

2021 IEEE International Conference on Plasma Science (ICOPS 2021)

**Lake Tahoe, Nevada, USA
12 – 16 September 2021**



**IEEE Catalog Number: CFP21ICO-POD
ISBN: 978-1-6654-3228-3**

**Copyright © 2021 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:	CFP21ICO-POD
ISBN (Print-On-Demand):	978-1-6654-3228-3
ISBN (Online):	978-1-6654-3227-6
ISSN:	0730-9244

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

DEVELOPING A PLATFORM TO ENABLE PARAMETER SCALING STUDIES IN MAGNETIZED LINER INERTIAL FUSION EXPERIMENTS	1
<i>Matthew R. Gomez, S. A. Slutz, C. A. Jennings, M. R. Weis, D. C. Lamppa, A. J. Harvey-Thompson, M. Geissel, T. J. Awe, G. A. Chandler, J. A. Crabtree, J. R. Fein, S. B. Hansen, E. C. Harding, W. E. Lewis, M. Mangan, D. E. Ruiz, I. C. Smith, D. A. Yager-Elorriaga, D. J. Ampleford, K. Beckwith</i>	
DEEP LEARNING ENABLED ASSESSMENT OF MAGNETIC CONFINEMENT IN MAGNETIZED LINER INERTIAL FUSION.....	2
<i>William E. Lewis, Patrick F. Knapp, Stephen A. Slutz, Paul F. Schmit, Gordon A. Chandler, Matthew R. Gomez, Adam J. Harvey-Thompson, Michael A. Mangan, David J. Ampleford, Kristian Beckwith</i>	
FUEL TARGET IMPLOSION UNIFORMITY IN HEAVY ION INERTIAL FUSION.....	3
<i>Shigeo Kawata, Hiroki Nakamura, Ken Uchibori, Alexander I. Ogoyski</i>	
MAGNETOHYDRODYNAMIC SIMULATIONS OF MAGNETO-RAYLEIGH-TAYLOR INSTABILITY MITIGATION AND ENERGY TRANSPORT IN MULTI-SPECIES GAS-PUFF Z-PINCHES.....	4
<i>Jeff Narkis, Fabio Conti, Farhat N. Beg</i>	
INTERNAL GRAVITY WAVES IN THE EARTH'S IONOSPHERE	5
<i>A. P. Misra, D. Chatterjee, A. Roy, T. D. Kaladze</i>	
MICROPLASMA FORMATION AROUND A MICROSTRUCTURED SURFACE	6
<i>Yangyang Fu, Huihui Wang, Bocong Zheng, Peng Zhang, Qi Hua Fan, Xinxin Wang, John P. Verboncoeur</i>	
STREAMER SELF-FOCUSING IN EXTERNAL LONGITUDINAL MAGNETIC FIELD.....	7
<i>Andrey Yu. Starikovskiy, Mikhail N. Shneider, Nickolay L. Aleksandrov</i>	
STABLE AND UNSTABLE SOLUTIONS OF THE MAG NOH PROBLEM.....	8
<i>Andrey Beresnyak, Alexander Velikovich, John Giuliani, Arati Dasgupta</i>	
TEMPERATURE RELAXATION IN STRONGLY-COUPLED BINARY IONIC MIXTURES.....	9
<i>Luciano G. Silvestri, Michael S. Murillo, R. Tucker Sprenkle, Scott D. Bergeson</i>	
MODELING ION FLUX COEFFICIENT IN HIGH ION CONCENTRATED DUSTY PLASMAS USING LANGEVIN DYNAMICS SIMULATIONS	10
<i>Vikram Suresh, Andrei Fendley, Ranganathan Gopalakrishnan</i>	
FRACTIONAL LAPLACIAN SPECTRAL APPROACH TO ANOMALOUS DIFFUSION IN DUSTY PLASMA	11
<i>Evdokiya G. Kostadinova, Joshua L. Padgett, Constanze D. Liaw, Lorin S. Matthews, Truell W. Hyde</i>	
USING DUST GRAINS TO MEASURE PLASMA CONDITIONS WITH A CHANGING NUMBER DENSITY.....	12
<i>Alexandria Mendoza, Khandaker S. Ashrafi, Lorin Matthews, Truell W. Hyde</i>	
P3I: A SIMULATION CODE FOR PLASMA IMMERSION ION IMPLANTATION (PIII) DOSE PREDICTION	13
<i>Tahreem Yousaf, Michael P. Bradley</i>	

NEW SCALING LAW OF 3D TOPOLOGICAL SEMIMETAL IN FIELD EMISSION.....	14
<i>Wei Jie Chan, Yee Sin Ang, L. K. Ang</i>	
AN EXACT QUANTUM THEORY FOR PHOTOEMISSION FROM DIELECTRIC COATED METAL SURFACES UNDER A DC BIAS	15
<i>Yang Zhou, Peng Zhang</i>	
ELECTRONICALLY TUNABLE NEGATIVE ELECTRON AFFINITY SILICON PHOTOEMITTERS	16
<i>Hyun Uk Chae, Ragib Ahsan, Rehan Kapadia</i>	
THE MICHELLE CODE: ADVANCED EMISSION, MULTIPLE DESIGN ENVIRONMENT IMPLEMENTATIONS, AND HIGH ENERGY APPLICATIONS	17
<i>John Petillo, Serguei Ovtchinnikov, Aaron Jensen, David Chernin, Vadim Jabotinski, Eric Nelson, George Stantchev, Simon Cooke, Alexander Vlasov, Ben Held, Adam Bruss</i>	
END-TO-END SIMULATION OF A FOLDED WAVEGUIDE TRAVELING WAVE TUBE USING IMPEDANCE MATRICES AND COMPASS	18
<i>Aaron Jensen, John Petillo, Serguei Ovtchinnikov, Igor Chernyavskiy, Alexander Vlasov</i>	
COMPARATIVE STUDIES OF ELECTRON RESISTIVE AND CONDUCTION MODELS FOR CAPILLARY DISCHARGES APPLICATIONS	19
<i>A. Diaw, S. Coleman, N. Cook, J. Edelen, E. Hansen, P. Tzeferacos</i>	
EXPERIMENTAL MEASUREMENT OF COMPRESSION AND ACCELERATION ON METAL RODS DRIVEN BY INTENSE CURRENT	20
<i>A. W. Klemmer, S. E. Kreher, B. S. Bauer, T. M. Hutchinson, T. J. Awe, D. H. Dolan, B. T. Hutsel, M. W. Hatch, K. C. Yates</i>	
COMPOSITION AND OPTICAL PROPERTIES OF WARM DENSE GERMANIUM PLASMA	21
<i>Gennady Miloshevsky</i>	
SIMULATION OF PHASE CHANGE AND SPLASHING MOTION OF BERYLLIUM MELT IN FUSION REACTOR.....	22
<i>Cheng Zhang, Gennady Miloshevsky</i>	
INFLUENCE OF THE TUNGSTEN SURFACE CHEMICAL STATE ON THE AMMONIA FORMATION USING LOW-PRESSURE N ₂ -H ₂ PLASMAS	23
<i>Rodrigo Antunes, Roland Steiner, Kunal Soni, Laurent Marot, Ernst Meyer, Carlos Romero Muñiz</i>	
APOLLON FACILITY SHORT FOCAL LENGTH AREA COMMISSIONING	24
<i>K. Burdonov, A. Fazzini, P. Forestier-Colleoni, L. Lancia, V. Lelasseaux, F. Perez, J. Fuchs, T. Ceccotti, F. Quere, A. Leblanc, S. Pikuz</i>	
LONG-DURATION X-RAY SOURCE DEVELOPMENT FOR X-RAY DIFFRACTION AT THE NATIONAL IGNITION FACILITY	25
<i>K. Werellapatha, G. N. Hall, F. Coppari, G. E. Kemp, A. Krygier, N. E. Palmer, C. Krauland, S. F. Khan, A. Lazicki, M. G. Gorman, S. R. Nagel, C. Heinbockel, N. Bhandarkar, N. Masters, D. K. Bradley, J. H. Eggert, L. R. Benedetti</i>	
3-D PIC SIMULATION OF THE SELF-COMPRESSION OF A SUB-TW LASER PULSE IN A DENSE GAS TARGET	26
<i>Dang Khoa Tran, Ming-Wei Lin, Yao-Li Liu, Shao-Wei Chou, Shih-Hung Chen</i>	

CHARACTERIZATION OF SHORT-PULSE LASER PRODUCED FAST ELECTRONS BY USING 3-D HYBRID PARTICLE-IN-CELL SIMULATIONS.....	27
<i>L. Chen, H. Sawada, T. S. Daykin, F. N. Beg, H. Chen, A. J. Link, G. J. Williams, Y. Ping, H. S. McLean</i>	
MEASUREMENT OF HEATING DEPTH OF HIGHLY-IONIZED COPPER FROM RELATIVISTICALLY-INTENSE LASER PULSES.....	28
<i>N. F. Beier, H. Allison, F. Dollar, Y. Musthafa, V. Senthilkumaran, M. H. Kabir, A. E. Hussein, R. Hollinger, R. Nedbailo, J. J. Rocca, H. Song, S. Wang, P. Efthimion, L. Gao, B. Kraus, K. Hill, Kirk Flippo, S. Hansen, R. Shepherd</i>	
NONLINEAR LASER-DIELECTRIC OPTICAL MEDIA INTERACTION MODELING AND CHARACTERIZATION.....	29
<i>Theodore G. Jones, Yu-Hsin Chen, Bahman Hafizi, Luke Johnson, Daniel Gordon, J. Ryan Peterson</i>	
EVALUATION OF PLASMA-ACTIVATED PLASMID DNA DELIVERY TO SKIN	30
<i>Edwin Oshin, Chunqi Jiang, Richard Heller, Pavan Cherukuri</i>	
TREATMENT OF BIOFILMS BY ATMOSPHERIC PRESSURE RF PLASMA JETS: TOUCHING AND REMOTE	31
<i>Sanjana Kerketta, Mark J. Kushner, Gaurav Nayak, Sahil Mahajan, Fujun Wang, Reed Jacobson, Mikael Elias, Michael McAlpine, Ryan Hunter, Peter Bruggeman</i>	
COLD PLASMA AND ELECTRIC FIELD INDUCED CHANGE IN ELECTRIC PROPERTIES OF CANCER CELLS IN VITRO	32
<i>Edwin Oshin, Siqi Guo, Ruben C. Biancatelli, John D. Catravas, Chunqi Jiang</i>	
COLD PLASMA FOR SARS-COV-2 INACTIVATION.....	33
<i>Zhitong Chen</i>	
THE PERIODIC CELLULAR BEHAVIORS UNDER THE PHYSICAL EFFECTS OF PLASMA MEDICINE	34
<i>Li Lin, Dayun Yan, Luis Martinez, Yi Liu, Michael Keidar</i>	
LIFETIME AND BACTERICIDAL EFFECT OF PLASMA ACTIVATED MEDIUM BY DI-ELECTRIC BARRIER DISCHARGE MICROPLASMA IN AIR.....	35
<i>A. G. Yahaya, T. Okuyama, J. Kristof, M. G. Blajan, K. Shimizu</i>	
PLASMA CHEMICAL POLYMERS TREATMENT IN PRODUCTION OF BIOCOMPATIBLE MATERIALS FOR CELL CULTURING.....	36
<i>Tatiana Vasilieva, Tatiana Shikova, Elena Nikolskaya, Nikita Yabbarov, Maria Sokol, Maria Mollaeva, Margarita Fomicheva</i>	
MECHANISMS OF PHYSICAL PLASMA-INCUCED BLOOD COAGUALTION: WHAT HAPPENS AT THE TREATMENT-INTERFACE?	37
<i>Sander Bekeschus, Broder Poschkamp, Thomas Von Woedtke, Klaus-Dieter Weltmann, Stephan Kersting, Julia Van Der Linde</i>	
EXPERIMENTAL INVESTIGATION OF THE INDUCTANCE OF AN IMPLODING Z-PINCH PLASMA COLUMN CLOSE TO STAGNATION	38
<i>T. Queller, E. Kroupp, Y. Maron, V. Tangri, A. Dasgupta, A. Velikovich, J. Giuliani</i>	
WIRE, HYBRID, AND LASER-CUT X-PINCH EMISSION STUDIES FOR TALBOT-LAU X-RAY DEFLECTOMETRY	39
<i>M. Pia Valdivia, Gilbert W. Collins, Fabio Conti, Farhat Beg</i>	

ELECTRIC FIELD PROFILE MEASUREMENT ALONG PROBING LASER PATH BASED ON ELECTRIC FIELD-INDUCED SECOND-HARMONIC GENERATION	40
<i>Shin Nakamura, Masahiro Sato, Takashi Fujii, Akiko Kumada, Yuji Oishi</i>	
MEASURING DYNAMIC DENSITY GRADIENTS IN WARM DENSE MATTER WITH 1 μ M SPATIAL RESOLUTION.....	41
<i>Cameron H. Allen, Thomas G. White, Tilo Döppner, Markus Schoelmerich, Laurent Divol, Andreas Kemp, Otto L. Landen, Yuan Ping, Matthew Oliver, Wolfgang Theobald</i>	
HIGH-RESOLUTION BETATRON X-RAY IMAGING OF POROSITY EVOLUTION IN ADDITIVELY MANUFACTURED ALLOYS.....	42
<i>V. Senthilkumaran, T. Richards, S. Knudsen, A. E. Hussein, A. A-Borkent, Z. Li, M. Lipsett, S. Fourmaux, L. Zhou, J. A. Moore</i>	
GENERATIONS OF NONLINEAR WAVES IN MAGNETIZED PLASMAS AND THEIR APPLICATIONS TO THE LONG-TERM UNSOLVED PROBLEMS IN SPACE PHYSICS AND ASTROPHYSICS	43
<i>L. H. Lyu</i>	
AIR PLASMA JET FOR NOX FORMATION COUPLED WITH HETEROGENEOUS CATALYSIS.....	44
<i>Xuekai Pei, David B. Graves</i>	
SPARSE GRID APPROACH TO ACCELERATE PARTICLE-IN-CELL TECHNIQUE: APPLICATION TO THE HALL THRUSTER E \times B INSTABILITY	45
<i>L. Garrigues, M. Chung-To-Sang, G. Fubiani, C. Guillet, F. Deluzet, J. Nariski</i>	
LOW TEMPERATURE PLASMA SOURCES FOR EFFECTIVE INACTIVATION OF PATHOGENIC MICROBIAL AEROSOLS.....	46
<i>Dawei Liu</i>	
SIMULTANEOUS QUANTIFICATION OF ATOMIC O AND MOLECULAR O ₃ IN NON-THERMAL O ₂ -MIXED PLASMAS.....	55
<i>Qing Xiong, Junjie Qiao, Zhan Shu, Chuanqi Wang, Yijia Song</i>	
EXACT ANALYTICAL SOLUTION FOR PULSED LASER INDUCED PHOTOEMISSION FROM BIASED SURFACES	56
<i>Peng Zhang, Yi Luo, Yang Zhou</i>	
UNIVERSAL SCALING LAW FOR ELECTRON FIELD EMISSION FROM 2D SEMIMETALS	57
<i>Yee Sin Ang, L. K. Ang, Ching Hua Lee</i>	
IMPROVED LINE-SHAPE PHYSICS FOR PLASMA DIAGNOSTICS.....	58
<i>Thomas Gomez</i>	
UNDERSTANDING ELECTRODE PLASMA FORMATION ON WIRES AND THIN FOILS VIA VACUUM ULTRAVIOLET SPECTROSCOPY OF DESORBED SURFACE CONTAMINANTS	59
<i>T. J. Smith, M. D Johnston, N. M. Jordan, M. E. Cuneo, G. R. Laity, R. D. McBride</i>	
SIMILARITY OF BREATHING OSCILLATIONS IN MAGNETRON DISCHARGES.....	60
<i>Bocong Zheng, Yangyang Fu, Keliang Wang, Thomas Schuelke, Qi Hua Fan</i>	
RELATIVISTIC TWO-FLUID ELECTRODYNAMICS USING IMPLICIT-EXPLICIT DISCONTINUOUS-GALERKIN METHODS.....	61
<i>Forrest W. Glines, Kristian Beckwith</i>	

DISTRIBUTIONS OF ACCUMULATED CHARGES IN ATMOSPHERIC PRESSURE OXYGEN DIELECTRIC BARRIER DISCHARGES.....	62
<i>Haruaki Akashi, Tomokazu Yoshinaga</i>	
INTENSE LASER RADIATION INTERACTING WITH NANO-STRUCTURED MATTER.....	63
<i>Samah Balouza, Hartmut Ruhl</i>	
TWO-DIMENSIONAL FULL-FLUID MOMENT MODEL FOR HALL-EFFECT THRUSTER.....	64
<i>Adnan R. Mansour, Kentaro Hara</i>	
REAL-TIME ESTIMATION OF DISCHARGE CURRENT OSCILLATIONS USING AN ITERATED EXTENDED KALMAN FILTER	65
<i>Christine M. Greve, Kentaro Hara</i>	
CHARACTERISTICS OF RF HOLLOW CATHODE DISCHARGE: PARTICLE-IN- CELL/MONTE CARLO SIMULATION.....	66
<i>Kallol Bera, Xiaopu Li, Abhishek Verma, Sathya Ganta, Shahid Rauf</i>	
RECENT EXPERIMENTS ON THE S-BAND COAXIAL MULTIPACTOR TEST CELL	67
<i>Stephen V. Langellotti, Nicholas M. Jordan, Y. Y. Lau, Ronald M. Gilgenbach</i>	
MULTILAYER-STRUCTURED DISCHARGE IN PLASMA IONIZATION BREAKDOWN NEAR A DIELECTRIC SURFACE	68
<i>De-Qi Wen, Peng Zhang, Janez Krek, Yangyang Fu, John P Verboncoeur</i>	
GENERATION OF ELECTRON CYCLOTRON MICROWAVE EMISSIONS IN A MIRROR DISCHARGE	69
<i>B. Eliasson, M. Viktorov, D. C. Speirs, K. Ronald, D. Mansfeld, A. D. R. Phelps</i>	
COHERENT THZ EMISSION PRODUCED IN PLASMA BY TRANSVERSELY MODULATED COLLIDING LASER BEAMS	70
<i>Evgeniia P. Volchok, Igor V. Timofeev, Vladimir V. Annenkov, Evgeny Berendeev</i>	
STUDY OF TWO-FREQUENCY RF FIELD INDUCED TWO-SURFACE MULTIPACTOR.....	71
<i>Asif Iqbal, Patrick Wong, John Verboncoeur, Peng Zhang</i>	
INCREASED PREHEAT ENERGY TO MAGLIF TARGETS WITH CRYOGENIC COOLING.....	72
<i>A. J. Harvey-Thompson, M. Geissel, J. A. Crabtree, M. R. Weis, M. R. Gomez, J. R. Fein, D. J. Ampleford, T. J. Awe, G. A. Chandler, B. R. Galloway, S. B. Hansen, J. Hanson, E. C. Harding, C. A. Jennings, M. Kimmel, P. F. Knapp, D. C. Lamppa, W. E. Lewis, M. A. Mangan, A. Maurer, L. Perea, K. J. Peterson, J. L. Porter, P. K. Rambo, G. K. Robertson, G. A. Rochau, D. E. Ruiz, J. E. Shores, S. A. Slutz, I. C. Smith, C. S. Speas, D. A. Yager-Elorriaga, A. York, R. R. Paguio, G. E. Smith</i>	
INVESTIGATING AT-SCALE MAGLIF PREHEAT ON THE NIF	73
<i>Bradley B. Pollock, Eleanor Tubman, Ryan Lau, James S. Ross, David Strozzi, John D. Moody, Michael E. Glinsky, Matthew R. Weis, Adam J. Harvey-Thompson, Kristian R. Beckwith, Evstati G. Evstatiev, David J. Ampleford</i>	
LINE VISAR MEASUREMENTS OF ENERGY DEPOSITION FOR NEXT GENERATION MAGLIF LASER PREHEAT AT NIF.....	74
<i>Michael E. Glinsky, Matthew R. Weis, Adam J. Harvey-Thompson, Kristian Beckwith, Bradley B. Pollock, John D. Moody, David J. Strozzi</i>	

MEASURING MIX IN MAGLIF EXPERIMENTS AT THE NIF	75
<i>Eleanor R. Tubman, Bradley B. Pollock, David J. Strozzi, Steven Ross, Ryan Lau, John D. Moody, Adam J. Harvey-Thompson, Matthew R. Weis, Michael E. Glinsky, Stephanie B. Hansen, Evstati G. Evstatiev, David J. Ampleford, Kristian Beckwith</i>	
THREE-DIMENSIONAL MAGNETOHYDRODYNAMIC MODELING OF AUTO-MAGNETIZING LINER IMPLOSIONS.....	76
<i>G. A. Shipley, T. J. Awe, C. A. Jennings, B. T. Hutsel</i>	
USING ENGINEERED DEFECTS TO EXPLORE 3D FEEDBACK PROCESSES IN CURRENT-DRIVEN METAL	77
<i>E. P. Yu, T. J. Awe, K. R. Cochrane, K. J. Peterson, B. T. Hutsel, M. W. Hatch, T. M. Hutchinson, K. C. Yates, K. Tomlinson, W. D. Tatum, B. S. Bauer</i>	
SOME CONSIDERATIONS OF A FLOW-STABILIZED Z-PINCH FOR MEGAGAUSS FUSION	78
<i>Peter J. Turchi, Uri Shumlak</i>	
KR L-SHELL SPECTROSCOPY AS A PLASMA DIAGNOSTIC FOR INERTIAL CONFINEMENT FUSION CONDITIONS.....	79
<i>Enac Gallardo-Diaz, Roberto C. Mancini, Patrick Adrian, Johan A. Frenje, Ricardo Florido</i>	
REACTIVE SPECIES TRANSPORT TO WATER MICRO-DROPLETS IN ATMOSPHERIC PRESSURE RF GLOW DISCHARGES.....	80
<i>Gaurav Nayak, Peter J. Bruggeman, Mackenzie Meyer, Mark J. Kushner</i>	
SYNTHESIS OF AMORPHOUS MOLYBDENUM SULFIDE/REDUCED GRAPHENE OXIDE NANOHYBRIDS USING PLASMA REDUCTION.....	81
<i>Dai Zhang, Rongqing Liang, Qiongrong Ou, Shuyu Zhang</i>	
SIMULATION OF NANOSECOND REPETITIVELY PULSED PLASMA ASSISTED COUNTER-FLOW DIFFUSION FLAME	82
<i>Bang-Shiuh Chen, Allen L. Garner, Sally P. M. Bane</i>	
HIGH CAPACITY AND HIGH STABILITY LITHIUM ION BATTERY ELECTRODES USING SUSTAINIABLE CARBON PLASMA.....	83
<i>Bo Ouyang, Rajdeep Singh Rawat</i>	
PLASMA-ASSISTED SYNTHESIS OF SILVER NANOPARTICLES	84
<i>Tatiana Habib, Bruno Caillier, José Mauricio A. Caiut</i>	
PLASMA AND FLOW DYNAMICS IN GLIDING- AND TRANSFERRED-ARC REACTORS FOR HYDROGEN PRODUCTION FROM POLYETHYLENE	85
<i>Benard Tabu, Mammadbaghir Baghirzade, Kevin Akers, Peng Yu, Eric Brack, Christopher Drew, J. Hunter Mack, Hsi-Wu Wong, Juan Pablo Trelles</i>	
THE COMBINATION OF COLD PLASMA AND NANOCOMPOSITE PACKAGING FOR SAFFRON PRESERVATION	86
<i>Milad Rasouli, Mahmood Ghoranneviss</i>	
DEFLUORINATION MECHANISM OF PERFLUOROCTANOIC ACID (PFOA) WITH A NANOSECOND PULSED PLASMA GAS-LIQUID FLOWING FILM REACTOR	87
<i>Radha Krishna Murthy Bulusu, Rachel O. Gallan, Karam Eeso, Christopher Patterson, Robert J. Wandell, Youneng Tang, Bruce R. Locke</i>	

STUDY ON THE CHARACTERISTICS AND HEAT DISSIPATION EFFECT OF IONIC WIND GENERATED BY MULTI-NEEDLE NET ELECTRODE IN CORONA DISCHARGE.....	88
<i>Yulei Zhao, Jia Di, Yuan Dong, Feng Liu, Zhi Fang</i>	
EFFECT OF HYDROGEN ION FLUX FOR REDUCTION AND HYDROGENATION OF MAGNESIUM OXIDE USING MICROWAVE EXCITED HYDROGEN PLASMA.....	89
<i>Ryohei Kurebayashi, Manatsu Kishi, Akihisa Ogino</i>	
ELECTRICAL DISCHARGES CONTACTING A LIQUID: THE ROLE OF MIXING IN THE DEGRADATION OF ORGANIC CONTAMINANTS	90
<i>Mikhail Vasilev, Xudong Su, Patrick Conlon, Jaymes Suiter, Douglas Bohl, Selma Mededovic Thagard</i>	
SUPER-HYDROPHOBIC FILM DEPOSITION ON EPOXY RESIN BY NANOSECOND PULSE EXCITED AR/HMDSO JET ARRAY.....	91
<i>Zhiyan Liu, Feng Liu, Xinglei Cui, Zhi Fang</i>	
IMPROVEMENT OF THE CERAMICS WET FLASHOVER WITH AR /PDMS DIELECTRIC BARRIER DISCHARGE EXCITED BY NANOSECOND PULSE POWER SUPPLY	92
<i>Jingang Xu, Xinglei Cui, Zhi Fang</i>	
SIMULATION OF 2D MODEL OF DIELECTRIC BARRIER DISCHARGE FOR FLEXIBLE HYBRID ELECTRONICS.....	93
<i>Anupama S. Dhamala, Jacob Manzi, Harish Subbaraman, Nirmala Kandadai</i>	
CHARACTERIZATION OF CAPILLARY DISCHARGE EJECTA ONTO METAL SUBSTRATES.....	94
<i>William T. Searight, A. Leigh Winfrey, Joshua Nowak, John R. Echols, Mohamed A. Bourham</i>	
PROGRESS ON THE 4-CAVITY BLUE LTD SYSTEM AT THE UNIVERSITY OF MICHIGAN.....	95
<i>Roman V. Shapovalov, Brendan A. Sporer, Nicholas M. Jordan, Ryan D. McBride</i>	
GENERATION OF SUPERSONIC WATER JETS BY UNDERWATER ELECTRICAL EXPLOSION OF WIRE ARRAYS	96
<i>D. Maler, S. Efimov, A. Rososhek, S. N. Bland, Ya. E. Krasik</i>	
UNIFORMITY OF ELECTRICAL CURRENT FOR UNDERWATER ELECTRICAL WIRE ARRAY EXPLOSION.....	97
<i>Zhigang Liu, Dun Qian, Xiaobing Zou, Xinxin Wang</i>	
TARGET ACCELERATION BY UNDERWATER ELECTRICAL EXPLOSION OF A WIRE ARRAY	98
<i>Daniel Maler, Alexander Rososhek, Sergey Efimov, Alexander Virozub, Yakov E. Krasik</i>	
TRANSIENT SPACE CHARGE LIMITED PICOSECOND PULSES USING ULTRA SHORT LASER PULSES.....	99
<i>C. Kaur, K. Rambabu, R. Fedosejevs</i>	
GENERATION CONDITIONS AND COMPRESSION PROCESS OF DIVERGENT WIRE ARRAY Z-PINCH	100
<i>Miharu Takao, Hiroaki Ito, Taichi Takezaki, Keiichi Takasugi</i>	
NONLINEARITY AND WAVES IN CAPACITIVELY-COUPLED PLASMA PROCESSING DISCHARGES.....	101
<i>M. A. Lieberman, A. J. Lichtenberg, E. Kawamura</i>	

DUST IN PROTOPLANETARY ENVIRONMENTS	102
<i>T. W. Hyde, L. S. Matthews, Augusto Carballido</i>	
EXAMINING IONIZATION WAVE EFFECTS ON SELF-ORGANIZATION OF DUST CHAINS	103
<i>Katrina Vermillion, Dustin Sanford, Lorin Matthews, Peter Hartmann, Marlene Rosenberg, Evdokiya Kostadinova, Truell Hyde, Jeremiah Williams, Edward Thomas, Lori Scott, Uwe Konopka, Mikhail Pustyl'nik, Hubertus Thomas</i>	
ENTROPY GENERATION IN ULTRACOLD NEUTRAL PLASMAS	104
<i>Lucas J. Stanek, Michael S. Murillo, Jeffrey R. Haack</i>	
MODELING NANOPARTICLE CHARGE DISTRIBUTION IN THE AFTERGLOW OF NON- THERMAL PLASMAS AND COMPARISON WITH MEASUREMENTS	105
<i>Vikram Suresh, Lili, Joshua Redmond Go Felipe, Ranganathan Gopalakrishnan</i>	
ABNORMAL TRANSITION FROM UNCONVENTIONAL FIELD EMISSION TO SPACE CHARGE LIMITED CURRENT	106
<i>L. K. Ang, C. Chua, Y. S. Ang, C. Y. Kee</i>	
ELECTRON EMISSION NEXUS THEORY FOR A CROSSED-FIELD DIODE.....	107
<i>Amanda M. Loveless, Adam M. Darr, Allen L. Garner</i>	
EXPERIMENTS ON A 10 KA, 240 KV MAGNETICALLY INSULATED LINE OSCILLATOR (MILO).....	108
<i>Drew A. Packard, Y. Y. Lau, Chris J. Swenson, Emma N. Guerin, Nicholas M. Jordan, Ronald M. Gilgenbach</i>	
SPACE CHARGE WAVE GROWTH VIA COUPLING TO LOSSY BACKWARD CIRCUIT WAVE: TWO WAVE THEORY	109
<i>Patrick Forbes, John H. Booske, Nader Behdad</i>	
SINGLE-SHOT MULTI-KEV X-RAY ABSORPTION SPECTROSCOPY USING AN ULTRASHORT LASER WAKEFIELD ACCELERATOR SOURCE	110
<i>B. Kettle, R. A. Baggott, C. Colgan, E. Los, S. J. Rose, S. P. D. Mangles</i>	
K-SHELL SPECTROSCOPY OF NI NANOWIRE PLASMAS HEATED WITH HIGHLY RELATIVISTIC LASER PULSES	111
<i>R. Hollinger, S. Wang, H. Song, R. Nedbailo, Y. Wang, V. Shlyaptsev, J. Rocca, J. Clark, R. Shepherd, J. Emig, E. Magee, A. Pukhov, B. Kraus, L. Gao, P. Efthimion, K. Hill, M. Bitter</i>	
CONTINUUM HARD-PHOTON K-SHELL YIELDS FROM Z-PINCH IMPLOSIONS: PRESENT STATUS AND SCALING TO HIGHER CURRENTS.....	112
<i>A. L. Velikovich, N. D. Quart, A. Dasgupta, J. L. Giuliani, V. Tangri, A. J. Harvey-Thompson, M.-A. Schaeuble, J. Schwarz, C. E. Myers, D. J. Ampleford, R. A. Vesey, B. Jones</i>	
CURRENT DELIVERY OF GAS-PUFF Z-PINCHES ON THE CESZAR LINEAR TRANSFORMER DRIVER.....	113
<i>Nicholas A. Aybar, Fabio Conti, Farhat N. Beg</i>	
PLASMA FOR CREWED TRANSIT AND PLANETARY HABITATION	114
<i>K. W. Engeling, M. Shah, R. P. Pitts, M. M. Tessema, G. D. Massa, A. Meier, D. Rinderknecht, N. Azim, E. Petersen, H. O. Boles, R. P. Gott, C. Johnson, J. A. Olson, M. Hummerick, C. Franco</i>	

UNDERWATER SHOCK WAVE GENERATED BY EXPLODING WIRE IGNITED ENERGETIC MATERIALS AND ITS APPLICATION IN RESERVOIR STIMULATION	115
<i>Huantong Shi, Yujia Hu, Xingwen Li, Jian Wu, Yongmin Zhang, Aici Qiu</i>	
SEQUENTIAL ADSORPTION PLASMA CATALYTIC ABATEMENT OF TOLUENE USING METAL OXIDE LOADED MS-13X IN PACKED BED DBD REACTOR.....	116
<i>Savita K. P. Veerapandian, Karen Leus, Nathalie De Geyter, Rino Morent, Parviz G. Derakhshandeh, Pascal Van Der Voort</i>	
FAR UV-C RADIATION FROM MICROPLASMA FLAT LAMP AND ITS VIRAL INACTIVATION IN OCCUPIED SPACE.....	117
<i>Sung-Jin Park</i>	
INTENSE GAMMA RAY PULSES FROM ULTRA-RELATIVISTIC LASER-PLASMA INTERACTIONS	118
<i>Daniel Gordon, Bahman Hafizi, Jacob Zier, Abdurrahman Younis, Asher Davidson, Domenico Doria, Klaus Spohr</i>	
IONOSPHERIC BEAT-WAVE BRILLOUIN SCATTERING AT EISCAT	119
<i>B. Eliasson, A. Senior, M. Rietveld, A. D. R. Phelps, R. A. Cairns, K. Ronald, D. C. Speirs, R. M. G. M. Trines, I. McCrea, R. Bamford, J. T. Mendonça, R. Bingham</i>	
DIRECT KINETIC SIMULATION OF THE INTERACTION OF AN EXPANDING PLASMA PLUME WITH AMBIENT GAS	120
<i>W. H. Ronald Chan, Alexander R. Vazsonyi, Iain D. Boyd</i>	
INFLUENCE OF PLASMA AND ELECTRON BEAM NOISE ON SYSTEM INSTABILITY AT KNUDSEN NUMBERS OF THE ORDER OF 1	121
<i>V. Sukhomlinov, A. Zaitsev, N. Timofeev, A. Mustafaev</i>	
PLASMA CHEMISTRY IN A HUMID AIR RADIOFREQUENCY (RF) ATMOSPHERIC PRESSURE PLASMA JET	122
<i>Jingkai Jiang, V. S. Santosh, K. Kondeti, Gaurav Nayak, Peter J. Bruggeman</i>	
PLASMA-ENABLED CO ₂ /CH ₄ CONVERSION INTO LIQUID CHEMICALS: EFFECT OF VALENCE STATES AND MICROSTRUCTURE OF THE CATALYSTS	123
<i>Liguang Dou, Jiangwei Li, Yuan Gao, Yadi Liu, Shuai Zhang, Tao Shao</i>	
STUDY OF NON-EQUILIBRIUM PLASMA EFFECTS ON DETONATION IN FUEL LEAN NATURAL GAS MIXTURES.....	124
<i>Shaon Talukdar, Md. Monir Hossain, Rajagopalan V. Ranganathan, Mruthunjaya Uddi</i>	
LANGEVIN DYNAMICS MODELING OF GAS-PHASE ION RECOMBINATION WITH DILUTE ION CONCENTRATION.....	125
<i>Li Li, Zhibo Liu, Mrittika Roy, Ranganathan Gopalakrishnan</i>	
GAS-PHASE MOLECULAR FORMATION IN MULTI-COMPONENT LASER-PRODUCED PLASMAS	126
<i>E. J. Kautz, A. Zelenyuk, B. Gwalani, S. S. Harilal</i>	
VALIDATION OF THE TESLA-Z STABILITY ANALYSIS FRAMEWORK BY ITS APPLICATION TO EXPERIMENTAL TWTS	127
<i>Igor A. Chernyavskiy, John C. Rodgers, Colin D. Joye, Alan M. Cook, Alexander N. Vlasov, Simon J. Cooke, Thomas M. Antonsen</i>	

CONFORMAL SPACE-CHARGE LIMITED EMISSION MODELING IN THE NEPTUNE EM- PIC CODE.....	128
<i>Simon J. Cooke</i>	
SIMULATION OF A RELATIVISTIC MAGNETRON USING A FLUID ELECTRON MODEL	129
<i>Nicholas A. Roberds, Andrew Sandoval, Keith L. Cartwright, Kris Beckwith</i>	
COMPUTATIONAL MODELING OF CO ₂ DECOMPOSITION BY CONCENTRATED SOLAR ENERGY – ENHANCED MICROWAVE PLASMA.....	130
<i>Rasool Elahi, Juan P. Trelles</i>	
MICROWAVE GENERATION IN COAXIAL, COMPOSITE NONLINEAR TRANSMISSION LINES.....	131
<i>Xiaojun Zhu, Andrew J. Fairbanks, Travis D. Crawford, Walter D. Sessions, Allen L. Garner</i>	
DEVELOPING AN EXTENDED CONVOLUTE POST TO DRIVE AN X-PINCH FOR RADIOGRAPHY AT THE Z FACILITY	132
<i>Matthew R. Gomez, C. E. Myers, M. W. Hatch, B. T. Hutsel, C. A. Jennings, D. C. Lampa, M. C. Lowinske, A. J. Maurer, A. M. Steiner, K. Tomlinson, T. J. Webb, D. A. Yager- Elorriaga, D. J. Ampleford</i>	
THE SURPRISING ROLE OF EQUATION OF STATE MODELS IN ELECTRICALLY EXPLODING METAL ROD MHD SIMULATIONS.....	133
<i>Seth E. Kreher, Bruno S. Bauer, Aidan W. Klemmer, Christopher L. Rousculp, Charles E. Starrett</i>	
SPECTRAL LINE IDENTIFICATION OF A PHOTOIONIZED SILICON PLASMA IN EMISSION.....	134
<i>Patricia B. Cho, Guillaume P. Loisel</i>	
SUBCELLULAR MECHANISM OF MICROBIAL INACTIVATION DURING WATER DISINFECTION BY COLD ATMOSPHERIC-PRESSURE PLASMA	135
<i>Siyao Ju, Hangbo Xu, Yupan Zhu, Mengru Du, Yuqi Wang, Ruonan Ma, Zhen Jiao</i>	
THE TREATMENT OF MEDICAL WASTE BY ATMOSPHERIC MICROWAVE PLASMA.....	136
<i>Daolu Xia, Cheng Liu, Ziyao Jie, Guixin Zhang</i>	
THE ROTATING PLASMA SOURCE (RPS) AS AN INNOVATIVE TOOL TO SYNTHESIZE FINE POWDER FOR INDUSTRIAL APPLICATIONS	137
<i>Ahmed M. Hala</i>	
COMPARATIVE ANALYSIS OF HELIUM AND AIR SURFACE MICRO-DISCHARGE PLASMA ON THE MICROBIAL REDUCTION AND QUALITY ATTRIBUTES OF BEEF SLICES.....	138
<i>Bo Yu, Hangbo Xu, Yupan Zhu, Ruonan Ma, Zhen Jiao</i>	
CHARACTERIZATION OF REACTIVE CHEMICAL SPECIES IN NON-THERMAL AIR SURFACE DIELECTRIC BARRIER DISCHARGE PLASMA.....	139
<i>S. M. Allabakshi, Psnr Srikar, R. K. Gangwar, S. M. Maliyekkal</i>	
EXPERIMENTAL DESIGN FOR DIRECT DIAGNOSTICS OF FLASHOVER PLASMA PROPAGATION VELOCITY	140
<i>Andrei S. B. Koch, John J. Blandino, Nikolaos A. Gatsonis</i>	
RESONANCE BEHAVIOR OF DIFFERENT PLANAR PROBE DESIGNS FOR ACTIVE PLASMA RESONANCE SPECTROSCOPY.....	141
<i>Michael Friedrichs, Jens Oberrath, Chunjie Wang, Ralf Peter Brinkmann</i>	

ELECTRON ACOUSTIC SOLITARY WAVES IN THE PRESENCE OF ELECTRON BEAM AND SUPERHERMAL ELECTRONS.....	142
<i>Rajneet Kaur, N. S. Saini</i>	
LARGE HELICON APPARATUS FOR PARAMETRIC MICROWAVE COUPLING EXPERIMENTS IN A MAGNETISED PLASMA.....	143
<i>K. Wilson, L. Selman, C. G. Whyte, P. Macinnes, A. R. Young, A. D. R. Phelps, A. W. Cross, L. Zhang, B. Eliasson, D. C. Speirs, C. W. Robertson, K. Ronald, R. A. Cairns, R. Bingham, R. Bamford, M. E. Koepke</i>	
PROPERTIES OF AN ABLATION PLASMA AT VERY LOW TARGET TEMPERATURES	144
<i>Arturo Robledo-Martinez, L. Angel Garcia-Villarreal, Hugo M. Sobral</i>	
SPECTROSCOPIC CHARACTERIZATION OF ELECTRON BEAM INDUCED PLASMA IN DIFFERENT GASES.....	145
<i>Michael J. Johnson, Stuart L. Jackson, Eric R. Kaiser, David D. Hinshelwood, A. Stephen Richardson, Stephen B. Swanekamp</i>	
STUDY ON MULTI CONTROL MODE OF ARC POWER SUPPLY ON NBI	146
<i>Junjun Pan, Lian Duan, Zhimin Liu, Shiyong Chen, Caichao Jiang, Sheng Liu, Yahong Xie</i>	
DEVELOPMENT OF PHOTOINJECTOR COMPLEX AT IAP RAS: SYSTEM FOR SYNCHRONIZATION OF LASER PULSE AND RF-SOURCES.....	147
<i>Dmitriy S. Makarov, Alexander A. Vikharev, Nikolay Yu. Peskov, Alexander P. Shkayev</i>	
GATED FIELD EMITTER ARRAYS FOR PLANAR CROSSED-FIELD DEVICE EXPERIMENT.....	148
<i>Ranajoy Bhattacharya, John McClarin, Andong Yue, Rushmita Bhattacharjee, Isaac Wolstenholme, Mason Cannon, Gerardo Herrera, Liz Gaffney, Jim Browning, Adam Darr, Allen Garner, Nedeljko Karaulac, Girish Rughoobur, Winston Chern, Akintunde I. Akinwande</i>	
ELECTRON BEAM-PLASMA INTERACTION IN AN ELECTRON-POSITRON PLASMA SYSTEM WITH KAPPA-DISTRIBUTED ELECTRONS.....	149
<i>Ashkbiz Danehkar</i>	
EFFECTS OF APPLIED AXIAL MAGNETIC FIELDS ON CURRENT COUPLING IN MAGLIF EXPERIMENTS ON THE Z MACHINE	150
<i>D. Zimmer, F. Conti, F. Beg, M. R. Gomez, C. A. Jennings, C. E. Myers, N. Bennett</i>	
MITIGATING THE JOINT FEATURE IN DOUBLE SHELL IMPLOSION SIMULATIONS	151
<i>D. J. Stark, J. P. Sauppe, B. M. Haines, S. Palaniyappan, R. F. Sacks, I. Sagert, P. A. Keiter, D. S. Montgomery, T. Morrow, B. M. Patterson, T. E. Quintana, L. Kuettner, L. Goodwin, S. H. Batha, E. N. Loomis</i>	
A PLATFORM TO STUDY HIGH-FIELD FRC FORMATION ON THE MAIZE LINEAR TRANSFORMER DRIVER.....	152
<i>Brendan J. Sporer, Akash P. Shah, George V. Dowhan, Nicholas M. Jordan, Ryan D. McBride, Stephen A. Slutz, Gabriel A. Shipley</i>	
PLASMA CHANNEL MODULATION IN CAPILLARY DISCHARGES FOR PARTICLE ACCELERATORS.....	153
<i>Nathan M. Cook, Johan Carlsson, Stephen Coleman, Abdou Diaw, Jonathan Edelen, Edward Hansen, Petros Tzeferacos</i>	

MODELLING PLASMA FORMATION AND EVOLUTION FROM BEAM STRIKES ON ADVANCED PHOTON SOURCE UPGRADE COLLIMATORS	154
<i>J. Dooling, M. Borland, A. Grannan, C. Graziani, R. Lindberg, G. Navrotski, D. Lee, Y. Lee, N. Cook</i>	
INCLUSION OF ENERGY LOSS IN MODELS OF LASER-IRRADIATED GOLD FILMS VIA CLASSICAL MOLECULAR DYNAMICS	155
<i>Jacob M. Molina, Thomas G. White</i>	
BACTERICIDAL PROPERTIES OF LEUCINE UPON TREATMENT BY HE/O ₂ PLASMA IN PHOSPHATE-BUFFERED SALINE SOLUTION	156
<i>P. Lukes, V. Jirasek, B. Tarabova, Z. Kovalova</i>	
WOUND-BASED BACTERIAL BIOFILM IMAGING FOR SELECTIVE COLD ATMOSPHERIC PRESSURE PLASMA TREATMENT	157
<i>Michael Okebiorun, Cameron Waite, Hannah May, Dalton Miller, Ken Cornell, Jim Browning</i>	
LOW TEMPERATURE PLASMA ACTIVATED LIQUID INDUCES MELANOMA APOPTOSIS IN VIVO AND IN VITRO.....	158
<i>Gui-Min Xu, Xing-Min Shi, Guan-Jun Zhang</i>	
EFFECTIVE INACTIVATION OF PLANT-PATHOGEN FUSARIUM SPP. BY COLD ATMOSPHERIC PLASMA: EFFICIENCY, MECHANISM AND APPLICATION.....	159
<i>Yuqi Wang, Shuang Li, Xiaoxia Hu, Siyao Ju, Ruonan Ma, Zhen Jiao</i>	
BIPOLAR MICROSECOND PULSE GENERATOR FOR BIOMEDICAL APPLICATIONS.....	160
<i>Alex Henson, Caleb Schmidt, Kevin Muggli, Huatsern Yeager</i>	
FUNGUS INACTIVATION USING REACTIVE SPECIES GENERATED BY PLASMA JET SUBMERGED IN WATER.....	161
<i>Housseem Eddine Bousba, Salah Sahli, Namous Wail Seif Eddine, Lyes Benterrouche, Saoudi Mouna</i>	
MACHINE LEARNING FOR PLASMA STERILIZATION OPTIMIZATION	162
<i>Sophia E. Shick, Amanda M. Loveless, Stylianos Chatzidakis, James R. Prager, Allen L. Garner</i>	
COMPARATIVE ANALYSIS OF COLD ATMOSPHERIC PLASMA ON THE DEGRADATION OF DEOXYNIVALENOL IN SOLID AND AQUEOUS STATE	163
<i>Xudong Yang, Siyao Ju, Mengjie Liu, Yuqi Wang, Yupan Zhu, Ruonan Ma, Zhen Jiao</i>	
COLD ATMOSPHERIC PRESSURE PLASMA PLANAR AND RADIAL ARRAYS FOR BIOFILM REMEDIATION	164
<i>Adam Croteau, Spencer Goering, Dalton Miller, Sam Clark, Amanda White, Jose Escobosa, Ryan Olson, Cade Solich, Serena Stranger, Brenden Bjorklund, Kalynn Alexander, Marcus Pearlman, Ken Cornell, Don Plumlee, Jim Browning</i>	
A NANOSECOND PULSE GENERATOR BASED ON THE COMBINATION OF AVALANCHE TRANSISTOR MARX CIRCUIT AND TRANSMISSION LINE TRANSFORMER	165
<i>Mingzu He, Wenjie Sun, Liang Yu, Jianhao Ma, Shoulong Dong, Chenguo Yao</i>	
COMPACT HIGH-CURRENT PULSE GENERATOR FOR LABORATORY STUDIES OF HIGH ENERGY DENSITY MATTER.....	166
<i>Svetlana Gleizer, Daniel Maler, Eugene Flyat, Alexander Rososhek, Sergey Efimov, Jochanan Leopold, Yakov Krasik</i>	

DEVELOPMENT OF MAGNETIC FIELD GENERATOR FOR GENERATING MAGNETIZED COLLISIONLESS SHOCK USING HIGH POWER LASER.....	167
<i>T. Oguchi, T. Takezaki, H. Ito, R. Yamazaki, S. J. Tanaka, S. Matsukiyo, T. Morita, S. Isayama, Y. Sakawa</i>	
SYNTHESIS OF CERIUM DIOXIDE NANOPARTICLES BY GAS/LIQUID PULSED DISCHARGE PLASMA IN A SLUG FLOW REACTOR.....	168
<i>Wanying Zhu, Wahyudiono, Hideki Kanda, Motonobu Goto</i>	
VARYING THE MORPHOLOGY AND PHASE COMPOSITION OF $\text{Cu}_x\text{O}_y/\text{SiO}_2$ NANOCOMPOSITES IN THE PULSED PLASMA-CHEMICAL SYNTHESIS	169
<i>G. Kholodnaya, D. Ponomarev, R. Sazonov, O. Lapteva</i>	
A HIGH-VOLTAGE SIC SERIES SWITCH FRO PULSE DISCHARGE.....	170
<i>Wenjie Sun, Dazhao He, Mingzu He, Penghao Zhang, Liang Yu, Shoulong Dong, Chenguo Yao</i>	
THE GOOD, THE BAD AND THE UGLY: THE STORY OF FAST IGNITION AND A PATH FORWARD	171
<i>F. N. Beg</i>	
"GASDYNAMIC DIODE" FORMATION FOR HIGH-VOLTAGE NS DISCHARGES	172
<i>Andrey Yu. Starikovskiy, Mikhail N. Shneider, Arthur Dogariu</i>	
INCORPORATING A SERIES RESISTOR INTO MICROSCALE GAS BREAKDOWN THEORY.....	173
<i>James C. Welch, Adam M. Darr, Amanda M. Loveless, Allen L. Garner</i>	
MULTIPACTOR STATISTICAL MODELING REGARDING SPACE CHARGE EFFECT FOR SATURATION INVESTIGATION.....	174
<i>Shu Lin, Hongguang Wang, Hao Qu, Yongdong Li, Patrick Wong, John Verboncoeur</i>	
EXPERIMENTAL STUDIES OF GAS BREAKDOWN AND ELECTRON EMISSION FOR NANOSCALE GAPS AT ATMOSPHERIC PRESSURE.....	175
<i>Haoxuan Wang, Russell S. Brayfield, Amanda M. Loveless, Allen L. Garner</i>	
CALCULATION OF IONIZATION COEFFICIENT IN MICROSCALE AND NANOSCALE GAPS USING PIC/MCC SIMULATIONS.....	176
<i>Haoxuan Wang, Russell S. Brayfield, Ayyaswamy Venkatraman, Amanda M. Loveless, Cameron J. Buerke, Allen L. Garner</i>	
SIMILARITY OF ENERGY BALANCE BETWEEN SINGLE-SURFACE MULTIPACTOR AND COLLISIONAL GAS DISCHARGE	177
<i>Huihui Wang, Laqun Liu, Dagang Liu, Lin Meng</i>	
ON ELECTRON HEATING AND ION RECYCLING IN HIGH POWER IMPULSE MAGNETRON SPUTTERING DISCHARGE.....	178
<i>Jon Tomas Gudmundsson</i>	
NANOSECOND MICRO-JOULE DISCHARGES IN CAVITATING WATER FLOW	179
<i>Alexander Gutsol, Yuriy Mirochnik</i>	
ATMOSPHERIC PRESSURE PLASMA TREATMENT OF DRY AND WATER-FILLED MICROCHANNELS.....	180
<i>Kseniia Konina, Sanjana Kerketta, Astrid L. Raisanen, Josh Morsell, Steven Shannon, Mark J. Kushner</i>	

THE PULSE DBD IN MIXTURES OF ARGON WITH SULFUR AND SELENIUM VAPOURS	181
<i>Svetlana V. Avtaeva, Andrii A. Heneral</i>	
CONTINUOUSLY-OPERATING REPETITIVELY-PULSED RMF-FRC THRUSTER AND POWER SYSTEM	182
<i>Kenneth E. Miller, James Prager, Alex Henson, Kyle McEleney, Joshua Woods, Christopher Sercel, Tate Gill, Eric Vigas, Benjamin Jorns</i>	
NUMERICAL AND ANALYTICAL THRUST PERFORMANCE ANALYSIS OF DC RING CUSP DISCHARGE ION THRUSTER.....	183
<i>Naveen Deshan Ranasinghe, R. Wijesiriwardhana</i>	
EFFECT OF LARGE MODULATION IN LOWER COIL CURRENT ON NANOPOWDER SYNTHESIS BY TWO-COIL TANDEM MODULATED INDUCTION THERMAL PLASMAS.....	184
<i>Yasunori Tanaka, Ryudai Furukawa, Yurina Nagase, Yusuke Nakano, Tatsuo Ishijima, Shiori Sueyasu, Shu Watanabe, Keitaro Nakamura</i>	
BIERMANN BATTERY MAGNETIC FIELDS IN ICF CAPSULES.....	185
<i>Chris Walsh, Dan Clark</i>	
EFFECT OF ALPHA PARTICLE RETENTION ON THE FRC TARGET DURING STABILIZED LINER COMPRESSION	186
<i>Peter J. Turchi</i>	
EXPERIMENTAL STUDY OF FAST DEUTERONS AND ELECTRONS IN DPF FUSION PLASMA.....	187
<i>Pavel Kubes, Marian Paduch, Marek Jan Sadowski, Jakub Cikhart, Daniel Klir, Jozef Kravarik, Jakub Malir, Jan Novotny, Karel Rezac, Balzhima Cikhartova, Kristof Tomaszewski, Ewa Zielinska</i>	
COMPOSITE-BASED NONLINEAR TRANSMISSION LINE AS A COMPLETE HIGH POWER MICROWAVE SYSTEM	188
<i>Andrew J. Fairbanks, Travis D. Crawford, Allen L. Garner</i>	
TESTING COMPOSITE BASED NONLINEAR TRANSMISSION LINES WITH VARIOUS PULSED POWER DRIVERS	189
<i>Travis D. Crawford, Andrew J. Fairbanks, Allen L. Garner</i>	
RF GENERATION USING A COMPACT GYROMAGNETIC NLTL WITH PERMANENT MAGNETS.....	190
<i>Jose O. Rossi, Fernanda S. Yamasaki, Andre F. Teixeira, Elizete G. L. Rangel, Ana F. G. Greco, Joaquim J. Barroso, Lauro P. S. Neto, Edl Schamiloglu</i>	
ADDITIVELY MANUFACTURED HIGH POWER MICROWAVE COMPONENTS IN ALUMINUM SLM	191
<i>Charalampos Stoumpos, María García-Viguera, Juan-Antonio Duran-Venegas, Thierry Pierré</i>	
MODELING THE EFFECTS OF ELECTRON-ION COLLISIONS ON ELECTRIC FIELD AND CONDUCTIVITY IN AN E-BEAM DRIVEN GAS CHAMBER USING TURBOPY.....	192
<i>Ian M. Rittersdorf, A. Stephen Richardson, Steve B. Swanekamp, Paul E. Adamson, Nancy D. Isner, Darryl J. Watkins, David Mosher</i>	
SIMULATION AND EXPERIMENTAL VERIFICATION OF AN ARGON DC GLOW DISCHARGE	193
<i>Erik Ziehm, George H. Miley</i>	

RESEARCH ON EAST-NBI EXPERIMENTAL DATA ANALYSIS SYSTEM BASED ON NEURAL NETWORKS.....	194
<i>Jinxin Wang, Zhimin Liu, Na Wang, Yuanzhe Zhao, Yahong Xie</i>	
SIMULATION ANALYSIS OF ELECTROMAGNETIC INDUCTION BETWEEN TWO DRIVERS OF RADIO FREQUENCY ION SOURCE.....	195
<i>Na Wang, Zhimin Liu, Jinxin Wang, Yahong Xie, Caichao Jiang, Jianglong Wei, Junjun Pan</i>	
A RE-EXAMINATION OF BRILLOUIN FLOW IN A CROSSED-FIELD DIODE.....	196
<i>Dion Li, A. Jassem, Y. Y. Lau</i>	
SIMULATION OF L3-HARRIS L-4953 CROSSED-FIELD AMPLIFIER.....	197
<i>Marcus Pearlman, Jim Browning, John W. Luginsland, Peter Stoltz, Allen L. Garner, Mike Worthington</i>	
THEORETICAL ANALYSIS OF MICROWAVE BREAKDOWN FOR MICROSCALE GAPS.....	198
<i>Shivani Mahajan, Amanda M. Loveless, Abbas Semani, Allen L. Garner</i>	
ANGULAR MOMENTUM EFFECTS IN COAXIAL MULTIPACTOR.....	199
<i>Patrick Wong, Peng Zhang, John Verboncoeur, Shu Lin</i>	
A MATLAB PROGRAMMING TOOL FOR INSERTION DEVICE PERFORMANCE ANALYSIS	200
<i>Shreya Mishra, Mona Gehlot</i>	
VARACTOR DIODE SELECTION BASED ON SPICE SIMULATION FOR APPLICATION IN DISCRETE NONLINEAR TRANSMISSION LINES	201
<i>Lauro P. S. Neto, Lucas G. Ferraz, Jose O. Rossi, Joaquim J. Barroso, Elizete G. L. Rangel, Edl Schamiloglu</i>	
NUMERICAL SIMULATION OF A GYROMAGNETIC NLTL USING AN LC DISCRETE LINE MODEL.....	202
<i>Ana F. G. Greco, Jose O. Rossi, Joaquim J. Barroso, Fernanda S. Yamasaki, André F. Teixeira, Elizete G. L. Rangel, Lauro P. S. Neto, Edl Schamiloglu</i>	
DEVELOPMENT OF HIGH FLUENCE X-RAY SOURCES USING LASER HEATED NOVEL NANO-WIRE METAL FOAMS.....	203
<i>Mark May, Gregory Kemp, Russ Benjamin, Patrick Poole, Klaus Widmann, Jeff Colvin, Tyler Fears, Fang Qian, Brent Blue</i>	
INVESTIGATION OF PULSE PARAMETERS ON CO ₂ SPLITTING TO O ₂ BY DIELECTRIC BARRIER DISCHARGE PLASMA AT 1KPA.....	204
<i>Qiang Fu, Yufei Wang, Cong Wang, Zhengshi Chang</i>	
UNIFORM INNER SURFACE TREATMENT OF TUBES USING A FLEXIBLE ATMOSPHERIC PRESSURE MICROPLASMA JET SOURCE	205
<i>Li Lv, Tao Wang, Jiahao Wang, Shengquan Wang, Liping Shi, Meng Li</i>	
TUNABLE QUANTUM CASCADE LASER ABSORPTION SPECTROSCOPY FOR PLASMA ASSISTED OXIDATIVE COUPLING OF METHANE TO C ₂ BASED PRODUCTS	206
<i>Rajagopalan V Ranganathan, Md Monir Hossain, Shoan Talukdar, Robayet Ahasan, Ruigang Wang, Mruthunjaya Uddi</i>	
CHARACTERIZATION OF A COMMERCIAL PLASMA SOURCE WITH APPLICATION TO PLASMA ETCHING	207
<i>Dereth J Drake, Bakari Bethea, Arthur Bui, Eric Burns, Zachary Barton, Gabriella Miles, Ashley Raulerson</i>	

DEVELOPMENT OF REMOTE IR TEMPERATURE MEASUREMENT FOR EAST-NBI BEAM INJECTION PROTECTION	208
<i>Chao Shi, Zhimin Liu, Lizhen Liang</i>	
CTR DIAGNOSTICS FOR LASER PRODUCED ELECTRON BEAMS IN MG MAGNETIC FIELDS GENERATED BY THE 1 MA PULSED POWER MACHINE.....	209
<i>Noah Huerta, Vladimir Ivanov, Alexey Astanovitskiy</i>	
MEASUREMENT OF ELECTRON DENSITY EVOLUTION BY THE OPTICAL FIBER INTERFEROMETER ON THETA PINCH PLASMAS.....	210
<i>Tao Lan, Sen Zhang, Weixing Ding, Ge Zhuang, Zhengwei Wu, Wenzhe Mao, Chen Chen, Hangqi Xu, Jiaren Wu, Yiming Zu, Zian Wei, Haiyang Zhou, Hai Wang, Xiaohui Wen, Jie Wu, Chu Zhou, Ahdi Liu, Jinlin Xie, Hong Li, Wandong Liu, Rui Cheng, Chijin Xiao, Defeng Kong, Shoubiao Zhang</i>	
FRESNEL ZONE PLATE IMAGING AND SYNTHETIC DIAGNOSTIC MODELING FOR THE OMEGA LASER FACILITY.....	211
<i>Samul Myren, B. Tobias, N. Dunkley, K. A. Flippo, E. Merritt, A. Rasmus, F. Doss, C. Di Stefano, J. Ruby, F. J. Marshall, A. Do</i>	
HIGH REPETITION RATE X-RAY FRESNEL DIFFRACTION RADIOGRAPHY AT THE EXTREME LIGHT LABORATORY	212
<i>Travis D. Griffin, William A. Angermeier, Cameron H. Allen, Tyreis Gatson, Thomas G. White, Tilo Döppner, Matthew Oliver</i>	
UPDATES ON THE X-PINCH PLATFORM AND FARADAY ROTATION IMAGING DIAGNOSTIC ON THE MAIZE PULSED POWER FACILITY.....	213
<i>George V. Dowhan, Akash P. Shah, Nicholas M. Jordan, Ryan D. McBride, Simon N. Bland, Sergey V. Lebedev, Roland A. Smith, Lee Suttle, Sergei A. Pikuz</i>	
CHARACTERIZATION OF VIBRATIONAL AND ROTATIONAL N ₂ SPECTRAL BANDS IN AN ELECTRON BEAM PRODUCED PLASMA VIA A 1.3M HIGH-RESOLUTION MULTI- VIEW SPECTROMETER.....	214
<i>Eric R. Kaiser, Stuart L. Jackson, David D. Hinshelwood, A. Stephen Richardson, Stephen B. Swanekamp, Michael J. Johnson</i>	
THE CRUCIAL ROLE OF DIAGNOSTICS IN IMPROVING OUR UNDERSTANDING OF HIGHENERGY-DENSITY SCIENCE.....	215
<i>Sabrina R. Nagel</i>	
A DISCONTINUOUS GALERKIN FINITE ELEMENT METHOD FOR A CLASS OF SPHERICAL HARMONIC EXPANSIONS OF THE BOLTZMANN EQUATION.....	216
<i>David A. Kessler, Stephen B. Swanekamp, Steve Richardson, Paul E. Adamson, Lina Petrova</i>	
BENCHMARKED AND UPGRADED PARTICLE-IN-CELL SIMULATIONS TREATING EXCITED STATE ATOMS AS A FLUID IN ARGON DISCHARGE.....	217
<i>De-Qi Wen, Janez Krek, Jon T. Gudmundsson, Emi Kawamura, Michael A. Lieberman, John P. Verboncoeur</i>	
ADJOINT APPROACH TO ANALYSIS OF EXTERNAL CIRCUIT EFFECTS IN VACUUM ELECTRONIC DEVICES	218
<i>Alexander N. Vlasov, Igor A. Chernyavskiy, Thomas M. Antonsen, David P. Chernin</i>	
LIBS ON THE RED PLANET: EXPLORATION OF ANOTHER WORLD USING CHEMCAM AND SUPERCAM.....	219
<i>Roger C. Wiens</i>	

WIDEBAND AMPLIFICATION OF TRANSIENT SIGNALS FOR APPLICATION IN PULSE COMPRESSION	220
<i>A. R. Young, C. G. Whyte, C. W. Robertson, P. Macinnes, A. D. R. Phelps, A. W. Cross, L. Zhang, C. R. Donaldson, K. Matheson, K. Ronald</i>	
THE NON-LINEAR HIGH-POWER MICROWAVE COMPLETE ABSORPTION PHENOMENON IN A PLASMA FILLED WAVEGUIDE	221
<i>Yang Cao, John G. Leopold, Yuri P. Bliokh, G. Leibovitch, Yakov Krasik</i>	
THZ-SPECTRUM OF MEGAWATT POWER FLUX GENERATED BY REB IN A PLASMA COLUMN WITH A STRONG DENSITY DROP AT THE OUTPUT END	222
<i>A. V. Arzhannikov, P. V. Kalinin, A. A. Kasatov, S. A. Kuznetsov, K. N. Kuklin, M. A. Makarov, S. S. Popov, A. F. Rovenskikh, D. A. Samtsov, E. S. Sandalov, S. L. Sinitsky, V. D. Stepanov, V. V. Glinsky, I. V. Timofeev</i>	
CHARACTERISTICS OF PSEUDOSPARK-SOURCED BEAM AND ITS APPLICATION IN THZ SOURCES	223
<i>Liang Zhang, Kevin Ronald, Alan D. R. Phelps, Adrian W. Cross, Jin Zhang, Xiaodong Chen, Jie Xie</i>	
EXPLORING THE UNIVERSE THROUGH DISCOVERY SCIENCE ON NIF	224
<i>Bruce A. Remington</i>	
NONLINEAR EVOLUTION OF THE ION-WEIBEL INSTABILITY IN INTERPENETRATING PLASMAS OF CH, AL, AND CU.....	225
<i>M. J.-E. Manuel, S. Ghosh, R. Jonnalagadda, F. Beg, M. Adamss, P. Tzeferacos, C. M. Huntington, B. A. Remington, J. S. Ross, D. D. Ryutov, H. Sio, G. F. Swadling, S. C. Wilks, H.-S. Park, Y. Sakawa</i>	
MEASUREMENTS OF UNEQUILIBRATED IONS IN HOT, SOLID-DENSITY PLASMAS VIA X-RAY LINESHAPES	226
<i>B. F. Kraus, Lan Gao, K. W. Hill, M. Bitter, P. C. Efthimion, T. A. Gomez, A. Moreau, R. Hollinger, Shoujun Wang, Huanyu Song, J. J. Rocca, R. C. Mancini</i>	
TEMPERATURE EQUILIBRATION DUE TO CHARGE STATE FLUCTUATIONS IN DENSE PLASMAS	227
<i>Rory A. Baggott, Steven J. Rose, Stuart P. D. Mangles</i>	
PULSED-POWER INNOVATIONS NEEDED FOR NEXT-GENERATION, HIGH-CURRENT DRIVERS.....	228
<i>Rick B. Spielman</i>	
THE UNIQUE POSSIBILITIES OF ELECTRON SOURCES WITH A GRID PLASMA CATHODES FOR MODIFICATION OF THE SURFACE OF MATERIALS AND PRODUCTS	229
<i>M. S. Vorobyov, N. N. Koval, P. V. Moskvina, K. T. Ashurova, T. V. Koval, V. I. Shin, V. N. Devyatkov</i>	
UNDERSTANDING HIGH INDUCTANCE POWER FLOW FOR PULSE SHAPED TARGETS ON THE Z MACHINE	230
<i>Andrew Porwitzky, Sonal Patel, Derek Lampa, Brian Hutzel, Nichelle Bennett, Justin Brown, Sakun Duwal</i>	

CHARACTERISTIC EFFECTS OF PULSED POWER GENERATORS OF DIFFERENT ARCHITECTURE ON THE IMPLOSION DYNAMICS OF MID-Z DOUBLE PLANAR WIRE ARRAYS.....	231
<i>Christopher J. Butcher, Victor L. Kantsyrev, Alla S. Safronova, Veronica V. Shlyaptseva, Ishor K. Shrestha, Austin Stafford, Paul C. Campbell, Stephanie M. Miller, Nick M. Jordan, Ryan D. McBride, Ronald M. Gilgenbach, Adam M. Steiner</i>	
SARKAS: A FAST PURE-PYTHON MOLECULAR DYNAMICS SUITE FOR NON-IDEAL PLASMAS	232
<i>Luciano G. Silvestri, Luke J. Stanek, Yongjun Choi, Michael S. Murillo, Gautham Dharuman</i>	
USING DIODE SIMULATIONS TO VERIFY OF PLASMA PHYSICS CODES.....	233
<i>Thomas M. Smith, Keith L. Cartwright</i>	
COMPUTATIONAL 3D MODELING AND SIMULATION OF DC ATMOSPHERIC PRESSURE GLOW DISCHARGE IN HELIUM.....	234
<i>Valentin Boutrouche, Juan Pablo Trelles</i>	
CONFORMAL MAPPING TO SIMULATE NANOSECOND PULSED PLASMA FOR PLASMA SPECIES GENERATION IN TIP-TIP GEOMETRY	235
<i>N. R. Sree Harsha, Allen L. Garner</i>	
COMPARISON BETWEEN MAGNETIZED PLASMA PLUME SOLUTIONS OBTAINED WITH STAGGERED AND COLLOCATED 3D CARTESIAN GRID SCHEMES.....	236
<i>Alberto Modesti, Filippo Cichocki, Eduardo Ahedo</i>	
ELECTROMAGNETIC AND RELATIVISTIC CORRECTIONS TO THE RAMO-SHOCKLEY THEOREM.....	237
<i>Dion Li, Y. Y. Lau, D. Chernin</i>	
SPACE-CHARGE LIMITED CURRENT FOR A NON-PLANAR CROSSED-FIELD DIODE	238
<i>Adam M. Darr, Joshua Pan, Ranajoy Bhattacharya, Jim Browning, Allen L. Garner</i>	
MULTI-DIMENSIONAL SPACE-CHARGE LIMITED CURRENT USING VARIATIONAL CALCULUS AND VACUUM CAPACITANCE.....	239
<i>N. R. Sree Harsha, Allen L. Garner</i>	
UNIFICATION OF PHOTO- THERMIONIC, AND FIELD EMISSION	240
<i>Sarah A. Lang, Adam M. Darr, Allen L. Garner</i>	
SPACE-CHARGE-LIMITED CURRENT FOR NONZERO ELECTRON INJECTION VELOCITY IN NON-PLANAR DIODES	241
<i>Jacob M. Halpern, Adam M. Darr, N. R. Sree Harsha, Allen L. Garner</i>	
CONCEPT AND MODELING OF AN EFFICIENT, HIGH POWER, 0.35 THZ SOURCE	242
<i>Amy J. Maclachlan, Craig W. Robertson, Adrian W. Cross, Alan D. R. Phelps</i>	
SLOW WAVE STRUCTURE ANALYSIS FOR A THZ SOLID STATE TRAVELING WAVE AMPLIFIER.....	243
<i>Matt Hodek, John D. Albrecht, David Smithe</i>	
SPACE CHARGE WAVES IN A 2DEG	244
<i>Peng Zhang, Patrick Wong, John Albrecht, Matt Hodek, David Smithe</i>	
ANALYTICAL AND SIMULATED PERFORMANCE OF DIAMOND PLASMONIC TERAHERTZ FETS	245
<i>Kindred Griffiths, Sergey Baryshev, Christopher Herrmann</i>	

2D-IMAGING OF METHYL IN A HE/CH ₄ NANOSECOND PULSED PLASMA JET BY PHOTO-FRAGMENTATION LASER INDUCED FLUORESCENCE	246
<i>Dirk C. M. Van Den Bekerom, Erxiong Huang, Jonathan H. Frank</i>	
N ₂ OXIDATION PATHWAYS IN A NS-PULSED DISCHARGE ABOVE WATER: O ATOMS, NO, AND OH RADICALS KINETICS	247
<i>Mikhail Gromov, Kseniia Leonova, Nikolay Britun, Rony Snyders, Nathalie De Geyter, Rino Morent, Anton Nikiforov</i>	
OPTICAL TRAPPING OF SINGLE PARTICLES IN PLASMA FOR PLASMA DIAGNOSTICS.....	248
<i>Pubuduni Ekanayaka, Chuji Wang</i>	
MEASURING MULTIPLE PLASMA REACTIVE SPECIES IN COMPLEX SETTINGS USING AN INNOVATIVE APPROACH OF CAVITY RINGDOWN SPECTROSCOPY	249
<i>Rongrong Wu, Chuji Wang</i>	
OPTICAL DIAGNOSTIC OF AIR SURFACE DIELECTRIC BARRIER DISCHARGE PLASMA.....	250
<i>Pnsr Srikar, S. M. Allabakshi, S. M. Maliyekkal, R. K. Gangwar</i>	
A HUMAN-CONTACTABLE PLASMA BRUSH APPLIED IN BIOMEDICAL FIELD.....	251
<i>Jiaqi Yang, Xinglei Cui, Shanshan Jin, Zhi Fang</i>	
A PORTABLE PHOTOCATALYTIC OXIDATION SYSTEM FOR REUSE OF N95 FILTERING FACE-MASK RESPIRATORS	252
<i>Kiran, Ramavtar, Shivam Chaturvedi, Rajneesh Chaurasiya, Ankur Gupta, Shankar Manoharan, Deepak Fulwani, Ambesh Dixit, Ram Prakash</i>	
THE USE OF LASER-INDUCED BREAKDOWN SPECTROSCOPY FOR BACTERIAL DETECTION, QUANTIFICATION, AND IDENTIFICATION.....	253
<i>Emma J. Blanchette, Steven J. Rehse</i>	
COMBINED UVC AND DBD PLASMA DEACTIVATION OF AEROSOLIZED BACTERIA	254
<i>Bhavya Bellannagari, Sohail H. Zaidi, Prasun K. Datta</i>	
OZONE PRODUCTION BY DIELECTRIC BARRIER DISCHARGE PLASMA FOR COVID AND MICROBIAL INACTIVATION	255
<i>Esra Karaca, Ali Gulec, Burcu Tenderis, Emir Baran Ozkaptan, Mehmet Ali Titrek, Orkun Nuri Asan, Ali Oz, Lutfi Oksuz</i>	
COMPUTATIONALLY ASSESSING DIAMOND FOR USE IN ULTRAFAST PULSE SHAPERS	256
<i>Christopher Herrmann, Joe Croman, Sergey Baryshev</i>	
NUMERICAL MODELING OF RADIATION FOR THE NRL ARF* LASER	257
<i>Tz. B. Petrova, M. F. Wolford, M. C. Myers, G. M. Petrov, J. L. Giuliani, A. Dasgupta, M. W. McGeoch, A. J. Schmitt, S. P. Obenschain</i>	
RELATIVISTIC TRAVELING WAVE AMPLIFIER BASED ON TWO ELECTRON BEAMS	258
<i>Ahmed Elfrgani, Khandakar Nusrat Islam, Edl Schamiloglu</i>	
CASCADE ELECTRON SOURCE BASED ON HORIZONTAL TUNNELING JUNCTION	259
<i>Zhiwei Li, Xianlong Wei</i>	
COUPLING HIGH-K FIELDS IN SURFACE PLASMONIC RADIATION GENERATORS TO FREE SPACE RADIATION USING CURVED HYPERBOLIC METAMATERIAL.....	260
<i>Nalini Pareek, Anirban Bera, Niladri Sirkar</i>	

ATOMIC LAYER DEPOSITION AND CHEMICAL VAPOR DEPOSITION OF MULTIPACTOR SUPPRESSION COATINGS.....	261
<i>R. Lawrence, Chris Oldham, Art Fortini</i>	
MEASUREMENTS OF THE IMPLoding PLASMA SHEATH IN TRIPLE NOZZLE GAS- PUFF Z PINCHES ON 1-MA COBRA	262
<i>Eric Sander Lavine, Sophia Rocco, William Potter, Jacob Banasek, Jay Angel, Euan Freeman, David Hammer, Bruce Kusse</i>	
VISIBLE SPECTROSCOPY STUDIES IN GAS PUFF Z-PINCHES AT 1-MA ON COBRA.....	263
<i>N. Qi, J. Banasek, J. Angel, E. Freeman, S. Rocco, E. Lavine, W. Potter, J. Greenly, D. Hammer, B. Kusse</i>	
EFFECTS OF PRE-IONIZATION ON CURRENT DISTRIBUTION IN A GAS-PUFF Z-PINCH	264
<i>Akash P. Shah, Brendan J. Sporer, George V. Dowhan, Nicholas M. Jordan, Ryan D. McBride, Kristi W. Elliott, Mahadevan Krishnan</i>	
FEATURES OF NEUTRON EMISSION IN EXPERIMENTS WITH DEUTERIUM HYBRID GAS-PUFF	265
<i>Jakub Cihakardt, Daniel Klir, Josef Kravarik, Pavel Kubes, Vojtech Munzar, Karel Rezac, Alexander V. Shishlov, Rustam K. Cherdizov, Fedor I. Fursov, Vladimir A. Kokshenev, Nikolay E. Kurmaev, Nikolay A. Ratakhin, Stuart L. Jackson, Joseph T. Engelbrecht, Gennady N. Dudkin, Valery A. Varlachev, Karel Turek</i>	
SCALING OF EFFICIENT AR K-SHELL EMISSION FROM FAST GAS-PUFF Z-PINCHES IN THE 10 TO 100 MA CURRENT RANGE	266
<i>V. Tangri, J. L. Giuliani, A. Dasgupta, A. L. Velikovich, N. D. Ouart, M.-A. Schaeuble, J. Schwarz, D. J. Ampleford, R. A. Vesey, B. Jones</i>	
RADIOACTIVITY INDUCED BY A LOCAL MASS INJECTION INITIATED DENSE PLASMA FOCUS.....	267
<i>Stuart L. Jackson, David Mosher, Eric R. Kaiser, Andrey R. Beresnyak, Robert J. Commisso, Paul E. Adamson, Arati Dasgupta, Joseph W. Schumer, Evan E. Groopman, David G. Willingham, Daniel Klir, Karel Rezac, Jakub Cihakardt</i>	
EFFECT OF ANODE SHAPE AND HOLLOW ON NEUTRON YIELD IN A 4.4 KJ DENSE PLASMA FOCUS DEVICE	268
<i>Veronica Eudave, Eric Hahn, Swarvanu Gosh, Jeff Narkis, Fabio Conti, Farhat N. Beg</i>	
X-RAY SPECTROSCOPIC STUDIES OF HYBRID X-PINCHES WITH 20PS TIME RESOLUTION.....	269
<i>Ahmed T Elshafiey, David Hammer, Sergei Pikuz, Tania Shelkovenko</i>	
LINER ON TARGET GAS PUFF Z-PINCHES WITH DIFFERENT GAS SPECIES ON THE CESZAR LINEAR TRANSFORMER DRIVER.....	270
<i>F. Conti, J. Narkis, N. Aybar, A. Williams, V. Fadeev, F. N. Beg</i>	
HIGH-K MM-WAVE SCATTERING DIAGNOSTIC FOR MEASURING POLOIDAL WAVENUMBER ELECTRON-SCALE TURBULENCE ON MAST-U	271
<i>D. C. Speirs, A. D. R. Phelps, K. Ronald, V. H. Hall-Chen, A. R. Field, R. G. L. Vann</i>	
SYSTEM-ON-CHIP APPROACH MICROWAVE DIAGNOSTICS DEVELOPMENT FOR BURNING PLASMA.....	272
<i>Yilun Zhu, Guanying Yu, Ying Chen, Calvin Domier, Jon Dannenberg, N. C. Luhmann</i>	

CALCULATION OF ARC TEMPERATURE DISTRIBUTION CONSIDERING CONTACT STRIP DESCENT IN ELECTRIC RAILWAY	273
<i>Honoka Morishita, Yoshifumi Maeda, Zhenwei Ren, Yusuke Nemoto, Takamasa Hayasaka, Toru Iwao</i>	
NUMERICAL SIMULATION OF CATHODE JET DISTRIBUTION CONTRIBUTING TO MOVEMENT OF CATHODE SPOT IN VACUUM ARC	274
<i>Masahiro Takagi, Yusuke Nemoto, Zhenwei Ren, Hiroto Suzuki, Toru Iwao</i>	
ANALYSIS OF ARC TEMPERATURE DISTRIBUTION AFFECTED BY OPENING SPEED IN AIR CIRCUIT BREAKER.....	275
<i>Shinichiro Kashiwagi, Zhenwei Ren, Yusuke Nemoto, Yuki Suzuki, Yoshifumi Maeda, Toru Iwao</i>	
CALCULATION OF ARC TEMPERATURE DISTRIBUTION AFFECTED BY CHANGING PRESSURE IN SHORT ARC LAMP	276
<i>Kazumasa Minamisawa, Zhenwei Ren, Yusuke Nemoto, Yuki Suzuki, Yoshifumi Maeda, Toru Iwao</i>	
PRODUCTION OF TRAPPED DEUTERIUM VIA DEUTERON-CATHODE BOMBARDMENT IN A DC GLOW DISCHARGE.....	277
<i>Erik Ziehm, George H. Miley</i>	
CONTRIBUTION OF OPENING SPEED FOR REDUCTION OF HIGH TEMPERATURE REGION IN A DOUBLE-FLOW CIRCUIT BREAKER IS INVESTIGATED USING THREE-DIMENSIONAL ELECTROMAGNETIC THERMOFLUID SIMULATION	278
<i>Wataru Fuse, Yuki Suzuki, Yusuke Nemoto, Zhenwei Ren, Toru Iwao</i>	
ANALYSIS OF LOCAL AND NONLOCAL ELECTRON KINETICS THROUGH ENERGY RELAXATION PROCESS IN A CAPACITIVE RF PLASMA.....	279
<i>Heesung Park, Hae June Lee</i>	
SURFACE DIELECTRIC BARRIER DISCHARGE BASED LARGE VOLUME PLASMA ACTIVATED WATER.....	280
<i>Shikha Pandey, Kiran Ramavtar, Pankaj Pareek, Ram Prakash.</i>	
EFFECT OF NEUTRAL RADICAL ON SULFUR DEFECT FORMATION IN MONOLAYER MOS ₂ USING MICROWAVE PLASMA.....	281
<i>Shuya Asada, Akihisa Ogino</i>	
LASER-INDUCED BREAKDOWN SPECTROSCOPY FOR ENVIRONMENTAL ENGINEERING APPLICATIONS.....	282
<i>Mohammad H. Kabir, Foroogh Mehravaran, Robert Fedosejevs, Mohamed Gamal El-Din, Amina E. Hussein, Fatima Keserwan</i>	
DIODE PHYSICS: FROM CHILD-LANGMUIR TO PASCHEN'S LAW	283
<i>Allen L. Garner</i>	
PROGRESS ON MACHINE LEARNING INFORMED DESIGN OPTIMIZATION FOR DOUBLE SHELL CAPSULE GRADED DENSITY INNER LAYER TARGETS	284
<i>Nomita Vazirani, Michael J. Grosskopf, David J. Stark, Paul Bradley, B. Haines, Eric Loomis, Scott L. England, Wayne Scales</i>	
KINETIC MODELING OF EMISSIVE SHEATHS IN FLOWING PLASMA.....	285
<i>Moises A. Enriquez, Nakul Nuwal, Deborah A. Levin</i>	

ENGINEERED ELECTRICAL CONTACTS.....	286
<i>Sneha Banerjee, John Luginsland, Peng Zhang</i>	
LARGE EDDY SIMULATION ON THE CHARACTERISTICS OF FLOW OF ARGON THERMAL PLASMA JET	287
<i>Xu Zhou, Xianhui Chen, Taohong Ye</i>	
PHASE LOCKED HIGH POWER X-BAND MICROWAVE SOURCES	288
<i>Philip Macinnes, Craig R. Donaldson, Amy J. Maclachlan, Colin G. Whyte, K. Ronald, Alan D. R. Phelps, Adrian W. Cross</i>	
AN ELECTRON POPULATION ANALYSIS TECHNIQUE FOR UNDERSTANDING FUNDAMENTAL CROSS-FIELD ELECTRON DEVICE PHYSICS.....	289
<i>Andong Yue, Jim Browning, Mike Worthington, John Cipolla</i>	
INVESTIGATIONS OF THE RECIRCULATING PLANAR CROSSED-FIELD AMPLIFIER.....	290
<i>Christopher J. Swenson, Drew A. Packard, Stephen V. Langelotti, Emma Guerin, Nicholas M. Jordan, Y. Y. Lau, Ryan D. McBride, Ronald M. Gilgenbach</i>	
EXTENDED INTERACTION CIRCUIT BASED ON TWO BEAMS WITH ARBITRARY UNIFORMITY FOR HIGH POWER SUB-TERAHERTZ APPLICATIONS	291
<i>Liangjie Bi, Yong Yin, Bin Wang, Hailong Li, Lin Meng</i>	
NONLINEAR AND SELF-CONSISTENT FORMULATION FOR TM-MODE GYROTRONS	292
<i>Hsin-Yu Yao, Cheng-Hsiung Wei, Tsun-Hsu Chang</i>	
STUDIES ON ELECTRON BEAM TRANSPORT IN A LINEAR INDUCTION ACCELERATOR FOR FREE ELECTRON LASER APPLICATION	293
<i>E. S. Sandalov, S. L. Sinitsky, D. I. Skovorodin, D. A. Nikiforov, M. G. Atlukhanov, P. A. Bak, M. F. Blinov, A. V. Burdakov, V. V. Kurkuchekov, P. V. Logachev, A. V. Petrenko, Yu. A. Trunev, K. I. Zhivankov, N. S. Ginzburg, N. Yu. Peskov</i>	
PARTICLE-IN-CELL SIMULATIONS OF ION DYNAMICS IN A PINCHED-BEAM DIODE.....	294
<i>J. C. Foster, S. B. Swanekamp, D. D. Hinshelwood, A. S. Richardson, P. E. Adamson, J. W. Schumer, P. F. Ottinger, D. Mosher</i>	
ANALYTICAL AND SIMULATION STUDY OF MULTIBEAM ELECTRON GENERATION FOR HIGH POWER MICROWAVE SOURCES.....	295
<i>K. N. Islam, A. D. Andreev, S. Portillo, A. Elfrgani, E. Schamiloglu</i>	
ENERGY DISTRIBUTION OF THE RELATIVISTIC ELECTRON BEAM AFTER BEAM- PLASMA INTERACTION RESULTING IN THZ RADIATION EMISSION	296
<i>D. A. Samtsov, A. V. Arzhannikov, S. L. Sinitsky, M. A. Makarov, K. N. Kuklin, S. S. Popov, P. V. Kalinin, E. S. Sandalov</i>	
ELECTROSTATIC CUMULATION IN A FLOW OF CHARGED PARTICLES: A CONVENIENT RESEARCH INSTRUMENT FOR HIGH ENERGY DENSITY PHYSICS	297
<i>Sergei V. Anishchenko, Vladimir G. Baryshevsky, Alexandra A. Gurinovich</i>	
MODELING TEMPORAL SPOT SIZE EVOLUTION ON A LINEAR INDUCTION ACCELERATOR.....	298
<i>M. E. Weller, T. J. Burris-Mog, E. R. Scott, C. A. Ekdahl, B. T. McCuistian</i>	

CHARACTERIZATION OF NEUTRON BEAMS GENERATED IN HIGH-INTENSITY INTERACTIONS FOR NUCLEAR PHYSICS EXPERIMENTS	299
<i>Vincent Lelasseux, Julien Fuchs, Konstantin Burdonov, Sandra Dorard, Alice Fazzini, Pär-Anders Söderström, Florin Negoita, Soichiro Aogaki, Sophia N. Chen, Marius Gugu, Florin Rotaru, Oswald Willi, Mirela Cerchez, Sergej Pikuz</i>	
RECENT SIMULATIONS OF NOZZLE GAS FLOW AND GAS-PUFF Z-PINCH IMPLOSIONS WITH MAGNETIC FIELDS IN THE WEIZMANN Z-PINCH	300
<i>Varun Tangri, John L. Giuliani, Arati Dasgupta, Tal Queller, Eyal Kroupp, Yitzhak Maron</i>	
A MODEL FOR K-SHELL X-RAY YIELD FROM MAGNETIC IMPLOSIONS AT SANDIA'S Z MACHINE	301
<i>Jens Schwarz, Roger A. Vesey, David J. Ampleford, Marc-Andre Schaeuble, Brent Jones, Alexander L. Velikovich, John L. Giuliani, Varun Tangri, Nicholas D. Ouart, Arati Dasgupta</i>	
THEORETICAL STUDY OF GAS-PUFF AND LASER IRRADIATED GAS JET M-SHELL XENON EXPERIMENTS RADIATING BETWEEN 9-14Å	302
<i>A. K. Gill, A. S. Safronova, R. R. Childers, V. L. Kantsyrev, V. V. Shlyaptseva</i>	
INVESTIGATION OF CH FOAMS DOPED WITH TITANIUM AS A COLD X-RAY SOURCE ALTERNATIVE	303
<i>N. D. Ouart, A. Dasgupta, A. L. Velikovich, J. L. Giuliani, V. Tangri, M.-A. Schaeuble, J. Schwarz, D. Ampleford, R. A. Vesey, B. Jones</i>	
EFFECT OF INSULATOR SLEEVE LENGTH ON NEUTRON YIELD IN A 4.4 KJ DENSE PLASMA FOCUS DEVICE	304
<i>S. Ghosh, E. Hahn, V. Eudave, F. Conti, J. Narkis, F. N. Beg</i>	
NEUTRON TIME-OF-FLIGHT MEASUREMENTS ON THE VERUS RESEARCH 750KJ DENSE PLASMA FOCUS	305
<i>R. H. Dwyer, C. Willis, M. Butcher</i>	
SYNTHESIS OF HYDROGEN PEROXIDE BY UNDERWATER BUBBLING MULTI-MODE DISCHARGE	306
<i>Xu Lu, Sen Wang, Zhi Fang</i>	
INFLUENCE OF RF BIAS PHASE ON INDUCTIVELY COUPLED PLASMA FOR MATERIAL PROCESSING	307
<i>Ivan P. Ganachev, Haruka Nakano, Keiji Nakamura</i>	
HELICAL SHAPED PLASMA JET: INTRODUCING AN EXCLUSIVE BEHAVIOR OF ATMOSPHERIC PRESSURE PLASMA	308
<i>Mahreen, G Veda Prakash, Satyananda Kar, Debaprasad Sahu, Ashish Ganguli</i>	
EVALUATION OF THE TRANSIENT PLASMA IGNITION OF METHANE/AIR UNDER LEAN-BURN CONDITIONS.....	309
<i>Meimei Lai, Chunqi Jiang, Sayan Biswas, Isaac Ekoto</i>	
DEVELOPMENT OF DUAL-PULSE LASER INDUCED BREAKDOWN SPECTROSCOPY SYSTEMS IN NUCLEAR POWER PLANT APPLICATIONS	310
<i>Jian Wu, Yan Qiu, Zhi Zhang, Xingwen Li, Yuhua Hang</i>	
MEEK'S CRITERIA FOR BREAKDOWN EXAMINED IN AIR USING A NEEDLE-TO-PLATE CONFIGURATION	311
<i>Dan Wozniak, Md Ziaur Rahman, Chunqi Jiang, Asif Iqbal, Sneha Banerjee, John Verboncoeur, Peng Zhang</i>	

PULSE-BY-PULSE STREAMER-TO-LEADER TRANSITION IN N ₂ -SF ₆ MIXTURES UNDER REPETITIVE SUB-MICROSECOND PULSES	312
<i>Zheng Zhao, Zhifeng Dai, Anbang Sun, Jiangtao Li</i>	
INVESTIGATION OF THE NANOSECOND PULSED GUIDED STREAMER INITIATION AND BREAKDOWN USING A RING-TO-PLATE CONFIGURATION	313
<i>Md Ziaur Rahman, Edwin Oshin, Shutong Song, Chunqi Jiang</i>	
DEEP LEARNING MODELS FOR MULTI-SOURCE CORONA DISCHARGE CLASSIFICATION UNDER DC VOLTAGE.....	314
<i>Moein Borghei, Mona Ghassemi</i>	
FLUOROSILICON COATING PREPARED BY HIGH-THROUGHPUT LOW-TEMPERATURE PLASMA FOR PROMOTING SURFACE CHARGE DISSIPATION OF POLYSTYRENE.....	315
<i>Penghao Zhang, Liang Yu, Xingyu Tao, Wenjie Sun, Shoulong Dong, Chenguo Yao</i>	
RESEARCH ON THE OVERCURRENT-SHORT CIRCUIT PROTECTION METHOD OF NANOSECOND PULSE POWER SUPPLY APPLIED IN THE FIELD OF GLIDING ARC DISCHARGE	316
<i>Chunhui Zhang, Shanshan Jin, Zhi Fang</i>	

Author Index