

IEEE TRANSACTIONS ON TERAHERTZ SCIENCE AND TECHNOLOGY

"EXPANDING THE USE OF THE ELECTROMAGNETIC SPECTRUM"

A PUBLICATION OF THE IEEE MICROWAVE THEORY AND TECHNIQUES SOCIETY

www.ieee.org/ieeexplore



MARCH 2016

VOLUME 6

NUMBER 2

ITTSBX

(ISSN 2156-342X)

New Associate Editor	J. Stake	173
<hr/>		
PAPERS		
High-Sensitivity and Broadband, Real-Time Terahertz Camera Incorporating a Micro-Bolometer Array With Resonant Cavity Structure		175
... N. Nemoto, N. Kanda, R. Imai, K. Konishi, M. Miyoshi, S. Kurashina, T. Sasaki, N. Oda, and M. Kuwata-Gonokami		
Developments in THz-Range Ellipsometry: Quasi-Optical Ellipsometer		183
... A. A. Galuza, V. K. Kiseliov, I. V. Kolenov, A. I. Belyaeva, and Y. M. Kuleshov		
Advanced Processing Sequence for 3-D THz Imaging		191
... H. Balacey, B. Recur, J.-B. Perraud, J. B. Sleiman, J.-P. Guillet, and P. Mounaix		
First Supra-THz Heterodyne Array Receivers for Astronomy With the SOFIA Observatory		199
... C. Risacher, R. Güsten, J. Stutzki, H.-W. Hübers, D. Büchel, U. U. Graf, S. Heyminck, C. E. Honingh, K. Jacobs, B. Klein, T. Klein, C. Leinz, P. Piitz, N. Reyes, O. Ricken, H.-J. Wunsch, P. Fusco, and S. Rosner		
Electronically Tuned Local Oscillators for the NOEMA Interferometer		212
... F. Mattiocco, O. Garnier, D. Maier, A. Navarrini, and P. Serres		
The Front-End of the NOEMA Interferometer	J. Y. Chenu, A. Navarrini, Y. Bortolotti, G. Butin, A. L. Fontana, S. Mahieu, D. Maier, F. Mattiocco, P. Serres, M. Berton, O. Garnier, Q. Moutote, M. Parolieau, B. Pissard, and J. Reverdy	223
Effect of the Critical and Operational Temperatures on the Sensitivity of MgB ₂ HEB Mixers	E. Novoselov, S. Bevilacqua, S. Cherednichenko, H. Shibata, and Y. Tokura	238
Dynamics and Spectral Composition of Subterahertz Emission From Plasma Column Due to Two-Stream Instability of Strong Relativistic Electron Beam	A. V. Arzhannikov, A. V. Burdakov, V. S. Burmasov, I. A. Ivanov, A. A. Kasatov, S. A. Kuznetsov, M. A. Makarov, K. I. Mekler, S. V. Polosatkin, S. S. Popov, V. V. Postupayev, A. F. Rovenskikh, S. L. Sinitsky, V. F. Sklyarov, V. D. Stepanov, I. V. Timofeev, and M. K. A. Thumm	245

(Contents Continued on Back Cover)

Pre-Chirped Pulse Excitation Enhanced Terahertz Radiation	253
..... C.-K. Lee, Y.-Y. Lin, G.-R. Lin, C.-L. Wu, T.-H. Wu, C.-J. Chuang, and C.-L. Pan	
Electron-Beam-Driven Enhanced Terahertz Coherent Smith-Purcell Radiation Within a Cylindrical Quasi-Optical Cavity	262
..... Y. Zhou, Y. Zhang, and S. Liu	
Tri-Band, Polarization-Independent Reflectarray at Terahertz Frequencies: Design, Fabrication, and Measurement	
..... H. Hasani, M. Tamagnone, S. Capdevila, C. F. Moldovan, P. Maoddi, A. M. Ionescu, C. Peixeiro, J. R. Mosig, A. K. Skrivervik, and J. Perruisseau-Carrier	268
Anisotropic Properties of Ultra-Thin Freestanding Multi-Walled Carbon Nanotubes Film for Terahertz Polarizer Application	278
..... Y. Wang, J.-H. Yin, Q. Wu, and Y. Tong	
High-Selectivity Bandpass Frequency-Selective Surface in Terahertz Band	284
..... D. S. Wang, B. J. Chen, and C. H. Chan	
Multiband Frequency-Selective Surface With Five Resonance Peaks in Terahertz Band	
..... S. Qiao, Y. Zhang, Y. Zhao, Y. Zhou, S. Liang, and Z. Yang	292
Reconfigurable Near-Field Beam Pattern Measurement System From 0.03 to 1.6 THz	
..... A. Gonzalez, Y. Fujii, T. Kojima, and S. Asayama	300
Design and Demonstration of 820-GHz Array Using Diode-Connected NMOS Transistors in 130-nm CMOS for Active Imaging	
..... D. Y. Kim, S. Park, R. Han, and K. K. O	306
245-GHz Transmitter Array in SiGe BiCMOS for Gas Spectroscopy	
..... K. Schmalz, J. Borngräber, W. Debski, M. Elkhouly, R. Wang, P. F.-X. Neumaier, D. Kissinger, and H.-W. Hübers	318
Thermal Characterization of Substrate Options for High-Power THz Multipliers Over a Broad Temperature Range	
..... T. Kiuru, G. Chattopadhyay, T. J. Reck, A. J. Minnich, R. Lin, E. Schlecht, J. V. Siles, C. Lee, and I. Mehdi	328
A 1.52 THz RTD Triple-Push Oscillator With a μ W-Level Output Power	
..... J. Lee, M. Kim, and K. Yang	336
Diffuse-Reflectance Spectroscopy Using a Frequency-Switchable Terahertz Quantum Cascade Laser	
..... A. Valavanis, S. Chowdhury, A. D. Burnett, A. R. Clarkson, D. R. Bacon, S. P. Khanna, A. G. Davies, E. H. Linfield, and P. Dean	341
<hr/>	
THz LETTERS	
0.25- μ m GaN TeraFETs Optimized as THz Power Detectors and Intensity-Gradient Sensors	
..... S. Boppel, M. Ragauskas, A. Hajo, M. Bauer, A. Lisauskas, S. Chevchenko, A. Rämer, I. Kašalynas, G. Valušis, H.-J. Würfl, W. Heinrich, G. Tränkle, V. Krozer, and H. G. Roskos	348
<hr/>	
Information for Authors	351