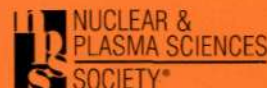


1111
I-68/4ps

IEEE TRANSACTIONS ON

PLASMA SCIENCE

A PUBLICATION OF THE IEEE NUCLEAR AND PLASMA SCIENCES SOCIETY



FEBRUARY 2013

VOLUME 41

NUMBER 2

ITPSBD

(ISSN 0093-3813)

REGULAR PAPERS

Basic Processes in Fully and Partially Ionized Plasmas

- Analytical and Numerical Study on the Characteristics at the α - γ Transition Point in Radio-Frequency Helium Discharges at Atmospheric Pressure *J. Lou and Y. T. Zhang* 274
- Field-Reversed Configuration Induced by a Paramagnetic Field *D. Twaróg* 280
- Reflection and Absorption of Electromagnetic Wave Propagation in an Inhomogeneous Dissipative Magnetized Plasma Slab *B. Jazi, Z. Rahmani, and B. Shokri* 290

Microwave Generation and Microwave-Plasma Interaction

- Tutorial on the Design of Hole-Slot-Type Cavity Magnetron Using CST Particle Studio *T. İsenlik and K. Yeğın* 296

Charged Particle Beams and Sources

- Optimization of Piezoelectric Resonance Effect in a Piezoelectric Transformer Plasma Source *B. T. Hutsel, S. D. Kovaleski, and J. W. Kwon* 305

Industrial, Commercial, and Medical Applications of Plasmas

- Removal of NO_x, SO₂, and Hg From Simulated Flue Gas by Plasma-Absorption Hybrid System *M. Wang, Y. Sun, and T. Zhu* 312
- Atmospheric Plasma Treatment of Carbon Fibers for Enhancement of Their Adhesion Properties *A. L. Santos, E. C. Botelho, K. G. Kostov, P. A. P. Nascente, and L. L. G. da Silva* 319
- Tooth Bleaching Using Low Concentrations of Hydrogen Peroxide in the Presence of a Nonthermal Plasma Jet *J. Pan, X. Yang, K. Sun, J. Wang, P. Sun, H. Wu, K. H. Becker, W. Zhu, J. Zhang, and J. Fang* 325
- Ship Propulsion by Underwater Pulsed High-Voltage Streamer Discharge *X. Q. Wen* 330

Plasma Diagnostics

- Magnetic-Based Measurements of Tokamak Plasma Equilibrium Parameters *A. S. Elahi and M. Ghoranneviss* 334
- A 10 000-Image-per-Second Parallel Algorithm for Real-Time Detection of MARFES on JET *M. Portes de Albuquerque, A. Murari, M. Giovani, N. Alves, Jr., M. Portes de Albuquerque, and JET-EFDA Contributors* 341
- Rotational, Vibrational, and Excitation Temperatures in Bipolar Nanosecond-Pulsed Diffuse Dielectric-Barrier-Discharge Plasma at Atmospheric Pressure *S. Zhang, W. Wang, L. Jia, Z. Liu, Y. Yang, and L. Dai* 350

Pulsed Power Science and Technology

- Reproducibility of Microsecond Self-Breakdown Water Switch With Negative Field Enhancement *P. Cong, G. Zhang, L. Sheng, T. Sun, H. Wu, Z. Zeng, and A. Qiu* 355
- A 3-MV Low-Jitter UV-Illumination Switch *J. Li, W. Jia, J. Tang, W. Chen, B. Xue, and A. Qiu* 360

(Contents Continued on Page 273)

Three-Dimensional FDTD Simulation of Nonlinear Ferroelectric Materials in Rectangular Waveguide	365
..... <i>B. T. Caudle, M. E. Baginski, H. Kirkici, and M. C. Hamilton</i>	
Nanosecond-Range Multiple-Pulse Synchronization Controlled by Magnetic Switches Based on a Communal Magnetic Core.	371
..... <i>Y. Zhang and J. Liu</i>	
Arcs and MHD	
Generalized Leonardo da Vinci Rule for the Discharges, Sliding on Electrolyte Surfaces	380
..... <i>A. E. Dubinov, I. L. L'vov, S. A. Sadovoy, L. A. Senilov, and D. V. Vyalykh</i>	
Kinetic Numerical Simulation of the Cathode Attachment Zone of Constricted High-Current Vacuum Arcs	384
..... <i>D. L. Shmelev, T. Delachaux, and E. Schade</i>	
Other Topics in Plasma Science	
Particle-In-Cell Monte Carlo Collision Model on GPU—Application to a Low-Temperature Magnetized Plasma	391
..... <i>J. Claustre, B. Chaudhury, G. Fubiani, M. Paulin, and J. P. Boeuf</i>	
Special Issue—High Power Microwave Generation 2012	
Multicavity Magnetron With the “Rodded” Quasi-Metamaterial Cathode	400
..... <i>A. D. Andreev and K. J. Hendricks</i>	
