and Technology of China*)
Lin Meng (*University of Electronic Science and Technology of China*)
Bin Wang (*University of Electronic Science and Technology of China*)
Hailong Li (*University of Electronic Science and Technology of China*)

P2-15: Main Approaches to Suppress Velocity Spread in the Gyrotron Helical Electron Beams (Page 274)

Vladimir Manuilov (*Institute of Applied Physics of the Russian Academy of Sciences*)

P2-16: Paper Unavailable: Design of High-Efficiency Megawatt Power Level X-Band Coaxial Magnetron (Page NA)

Sandeep Kumar Vyas (*Shree Chavo Veero Girls PG College Bagar*)

- P2-17: Frequency Tuning in a Gyrotron with a Cavity of Variable Cross Section** (Page 276)
 Ilya Bandurkin (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Yuriy Kalynov (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Ivan Osharin (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Andrei Savilov (*Institute of Applied Physics of the Russian Academy of Sciences*)
 Dmitriy Shchegolkov (*Institute of Applied Physics of the Russian Academy of Sciences*)
- P2-18: Multi-Physical Parameter Particle Simulation Analysis of Ka-Band Gyro-TWT** (Page 278)
 Yong Zhong (*Beijing Vacuum Electronics Research Institute*)
 Efeng Wang (*Beijing Vacuum Electronics Research Institute*)
- P2-19: Quasi-analytical Theory of Gyro-BWO with a Zigzag Electrodynamic System** (Page 280)
 Ekaterina Novak (*Institute of Applied Physics, Russian Academy of Sciences*)
 Sergey Samsonov (*Institute of Applied Physics, Russian Academy of Sciences*)
 Andrei Savilov (*Institute of Applied Physics, Russian Academy of Sciences*)
- P2-20: Preliminary Study of Array Magnetrons Phase-locking Performance Measurement based on Perturbation Theory** (Page 282)
 Yu Qin (*University of Electronic Science and Technology of China*)
 Yong Yin (*University of Electronic Science and Technology of China*)
 Minsheng Song (*University of Electronic Science and Technology of China*)
 Haixia Liu (*University of Electronic Science and Technology of China*)
 Bin Wang (*University of Electronic Science and Technology of China*)
 Hailong Li (*University of Electronic Science and Technology of China*)
 Lin Meng (*University of Electronic Science and Technology of China*)
- P2-21: Design of Quasi-Optical Microwave Pulse Compressor with Laser-Driven GaAs Switch** (Page 284)
 Gregory Denisov (*IAP RAS*)
 Alexey Palitsin (*IAP RAS*)
 Dmitriy Sobolev (*IAP RAS*)
 Sergey Morozov (*IPM RAS*)
 Vladimir Parshin (*IAP RAS*)
 Mikhail Glyavin (*IAP RAS*)
- P2-22: Modified Spectral Approach with Linearized Boundary Condition for Gyrotron Cavity Modeling** (Page 286)
 Andrey G. Rozhnev (*Saratov Branch Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
 Maria M. Melnikova (*Saratov Branch Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
 Nikita M. Ryskin (*Saratov Branch Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
- P2-23: Concept of Compact Millimeter Wavelength Range Gyrotron-based Active Coherent Radar for the Moon and Space Debris Detection** (Page 288)
 Alexander Tsvetkov (*Institute of Applied Physics, Russian Academy of Sciences*)
 Lev Lubyako (*Institute of Applied Physics, Russian Academy of Sciences*)
 Egor Gospodchikov (*Institute of Applied Physics, Russian Academy of Sciences*)
- P2-24: Paper Unavailable: Influence of Non-Resonant Reflection on Mode Competition in a Megawatt-Power Gyrotron** (Page NA)
 Vladimir Lazarevich Bakunin (*Institute of Applied Physics of Russian Academy of Sciences*)
 Grigory Gennadievich Denisov (*Institute of Applied Physics of Russian Academy of Sciences*)
 Yulia Vladimirovna Novozhilova (*Institute of Applied Physics of Russian Academy of Sciences*)
- P2-25: Enhanced Bandwidth for Gyro-Amplifiers Using Periodic Structures** (Page N/A)
 Brenda Scheufele (*University of Maryland*)
 Thomas Antonsen Jr. (*University of Maryland*)
 Phillip Sprangle (*University of Maryland*)
- P2-26: Interaction of an Electromagnetic Wave with a Counter-Propagating Electron Beam Under the Condition of Cyclotron Resonance Absorption: Nonlinear Periodic Waves, Modulation Instability, and Generation of Solitons** (Page 292)
 Alena Aleksandrovna Rostuntsova (*Saratov State University & Institute of Applied Physics RAS & Saratov State University*)
 Nikita Mikhailovich Ryskin (*Saratov Branch, Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
- P2-27: Oversized Electrodynamic Systems for Powerful Long-Pulse Sub-THz/THz Band FEL: Simulations and "Cold" Tests** (Page 294)
 Nikolai Yu. Peskov (*Institute of Applied Physics Russian Academy of Sciences*)
 Vladimir I. Belousov (*Institute of Applied Physics Russian Academy of Sciences*)
 Naum S. Ginzburg (*Institute of Applied Physics Russian Academy of Sciences*)
 Yuliya S. Oparina (*Institute of Applied Physics Russian Academy of Sciences*)
 Andrey V. Savilov (*Institute of Applied Physics Russian Academy of Sciences*)

Dmitry I. Sobolev (*Institute of Applied Physics Russian Academy of Sciences*)
Vladislav Yu. Zaslavsky (*Institute of Applied Physics Russian Academy of Sciences*)
Andrey V. Arzhannikov (*Budker Institute of Nuclear Physics Russian Academy of Sciences*)
Danila A. Nikiforov (*Budker Institute of Nuclear Physics Russian Academy of Sciences*)
Evgeny S Sandalov (*Budker Institute of Nuclear Physics Russian Academy of Sciences*)
Stanislav L. Sinitsky (*Budker Institute of Nuclear Physics Russian Academy of Sciences*)

P2-28: Investigation on Mode Converter Based on All-Dielectric Metamaterial for Gyrotron (Page 296)

Meng Han (*University of Electronic Science and Technology of China*)
Wenjie Fu (*University of Electronic Science and Technology of China*)
Dun Lu (*University of Electronic Science and Technology of China*)
Chi Chen (*University of Electronic Science and Technology of China*)
Chaoyang zhang (*University of Electronic Science and Technology of China*)
Xiaotong Guan (*University of Electronic Science and Technology of China*)

P2-29: Paper Unavailable: A Dual-Beam Magnetron Injection Gun for a Terahertz Gyrotron (Page NA)

Tara R. Sirigiri (*Bridge12 Technologies, Inc.*)
Anshul Chandel (*Bridge12 Technologies, Inc.*)
Jagadishwar R. Sirigiri (*Bridge12 Technologies, Inc.*)

3: HPM - Posters

P3-1: Experimental Studies of an Overmoded Millimeter-Wave BWO (Page 298)

Ahmed Elfrgani (*University of New Mexico*)
Artem Kuskov (*University of New Mexico*)
John Rose (*University of New Mexico*)
Christopher Rodriguez (*University of New Mexico*)
Delia Hernandez (*University of New Mexico*)
Edl Schamiloglu (*University of New Mexico*)

P3-2: Conception of a Coaxial Ku-Band Transit Time Oscillator with Novel Hollowed Inner Conductor (Page N/A)

Yannick Delvert (*CEA Gramat*)
Antoine Chauloux (*CEA Gramat*)
Jean-Christophe Diot (*CEA Gramat*)
Nicolas Ribière-Tharaud (*CEA Gramat*)

P3-3: Study of Coaxial Magnetron for X-Band Linear Accelerator (Page 302)

Arjun Kumar (*SAMEER, Guwahati*)
Tapeshwar Tiwari (*SAMEER, Guwahati*)

P3-4: Sub-GW Power Spatially Extended Surface-Wave Oscillators of Cylindrical Geometry with Two-Dimensional Distributed Feedback Operating at Ka and W Bands (Page 304)

Nikolai Yu. Peskov (*Institute of Applied Physics Russian Academy of Sciences*)
Edward B. Abukirov (*Institute of Applied Physics Russian Academy of Sciences*)
Andrey N. Denisenko (*Institute of Applied Physics Russian Academy of Sciences*)
Naum S. Ginzburg (*Institute of Applied Physics Russian Academy of Sciences*)
Mikhail D. Proyavin (*Institute of Applied Physics Russian Academy of Sciences*)
Vladislav Yu. Zaslavsky (*Institute of Applied Physics Russian Academy of Sciences*)

P3-5: Automatic Test System for HPM Effect Injection Experiment (Page 306)

Chunguang Ma (*University of Electronic Science and Technology of China*)
Mingwen Zhang (*University of Electronic Science and Technology of China*)
Yuanci Gao (*University of Electronic Science and Technology of China*)
Junyu Zhao (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)
Qingqing Zhen (*An Fang Gao Ke Electromagnetic Safety Technology (Beijing) Co., Ltd.*)

Poster Session 2

4: TWT - Posters

P4-1: Experiment on Radial Beam Angular Log-Periodic Strip-Line Traveling Wave Tube (Page 308)

Tenglong He (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P4-2: Analysis of Broad-Band Inter-Digital Structure for mm-Wave Traveling-Wave Tubes (Page 310)

M. Sumathy (*Microwave Tube Research and Development Centre*)
Mita Jana (*Microwave Tube Research and Development Centre*)
S. K. Datta (*Microwave Tube Research and Development Centre*)

P4-3: Experiment of a High Fill Ratio Electro-Optical System for a Ka-Band Traveling-Wave Tube (Page 312)

Duo Xu (*University of Electronic Science and Technology of China*)

Hexin Wang (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Zhigang Lu (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P4-4: A Novel Coplanar Double V-Shaped Slow-Wave Structure for E-Band Backward-Wave Oscillator (Page 314)

Yuxin Wang (*University of Electronic Science and Technology of China*)
Yang Dong (*University of Electronic Science and Technology of China*)
Duo Xu (*University of Electronic Science and Technology of China*)
Jingyu Guo (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Zhigang Lu (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P4-5: A 71-76GHz TWTA for Wireless Communication (Page 316)

Shishuo Liu (*Beijing Vacuum Electronics Research Institute*)
Qingmei Xie (*Beijing Vacuum Electronics Research Institute*)
Zhaofei Chen (*Beijing Vacuum Electronics Research Institute*)
Yujuan Wu (*Beijing Vacuum Electronics Research Institute*)
Yinxing Chen (*Beijing Vacuum Electronics Research Institute*)
Zhangxiong Zi (*Beijing Vacuum Electronics Research Institute*)
Jun Cai (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)

P4-6: Design, Simulation, and Test of a 1.7kW W-Band Sheet Beam Staggered Double-Grating TWT (Page NA)

Yu Fan (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P4-7: 3D PIC Simulation of High-Power Traveling-Wave Tube with Multiple-Tunnel Meander-Line Slow-Wave Structure (Page 318)

Roman A. Torgashov (*Saratov Branch Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
Nikita M. Ryskin (*Saratov Branch Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
Andrey G. Rozhnev (*Saratov Branch Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)

P4-8: Simulation of W-Band Folded Waveguide Traveling-Wave Tube with Improved Gain Flatness (Page 320)

Luqi Zhang (*Institute of Applied Electronics China Academy of Engineer Physics*)
Yi Jiang (*Institute of Applied Electronics China Academy of Engineer Physics*)
Rui Song (*Institute of Applied Electronics China Academy of Engineer Physics*)
Wenqiang Lei (*Institute of Applied Electronics China Academy of Engineer Physics*)
Peng Hu (*Institute of Applied Electronics China Academy of Engineer Physics*)
Mawu Ma (*Institute of Applied Electronics China Academy of Engineer Physics*)

P4-9: Preliminary Design of an 8-38GHz Helix x TWT (Page 322)

Wei Li (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Wenbo Shan (*University of Electronic Science and Technology of China*)
Lewei Xu (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)
Yanyu Wei (*University of Electronic Science and Technology of China*)
Wenxiang Wang (*University of Electronic Science and Technology of China*)

P4-10: Development of a 50 Watts Ultra-Broadband TWT (Page 324)

Jianyong Kou (*Beijing Vacuum Electronics Research Institute*)
Baoliang Hao (*Beijing Vacuum Electronics Research Institute*)
Xiaojun Meng (*Beijing Vacuum Electronics Research Institute*)
Jianling Cui (*Beijing Vacuum Electronics Research Institute*)
Jun Iv (*Beijing Vacuum Electronics Research Institute*)
Weihong Ren (*Beijing Vacuum Electronics Research Institute*)
Tianying Chang (*Beijing Vacuum Electronics Research Institute*)
Yixue Wei (*Beijing Vacuum Electronics Research Institute*)

Hongzhi Zhang (*Beijing Vacuum Electronics Research Institute*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute*)

- P4-11: A Novel Cold Characteristics Simulation for Wide-band Helix TWTs** (Page 326)
Suresh Kumar (*Bharat Electronics Limited*)
Mukesh Kumar Alaria (*CSIR-CEERI*)
Sanjay Kumar Ghosh (*CSIR-CEERI*)
- P4-12: Protecting Dielectric SWS Channel from Charging** (Page 328)
Yuriy Nikitich Pchelnikov (*Retired*)
- P4-13: Planar Helix Slow-Wave Structure for K-Band Traveling-Wave Tube** (Page 330)
Giacomo Ulisse (*Goethe University Frankfurt*)
Viktor Krozer (*Goethe University Frankfurt*)
Roman A. Torgashov (*Saratov Branch, Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
Nikita M. Ryskin (*Saratov Branch, Kotelnikov Institute of Radioengineering and Electronics RAS & Saratov State University*)
- P4-14: The new precision bead-pull bench at Thales** (Page 332)
Fred Oulefki (*Thales AVS/MIS*)
Frédéric André (*Thales AVS/MIS*)
- P4-15: Paper Unavailable: Reliability Status of Domestic Space TWTA Analysis and Promotion in China** (Page NA)
Ning Xiao Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Bao Xiao Su (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
- P4-16: Design of a 250W Ku-band High Efficiency Space TWT** (Page 334)
Wenkai Deng (*University of Electronic Science and Technology of China*)
Xinwen Shang (*Aerospace Information Research Institute*)
Yulu Hu (*University of Electronic Science and Technology of China*)
Xiaobing Wang (*University of Electronic Science and Technology of China*)
Shilong Zhu (*University of Electronic Science and Technology of China*)
Quan Hu (*University of Electronic Science and Technology of China*)
Xiaofang Zhu (*University of Electronic Science and Technology of China*)
Luanfeng Gao (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)
- P4-17: Design of Dynamic Variable Power with High Efficiency and Reliability for Ku-Band TWT** (Page 336)
Xinwen Shang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Weibo Huang (*China Academy of Space Technology (Xi'an)*)
Hongxia Yi (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Feng Jin (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Liu Xiao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Zicheng Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
- P4-18: Development of Components of Multi-beam based E-band TWT** (Page 338)
Hong Eun Choi (*Ulsan National Institute of Science and Technology (UNIST)*)
Wonjin Choi (*Ulsan National Institute of Science and Technology (UNIST)*)
EunMi Choi (*Ulsan National Institute of Science and Technology (UNIST)*)
- P4-19: Realization Method of Permanent Magnet Focusing System for Improving Electron Injection Flow Rate in High-Frequency Traveling-Wave Tube** (Page 340)
Shaofei Liu (*University of Electronic Science and Technology of China*)
Li Qiu (*Beijing Vacuum Electronics Research Institute*)
Quan Hu (*University of Electronic Science and Technology of China*)
Xiaofang Zhu (*University of Electronic Science and Technology of China*)
Xiaolin Jin (*University of Electronic Science and Technology of China*)
YuLu Hu (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Li Xu (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)
- P4-20: Paper Unavailable: Increasing the Output Power of Helix TWTs** (Page NA)
Yuriy Nikitich Pchelnikov (*Retired*)
- P4-21: An Application of Metasurface in U-shape Meander-line Slow Wave Structure** (Page 342)
Zhouqijun Li (*Aerospace Information Research Institute (Chinese Academy of Sciences) & University of Chinese Academy of Sciences*)
Zheng Wen (*Aerospace Information Research Institute (Chinese Academy of Sciences) & University of Chinese Academy of Sciences*)

Zhiqiang Zhang (*Aerospace Information Research Institute (Chinese Academy of Sciences)*)
Jirun Luo (*Aerospace Information Research Institute (Chinese Academy of Sciences) & University of Chinese Academy of Sciences*)

P4-22: Study of High-Power Uniform-Structure Helix Traveling Wave Tube (Page 344)

Lexin Yang (*Southeast University*)
Ningfeng Bai (*Southeast University*)
Xiaoran Zhang (*Nanjing Sanle Group Co. Ltd*)
Meng Sun (*Nanjing Sanle Group Co. Ltd*)
Hongxia Chen (*Nanjing Sanle Group Co. Ltd*)
Xuemei Cao (*Beijing Vacuum Electronics Institution*)
Wenjie Yu (*Beijing Vacuum Electronics Institution*)
Xiaohan Sun (*Southeast University*)

P4-23: The Study on the Key Parameter in Beam-Wave Resynchronization Method of the Non-Periodic FW-SWS for TWTs (Page 346)

Zheng Wen (*Aerospace Information Research Institute, Chinese Academy of Sciences & University of Chinese Academy of Sciences*)
Fang Zhu (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Jirun Luo (*Aerospace Information Research Institute, Chinese Academy of Sciences & University of Chinese Academy of Sciences*)

P4-24: Optimization Method of High-Efficiency Collector Based on Energy Distribution Measurement (Page 348)

Xiaobing Wang (*University of Electronic Science and Technology of China*)
Xinwen Shang (*Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing*)
Quan Hu (*University of Electronic Science and Technology of China*)
Wenkai Deng (*University of Electronic Science and Technology of China*)
Shilong Zhu (*University of Electronic Science and Technology of China*)
Xiaofang Zhu (*University of Electronic Science and Technology of China*)
Yulu Hu (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)

P4-25: Paper Unavailable: Small Signal Analysis of Open Planar Tape Helix SWS with Straight Edge Rectangular and Cylindrical (Page NA)

NAVEEN BABU GNANAMOORTHY (*SHIV NADAR UNIVERSITY*)
MADHUR UPADHYAY (*SHIV NADAR UNIVERSITY*)
Jitendra Prajapati (*SHIV NADAR UNIVERSITY*)

P4-26: Numerical Method for Coil Magnetic Field of Traveling-Wave Tube (Page 350)

Weibing He (*University of Electronic Science and Technology of China*)
Quan Hu (*University of Electronic Science and Technology of China*)
Shilong Zhu (*University of Electronic Science and Technology of China*)
Xiaofang Zhu (*University of Electronic Science and Technology of China*)
Yulu Hu (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)

P4-27: High Efficiency and Low Loss Investigation of an Advanced Dual-cavity SB-EIO (Page 352)

Shaoqian Qin (*University of Electronic Science and Technology of China*)
Jianxun Wang (*University of Electronic Science and Technology of China*)
Xinjie Li (*University of Electronic Science and Technology of China*)
Yixin Wan (*University of Electronic Science and Technology of China*)
Zewei Wu (*University of Electronic Science and Technology of China*)
Guo Liu (*University of Electronic Science and Technology of China*)
Chunguang Ma (*University of Electronic Science and Technology of China*)
Wei Jiang (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)

P4-28: G-Band Wide-Bandwidth Traveling-Wave Tube Based on Sine Waveguide (Page 354)

Ziqi Guo (*University of Electronic Science and Technology of China*)
Yanyu Wei (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Jian Zhang (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)
Wenxiang Wang (*University of Electronic Science and Technology of China*)

5: Microfabrication/THz (Poster)

P5-1: A 0.65THz Extended Interaction Klystron Amplifier (Page 356)

Yang Dong (*University of Electronic Science and Technology of China*)

Shaomeng Wang (*University of Electronic Science and Technology of China*)
Jingyu Guo (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Zhigang Lu (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P5-2: 0.22THz Traveling-Wave Tube Based on a V-Shaped Rectangular Groove Staggered Double-Grating Waveguide Slow-Wave Structure (Page 358)

Youfeng Yang (*University of Electronic Science and Technology of China*)
Yang Dong (*University of Electronic Science and Technology of China*)
Jingyu Guo (*University of Electronic Science and Technology of China*)
Duo Xu (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Zhigang Lu (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P5-3: Design of a Terahertz Multi-Beam BWO Based upon Sine Waveguide (Page 360)

Shuanzhu Fang (*China Electronic Product Reliability and environmental Testing Research Institute, CEPREI, Zhucun Street, Guangdong, China*)
Xianghong Hu (*China Electronic Product Reliability and environmental Testing Research Institute, CEPREI*)
Yue Zhi (*China Electronic Product Reliability and environmental Testing Research Institute, CEPREI*)
Baojun Qiu (*China Electronic Product Reliability and environmental Testing Research Institute, CEPREI*)
Xiaoqiang Wang (*China Electronic Product Reliability and environmental Testing Research Institute, CEPREI*)
Daojun Luo (*China Electronic Product Reliability and environmental Testing Research Institute, CEPREI*)
Yanyu Wei (*University of Electronic Science and Technology of China*)

P5-4: Study for a 0.34THz Filleted Staggered Double Vane SWS (Page 362)

Jingyu Guo (*University of Electronic Science and Technology of China*)
Yang Dong (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Zhigang Lu (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)

P5-5: One Technological Process Design of Planar Slow Wave Structure by Using MEMS Method (Page 364)

Hexin Wang (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Zhanliang Wang (*University of Electronic Science and Technology of China*)
Duo Xu (*University of Electronic Science and Technology of China*)
Tenglong He (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)
Yanyan Tian (*Shenzhen University*)

P5-6: Research for High Power G-Band Transformed Folded Waveguide Pulsed Traveling Wave Tube (Page 366)

Lei Wenqiang (*Institute of Applied Electronics China Academy of Engineer*)
Jiang Yi (*Institute of Applied Electronics China Academy of Engineer*)
Song Rui (*Institute of Applied Electronics China Academy of Engineer*)
Zhang Luqi (*Institute of Applied Electronics China Academy of Engineer*)
Hu Peng (*Institute of Applied Electronics China Academy of Engineer*)
Ma Guowu (*Institute of Applied Electronics China Academy of Engineer*)

P5-7: Design and Test High-Frequency System of G-band Folded Waveguide Traveling-wave Tube (Page 368)

Hongfei Li (*University of Electronic Science and Technology of China*)
Rui Guo (*Guoguang electric co.,Ltd.Chengdu*)
Yujiang Liu (*University of Electronic Science and Technology of China*)
Feng Lan (*University of Electronic Science and Technology of China*)
Zugen Guo (*University of Electronic Science and Technology of China*)
Ruifeng Zhang (*University of Electronic Science and Technology of China*)
Huarong Gong (*University of Electronic Science and Technology of China*)

P5-8: A G-Band Compact Folded Waveguide Traveling Wave Tube Operating at 3 Π Phase Shift (Page 370)

Yang Xie (*Southeast University*)
Ningfeng Bai (*Southeast University*)

Xiaohan Sun (*Southeast University*)
Hongxia Chen (*Nanjing Sanle Group Co. Ltd*)
Pan Pan (*Beijing Vacuum Electronics Institution*)
Jun Cai (*Beijing Vacuum Electronics Institution*)
Wenjie Yu (*Beijing Vacuum Electronics Institution*)
Jinjun Feng (*Beijing Vacuum Electronics Institution*)

P5-9: Progress of the G-Band Sheet-Beam TWT (Page 372)

Changqing Zhang (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Xueliang Chen (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Pan Pan (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Xingwang Bian (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Weisi Meng (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Bowen Song (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Siming Su (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Ying Li (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Na Li (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Ke Zhang (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Jun Cai (*Beijing Vacuum Electronics Research Institute (BVERI)*)
Jinjun Feng (*Beijing Vacuum Electronics Research Institute (BVERI)*)

P5-10: 3-D Particle-in-Cell Simulation of a Multiple-Beam 0.22-THz Traveling Wave Tube (Page 374)

Vladimir N. Titov (*Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Andrey E. Ploskih (*Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)
Nikita M. Ryskin (*Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)

P5-11: Development Progress of a 220-GHz Extended Interaction Klystron (Page 376)

Zhaowei Qu (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Zhiqiang Zhang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Shuzhong Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Qingsheng Li (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Ding Zhao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Zicheng Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P5-12: Resonance Characteristics of Ridge-Loaded Barbell Cavity with Transverse-Mode Overlapping (Page 378)

Han Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences & University of Chinese Academy of Sciences*)
Qianzhong Xue (*Aerospace Information Research Institute, Chinese Academy of Sciences & University of Chinese Academy of Sciences*)
Ding Zhao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Zhaowei Qu (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P5-13: Enhancing Radiation of Grating by Defect Structure (Page 380)

Jing Shu (*University of Electronic Science and Technology of China*)
Ping Zhang (*University of Electronic Science and Technology of China*)
Shuhe Zhang (*University of Electronic Science and Technology of China*)
Hongyang Guo (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Yong Yin (*University of Electronic Science and Technology of China*)
Lin Meng (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P5-14: Preparation Of SnO_x Thin Films For Vacuum Electronic Amplifier Applications (Page 382)

Yue Ouyang (*University of Electronic Science and Technology of China*)
Yanyu Wei (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Guoqing Zhao (*University of Electronic Science and Technology of China*)

P5-15: Theoretical Research on a TM₀₂ Mode Terahertz Extended Interaction Oscillator (Page 384)

Qinwen Xue (*University of Electronic Science and Technology of China*)
Yifan Zu (*University of Electronic Science and Technology of China*)
Qingyun Chen (*University of Electronic Science and Technology of China*)
Xuesong Yuan (*University of Electronic Science and Technology of China*)
Yang Yan (*University of Electronic Science and Technology of China*)

P5-16: Design and Research of a 150GHz Extended Interaction Oscillator with Sheet Beam Working in High-order Mode (Page 386)

Rongxing Zeng (*University of Electronic Science and Technology of China*)

Jie Qing (*University of Electronic Science and Technology of China*)
Qinwen Xue (*University of Electronic Science and Technology of China*)
Lu Liu (*University of Electronic Science and Technology of China*)
Tianzhong Zhang (*University of Electronic Science and Technology of China*)
Xinjian Niu (*University of Electronic Science and Technology of China*)

P5-17: Preliminary Study of a Sub-terahertz Orthogonal Grating Waveguide for High-order Mode Backward Wave Oscillators (Page 388)

Jiacai Liao (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Guoxiang Shu (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Jingcong He (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Junchen Ren (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Zhiwei Chang (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Jujian Lin (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Guangxin Lin (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Qi Li (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)
Wenlong He (*Institute of Microelectronics, College of Electronics and Information Engineering of Shenzhen University*)

P5-18: A Novel Ridge-Loaded Sine Waveguide for 0.22THz Sheet Electron-Beam Traveling-Wave Tube (Page 390)

Shuanzhu Fang (*China Electronic Product Reliability and Environmental Testing Research Institute, CEPREI*)
Jun Luo (*China Electronic Product Reliability and Environmental Testing Research Institute, CEPREI*)
Tieyang Wang (*China Electronic Product Reliability and Environmental Testing Research Institute, CEPREI*)
Xiaoqiang Wang (*China Electronic Product Reliability and Environmental Testing Research Institute, CEPREI*)
Baojun Qiu (*China Electronic Product Reliability and Environmental Testing Research Institute, CEPREI*)
Daojun Luo (*China Electronic Product Reliability and Environmental Testing Research Institute, CEPREI*)

P5-19: Electrostatic Charged-Particle Guides for μm -Scale Beam-Wave Interactions (Page 392)

Benjamin J. Slayton (*University of California, Davis*)
Ryan S. Kim (*University of California, Davis*)
William P. Putnam (*University of California, Davis*)

P5-20: Design of a 140 GHz Sheet Beam Traveling-wave Tube with a Cutoff Sever (Page 394)

Kaihang Huang (*Shenzhen University*)
Guoxiang Shu (*Shenzhen University*)
Cunjun Ruan (*Beihang University*)
Ying Shang (*Shenzhen University*)
Zhaolun Liang (*Shenzhen University*)
Wenlong He (*Shenzhen University*)

P5-21: Analysis of Frequency Shift Due to Misalignment Between Upper and Lower Plates of W-Band Planar Interaction Structure (Page 396)

Monodipa Sarkar (*Academy of Scientific and Innovative Research (AcSIR)*)
Niraj Kumar (*Academy of Scientific and Innovative Research (AcSIR) & CSIR-Central Electronics Engineering Research Institute*)

P5-22: Investigation of G-Band Array Sheet-Beam Meander-Line Backward-Wave Oscillator (Page 398)

Yuxin Wang (*University of Electronic Science and Technology of China*)
Shaomeng Wang (*University of Electronic Science and Technology of China*)
Yang Dong (*University of Electronic Science and Technology of China*)
Jingyu Guo (*University of Electronic Science and Technology of China*)
Duo Xu (*University of Electronic Science and Technology of China*)
Hexin Wang (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)

P5-23: Design and Experiment of the Electron-optical System for 0.67 THz TWT (Page 400)

Yi Jiang (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Wenqiang Lei (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Peng Hu (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Rui Song (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Zhang Luqi (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Ma Guowu (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Hongbin Chen (*Institute of Applied Electronics, China Academy of Engineering Physics*)
Xiao Jin (*Institute of Applied Electronics, China Academy of Engineering Physics*)

P5-24: Enhancement of Smith-Purcell Radiation from Bound States in the Continuum (Page 402)

Leilei Mao (*Southeast University*)

Zhaofu Chen (*Southeast University*)

Ningfeng Bai (*Southeast University*)

Xiaohan Sun (*Southeast University*)

P5-25: Research on Smith-Purcell Radiation Characteristics of Cylindrical Metallic Grating (Page 404)

Mengmeng Jin (*Southeast University*)

Zhaofu Chen (*Southeast University*)

Ningfeng Bai (*Southeast University*)

Xiaohan Sun (*Southeast University*)

P5-26: Research Progress on Double-Mode Staggered Double-Vane Traveling-Wave Tube in G-Band (Page 406)

Wenbo Wang (*Beihang University*)

Zheng Zhang (*Beihang University*)

Cunjun Ruan (*Beihang University*)

P5-27: Study of OAM Mode Identification by Electric Field Intensity Measurements at E-Band (Page 408)

Seok Ju Moon (*Ulsan National Institute of Science and Technology (UNIST)*)

JinHo Lim (*University of Suwon*)

EunMi Choi (*Ulsan National Institute of Science and Technology (UNIST)*)

P5-28: CFDTD PIC Simulation of a Dielectric-Loaded Rectangular Waveguide for THz Wave Generation (Page 410)

Ming-Chieh Lin (*Hanyang University*)

David N. Smithe (*Tech-X Corporation*)

P5-29: Reflective Amplification of Powerful Terahertz Pulse by Relativistic Electron Bunch (Page 412)

Andrei Savilov (*Institute of Applied Physics, Russian Academy of Sciences*)

Yuliya Oparina (*Institute of Applied Physics, Russian Academy of Sciences*)

Dominika Krygina (*Institute of Applied Physics, Russian Academy of Sciences*)

P5-30: Development of Electron-Optic System with Compression of Multiple Elliptic Electron Beam (Page 414)

Igor A. Navrotsky (*Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS*)

Nikita M. Ryskin (*Saratov Branch, Kotelnikov Institute of Radio Engineering and Electronics RAS & Saratov State University*)

6: Klystron / IOT Posters

P6-1: Particle Simulation for the X-Band Multi-Injection Klystron (Page 416)

Zhou Zhao (*University of Electronic Science and Technology of China*)

Dagang Liu (*University of Electronic Science and Technology of China*)

Laqun Liu (*University of Electronic Science and Technology of China*)

Huihui Wang (*University of Electronic Science and Technology of China*)

P6-2: A High-Efficiency, High-Average-Power, Multiple-Beam-Inductive Output Tube (Page 418)

Henry P. Freund (*Calabazas Creek Research, Inc.*)

R. Lawrence Ives (*Calabazas Creek Research, Inc.*)

Thuc Bui (*Calabazas Creek Research, Inc.*)

Michael Read (*Calabazas Creek Research, Inc.*)

Thomas Habermann (*Calabazas Creek Research, Inc.*)

Walter Sessions (*Georgia Tech Research Institute*)

P6-3: A New Method to Improve the Efficiency of High-Peak-Power Klystron (Page 420)

yong zhong (*Beijing Vacuum Electronics Research Institute*)

Yan Shu (*Beijing Vacuum Electronics Research Institute*)

P6-4: Design of Triple-Gap Cavity Output Circuit for X Band Klystron (Page 422)

Xin Guo (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Honghong Gu (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Yaogen Ding (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Yuan Liang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Bin Shen (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Haibing Ding (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Zhiqiang Zhang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P6-5: Study of Two-Beam Loading on an Input Cavity for High-Power Ka-Band Klystron (Page 424)

Xinyu Jiang (*University of Electronic Science and Technology of China*)

Liangjie Bi (*University of Electronic Science and Technology of China*)

Yong Yin (*University of Electronic Science and Technology of China*)

Bin Wang (*University of Electronic Science and Technology of China*)

Hailong Li (*University of Electronic Science and Technology of China*)

Lin Meng (*University of Electronic Science and Technology of China*)

P6-6: Mitigating Cathode Overcurrent Faults at the Spallation Neutron Source (Page 426)

John Moss (*Spallation Neutron Source, Oak Ridge National Laboratory*)

George Toby (*Spallation Neutron Source, Oak Ridge National Laboratory*)

- P6-7: Development of S-Band High Power Amplifier Klystron** (Page 428)
Dmitriy A. Komarov (*JSC 'RPC 'Toriy'*)
Evgeny P. Yakushkin (*JSC 'RPC 'Toriy'*)
Yury N. Paramonov (*JSC 'RPC 'Toriy'*)
Denis A. Kalashnikov (*JSC 'RPC 'Toriy'*)
- P6-8: A Miniaturized Metamaterial Klystron for Accelerator Application** (Page 430)
Xuanming Zhang (*University of Electronic Science and Technology of China*)
Shaozhe Wang (*Kunshan Guoli High Power Device Industrial Technology Research Institute Co. LTD*)
Jianjun Zou (*Kunshan Guoli High Power Device Industrial Technology Research Institute Co. LTD*)
Yurong Liu (*Kunshan Guoli High Power Device Industrial Technology Research Institute Co. LTD*)
Yongming Li (*Kunshan Guoli High Power Device Industrial Technology Research Institute Co. LTD*)
Zhifang Lyu (*University of Electronic Science and Technology of China*)
Yubin Gong (*University of Electronic Science and Technology of China*)
Zhaoyun Duan (*University of Electronic Science and Technology of China*)
-

Poster Session 3

7: Power Supplies, Windows, Components, and Other - Posters

- P7-1: Millimeter-Wave Interferometric for Low-Loss Nonmetallic Sheet Thickness Measurement** (Page 432)
Liangping Chen (*University of Electronic Science and Technology of China*)
Yu Qin (*University of Electronic Science and Technology of China*)
Liangjie Bi (*University of Electronic Science and Technology of China*)
Yong Yin (*University of Electronic Science and Technology of China*)
Bin Wang (*University of Electronic Science and Technology of China*)
Hailong Li (*University of Electronic Science and Technology of China*)
Lin Meng (*University of Electronic Science and Technology of China*)
- P7-2: A Broadband Smooth-Walled Spline-Profile Horn with a Stable Radiation Field** (Page 434)
Hongyu Song (*University of Electronic Science and Technology of China*)
Zewei Wu (*University of Electronic Science and Technology of China*)
Shuai Huang (*University of Electronic Science and Technology of China*)
Mingxing Wang (*University of Electronic Science and Technology of China*)
Youlei Pu (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)
- P7-3: Effects of Realistic Magnetic Field in Ferrite on the Waveguide Circulator for Industrial Applications** (Page 436)
Kaviya Aranganadin (*Hanyang University*)
Hua-Yi Hsu (*National Taipei University of Technology*)
Ming-Chieh Lin (*Hanyang University*)
- P7-4: A Circular TE₀₂ Mode Filter for Ka-Band High Power Millimeter-Wave Transmission Line** (Page 438)
Zewei Wu (*University of Electronic Science and Technology of China*)
Minxing Wang (*University of Electronic Science and Technology of China*)
Shuai Huang (*University of Electronic Science and Technology of China*)
Ran Zhang (*University of Electronic Science and Technology of China*)
Hongyu Song (*University of Electronic Science and Technology of China*)
Youlei Pu (*University of Electronic Science and Technology of China*)
Yong Luo (*University of Electronic Science and Technology of China*)
- P7-5: Investigation of Brewster Window for Broadband Terahertz Backward-Wave Oscillator** (Page 440)
Ziqing Bai (*University of Electronic Science and Technology of China*)
Lingna Yue (*University of Electronic Science and Technology of China*)
Linqi Feng (*University of Electronic Science and Technology of China*)
Jin Xu (*University of Electronic Science and Technology of China*)
Hairong Yin (*University of Electronic Science and Technology of China*)
Yanyu Wei (*University of Electronic Science and Technology of China*)
Wenxiang Wang (*University of Electronic Science and Technology of China*)
- P7-6: Design of Uniform Intensity Field Forming System Based on Improved G-S Algorithm** (Page 442)
Quanli Li (*School of Electronic Science of Engineering, University of Electronic Science and Technology of China*)
Zewei Wu (*School of Electronic Science of Engineering, University of Electronic Science and Technology of China*)
Minxing Wang (*School of Electronic Science of Engineering, University of Electronic Science and Technology of China*)
Hongyu Song (*School of Electronic Science of Engineering, University of Electronic Science and Technology of China*)
Youlei Pu (*School of Electronic Science of Engineering, University of Electronic Science and Technology of China*)
Yong Luo (*School of Electronic Science of Engineering, University of Electronic Science and Technology of China*)
- P7-7: Study on the Application of Oversized Horn Antenna in Array** (Page 444)
Haixia Liu (*University of Electronic Science and Technology of China*)

Minsheng Song (*University of Electronic Science and Technology of China*)
Yu Qin (*University of Electronic Science and Technology of China*)
Yong Yin (*University of Electronic Science and Technology of China*)
Lin Meng (*University of Electronic Science and Technology of China*)
Bin Wang (*University of Electronic Science and Technology of China*)
Hailong Li (*University of Electronic Science and Technology of China*)

P7-8: Simulation of Copper Plating on Coupler Bellows Under Different Current Densities (Page 446)

Zhang Shuai (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Xiaoxia Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Jirun Luo (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Rui Zhang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P7-9: Design of 220GHz TE₀₁-TE₁₁ Mode Converter (Page 448)

Lu Liu (*University of Electronic Science and Technology of China*)
Rongxing Zeng (*University of Electronic Science and Technology of China*)
Yunfei Huang (*University of Electronic Science and Technology of China*)
Yinghui Liu (*University of Electronic Science and Technology of China*)
Jianwei Liu (*University of Electronic Science and Technology of China*)

P7-10: Design and Simulation of Ferrite-Based High-Power X-Band RF Load (Page 450)

Akash Akash (*IIT Guwahati*)
Narugopal Nayek (*IIT Guwahati*)
Tapeswar Tiwari (*IIT Guwahati*)

8: Modeling - Posters

P8-1: Research on Parallel Algorithm of High-Power Microwave Device Simulation Based on MSMPI (Page 452)

Yulan Hu (*University of Electronic Science and Technology of China*)
Dagang Liu (*University of Electronic Science and Technology of China*)
Laqun Liu (*University of Electronic Science and Technology of China*)
Huihui Wang (*University of Electronic Science and Technology of China*)

P8-2: Smith-Purcell Radiation with Different Grating Parameters and Beam Bunching Frequencies (Page 454)

Md Arifuzzaman Faisal (*Michigan State University*)
Asif Iqbal (*Michigan State University*)
Peng Zhang (*Michigan State University*)

P8-3: Deep Neural Network Modeling for Traveling Wave Tube (Page 456)

Zheng Tan (*University of Electronic Science and Technology of China*)
Weibo Huang (*China Academy of Space Technology (Xi'an)*)
Yulu Hu (*University of Electronic Science and Technology of China*)
Luanfeng Gao (*University of Electronic Science and Technology of China*)
Quan Hu (*University of Electronic Science and Technology of China*)
Xiaofang Zhu (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)

P8-4: Finite Element Analysis of Slow-wave System with Rotated Periodic Structure (Page 458)

Yiyang He (*University of Electronic Science and Technology of China*)
Li Xu (*University of Electronic Science and Technology of China*)
Hao Wang (*University of Electronic Science and Technology of China*)
Hangxin Liu (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)

P8-5: Structural Static Analysis of Microwave Tubes Based on Multi-Level Preconditioner (Page 460)

Junhui Yin (*University of Electronic Science and Technology of China*)
Li Xu (*University of Electronic Science and Technology of China*)
Tao Huang (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)

P8-6: The Impact Response Analysis of High-Frequency Circuit in Microwave Tube Based on Finite-Element Method (Page 462)

Zaichao Yang (*University of Electronic Science and Technology of China*)
Li Xu (*University of Electronic Science and Technology of China*)
Zhonghai Yang (*University of Electronic Science and Technology of China*)
Bin Li (*University of Electronic Science and Technology of China*)

P8-7: A Design of Measuring Module for the Loss of Clamping Rod in K-Band (Page 464)

Ruimin Feng (*University of Chinese Academy of Sciences & Aerospace Information Research Institute, Chinese Academy of Sciences*)
Hongxia Yi (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

Zhiliang Chen (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Yanwei Li (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Xinwen Shang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Jiandong Zhao (*Shandong Microwave Vacuum Technology Co., Ltd.*)
Xinling Zhang (*Shandong Microwave Vacuum Technology Co., Ltd.*)
Liu Xiao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P8-8: An Exact Linear Theory of Backward Wave Oscillations in a Traveling-Wave Tube Including Space-Charge Effects (Page 466)

Patrick Y. Wong (*Michigan State University*)
Peng Zhang (*Michigan State University*)
Abhijit Jassem (*Niowave Inc.*)

P8-9: Research on Two-Dimensional Electrostatic Particle Simulation Method Based on superLU (Page 468)

Qiang Wang (*University of Electronic Science and Technology of China*)
Laqun Liu (*University of Electronic Science and Technology of China*)
Dagang Liu (*University of Electronic Science and Technology of China*)
Huihui Wang (*University of Electronic Science and Technology of China*)

P8-10: A Ceramic Surface Charging Model for Accurate Prediction of E-beam Trajectory in Field Emission Digital X-ray Sources (Page 470)

Yujung Ahn (*University of Science and Technology & Electronics and Telecommunications Research Institute (ETRI)*)
Sora Park (*Electronics and Telecommunications Research Institute (ETRI)*)
Jin-Woo Jeong (*Electronics and Telecommunications Research Institute (ETRI)*)
Eunsol Go (*University of Science and Technology & Electronics and Telecommunications Research Institute (ETRI)*)
Jeong-Woong Lee (*University of Science and Technology & Electronics and Telecommunications Research Institute (ETRI)*)
Jae-Woo Kim (*Electronics and Telecommunications Research Institute (ETRI)*)
Jun-Tae Kang (*Electronics and Telecommunications Research Institute (ETRI)*)
Seong Jun Kim (*Electronics and Telecommunications Research Institute (ETRI)*)
Ki Nam Yun (*Electronics and Telecommunications Research Institute (ETRI)*)
Sunghoon Choi (*Electronics and Telecommunications Research Institute (ETRI)*)
Ji-Hwan Yeon (*Electronics and Telecommunications Research Institute (ETRI)*)
Sunghee Kim (*Electronics and Telecommunications Research Institute (ETRI)*)
Yoon-Ho Song (*University of Science and Technology & Electronics and Telecommunications Research Institute (ETRI)*)

P8-11: Temperature Measurement and Simulation Comparison of Collector of Traveling-Wave Tube (Page 472)

Yongliang Liu (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Jirun Luo (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Guoxing Miao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Cha Gao (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Qingxiang Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Dehui Zhai (*Aerospace Information Research Institute, Chinese Academy of Sciences*)
Jian Wang (*Aerospace Information Research Institute, Chinese Academy of Sciences*)

P8-12: Preliminary Investigation on the Explosive Field Emission Model Using Vircator Particle-In-Cell Simulation (Page 474)

Shen Shou Max Chung (*National Penghu University of Science and Technology*)
Shih-Chung Tuan (*Asia Eastern University of Science and Technology*)

P8-13: A Discrete Cavity Analysis for Coupled-Cavity Travelling Wave Tubes (Page 476)

Ayush Paudel (*Michigan State University*)
Patrick Wong (*Michigan State University*)
Peng Zhang (*Michigan State University*)
John Luginsland (*Air Force Office of Scientific Research*)
Matthew Franzi (*Air Force Research Laboratory*)

P8-14: Model of Helix Traveling Wave Tube Including the Slow-Wave Structure Dispersion Characteristics and Space-Charge Effect (Page 478)

Kasra Rouhi (*University of California, Irvine*)
Robert Marosi (*University of California, Irvine*)
Tarek Mealy (*University of California, Irvine*)
Ahmed F. Abdelshafy (*University of California, Irvine*)
Alexander Figotin (*University of California, Irvine*)
Filippo Capolino (*University of California, Irvine*)

P8-15: Study on a Theoretical Model of the Empty Orbit for Atomic Bonding Layer of Graphene Covered Metal Surface (Page 480)

Min Peng (*Xi'an Jiaotong University*)
Yongdong Li (*Xi'an Jiaotong University*)
Chunliang Liu (*Xi'an Jiaotong University*)

Shu Lin (*Xi'an Jiaotong University*)
Meng Cao (*Xi'an Jiaotong University*)
Dawei Wang (*Xi'an Jiaotong University*)

P8-16: Issues with the Explosive Field Emission Model in PIC Code-Unlimited Current Density (Page 482)

Shen Shou Max Chung (*Department of Electrical Engineering, National Penghu University of Science and Technology*)

Shih-Chung Tuan (*Dept. of Communication Engineering, Asia Eastern University of Science and Technology*)

P8-17: Simulation of the High Power L-4953 Crossed-Field Amplifier (Page 484)

Marcus Pearlman (*Boise State University*)

Jack Watrous (*Confluent Sciences*)

David Smithe (*TechX*)

Christine Roark (*TechX*)

Mike Worthington (*Stellant Systems*)

Allen Garner (*Purdue University*)

Jim Browning (*Boise State University*)

P8-18: Simulating Defects and Reflections in a Traveling-Wave Tube with DIMOHA (Page 486)

Khalil Aliane (*CNES & Thales AVS/MIS & AixMarseille Université*)

Frédéric André (*Thales AVS/MIS*)

Yves Elskens (*AixMarseille Université*)

P8-19: Transmission Loss of a Millimeter-Wave Pulse through a Waveguide Window (Page 488)

Ruei-Fu Jao (*Guangdong Industry Polytechnic*)

Kaviya Aranganadin (*Hanyang University*)

Hua-Yi Hsu (*National Taipei University of Technology*)

John P. Verboncoeur (*Michigan State University*)

Ming-Chieh Lin (*Hanyang University*)

P8-20: A Mini-Marx Generator Powered by a Cockcroft-Walton Voltage Multiplier for a Compact X-Ray Source (Page 490)

Kaviya Aranganadin (*Hanyang University*)

Zhaofeng Zhang (*Hanyang University*)

Po-Yu Chang (*National Cheng Kung University*)

Hua-Yi Hsu (*National Taipei University of Technology*)

Ming-Chieh Lin (*Hanyang University*)

P8-21: Design and Simulation on D-Band Broadband Mode Converter for Gyro-TWT (Page 492)

Tao Wang (*University of Electronic Science and Technology of China*)

Rutai Chen (*University of Electronic Science and Technology of China*)

Hang Ren (*University of Electronic Science and Technology of China*)

Rongxing Zeng (*University of Electronic Science and Technology of China*)

Lu Liu (*University of Electronic Science and Technology of China*)

Zheng Wang (*University of Electronic Science and Technology of China*)

Sheng Yu (*University of Electronic Science and Technology of China*)

P8-22: Data Feedback and Recalculation Analysis for the Helix of Space TWT (Page 494)

Xiaochen Wei (*University of Electronic Science and Technology of China*)

Yulu Hu (*University of Electronic Science and Technology of China*)

Yuan Wang (*Nanjing Sanle Group Co., LTD*)

Wenkai Deng (*University of Electronic Science and Technology of China*)

Dapeng Gong (*University of Electronic Science and Technology of China*)

Tao Huang (*University of Electronic Science and Technology of China*)

Session 31: Plenary

31-1: Vacuum Electronics Industry Retrospective and Futurecast (Page 496)

Carter M. Armstrong (*Consultant*)
