

CONTENTS

<i>Reinard Becker</i>	15	The Design of Beam-welding and Beam-melting Optics
<i>V.F. Tregubov, A.V. Tregubov</i>	20	Analyzis Exactness of Electric Field Calculation with Integral Method in Open Research System
<i>V.F. Tregubov</i>	23	Simulation Point-Emitters in Open Research System
<i>V. I. Engelko, G. Mueller, V. S. Kuznetsov, G. A. Vyazmenova, V. F. Tregubov</i>	25	Limiting Currents in Electron Sources of Triode Type with Radial Converging Electron Flow
<i>V. I. Engelko, V. S. Kuznetsov, V. O. Kuryshv, G. Mueller, G. A. Vyazmenova</i>	28	Electron Source of Triode Type with Radial Converging Electron Flow
<i>G. Mladenov</i>	33	Phase Space Analysis of the Intense Electron Beams
<i>Jan Bärtle, Thorsten Löwer, Dietrich Von Dobeneck</i>	41	Electron beam welding beyond the ordinary scale
<i>Kathrin Voges, Tim Welters, Stefan Böhm, Klaus Dilger</i>	46	The Application of Monte-Carlo Methods to Electron-Beam Interactions with Solids for the Prediction of Micromachining Capabilities
<i>Elena Koleva, Christian Menhard, Thorsten Loewer, Georgy Mladenov</i>	51	Emittance Calculation Based on the Current Distribution Measurements at Changes of the Beam Focusing
<i>U. Dilthey, H. Masny</i>	61	Diagnosis and Beam Measurement in Non-Vacuum Electron Beam Welding
<i>Jürgen Fath, Thorsten Löwer</i>	66	Industrial Applications of Backscattered Electrons in Modern EB-Welding Machines
<i>B.G.I. Dance, A.L.Buxton</i>	70	<i>Surfi-Sculpt</i> TM A New Electron Beam Processing Technology
<i>Rolf Zenker, Anja Buchwalder, Sven Thiemer, Jens Backofen</i>	78	Electron Beam Surface Contouring
<i>A. A. Kaydalov, V. A. Sokirko</i>	82	Demagnetization of Products before Welding
<i>G. Mladenov, E. Koleva, P. Petrov, Ch. Georgiev, P. Vlaev</i>	87	Electron Beam Welding of Dissimilar Materials
<i>C. Y. Ho, M. Y. Wen, D. N. Chen, S. Y. Lin, J. E. Ho</i>	93	An Analytical Model Predicting Temperatures in the Cavity Induced by Electron-Beam Welding
<i>S.I.Belyuk, A.G.Rau, I.V.Osipov, N.G.Rempe</i>	98	Electron Beam Equipment Based on a Plasma Cathode Gun
<i>Thorsten Löwer, Uwe Clauss, Dietrich Von Dobeneck</i>	101	Innovations in Electron Beam Welding stimulate new applications
<i>Dietrich Von Dobeneck</i>	105	Electron Beam Welding – Trends and Industrial Applications
<i>V. Burdovitsin, I. Zhirkov, E. Oks</i>	110	Electron Gun for Focused Beam Generating In 1-10 Pa Pressure Range
<i>S.I.Belyuk, A.G.Rau, I.V.Osipov, N.G.Rempe, V. F. Shevchenko, S.V.Skvorcov</i>	112	Electron beam facing machine
<i>S.V. Denbnovetskiy, V.G. Melnik, I.V. Melnik, B.A. Tugay</i>	115	Application of Glow Discharge Electron Guns for Plasma Activated Deposition of Coatings
<i>V.G. Melnik, I.V. Melnik, B.A. Tugay, M.V. Chayka, V.M. Vasyura, M.P. Kondratij</i>	119	Technological Equipment for Electron Beam Refusing on the Base of Glow Discharge Electron Guns
<i>N.Grechanyuk, P.Kucherenko, I.Grechanyuk, P.Shpak</i>	122	Modern Technologies and Equipment for Obtaining of new Materials and Coatings
<i>V.Grechanyuk, Y.Artyukh, I.Grechanyuk</i>	129	Corrosive and Thermal Stability of Composition Materials on the base of Copper, Obtained by the EB-PVD Method
<i>V. Mushegyan, P. Shpak, N. Grechanyuk</i>	133	Obtaining of Molybdenum Ingots by Electron-Beam Melting
<i>E. Koleva, V. Vassileva, K. Vutova, G. Mladenov</i>	136	Electron Beam Melting and Refining of Refractory and Reactive Metals.
<i>Yuri Kolesnikov, Christian Karcher, André Thess</i>	141	Control of Convective Heat Transfer during Electron Beam Evaporation Using Rotating Magnetic Fields
<i>Christian Karcher, Vaclav Kocourek, Michael Conrath</i>	147	Electromagnetic Dome-Shaping during Electron Beam Evaporation: Model Experiments and Analytical Modeling
<i>Michael Conrath, Christian Karcher</i>	153	Static Dome-Shaping in Transient Magnetic Fields
<i>A.P.Semenov, I.A.Semenova, G.N. Churilov, N.V.Bulina, A.A.Semenova</i>	158	Application of Electron Beam Explosive Evaporation of Fullerenes in Vacuum for Thin Films Deposition

<i>A. Wiatrowski, W.M. Posadowski, B. Kulakowska-Pawlak, A. Brudnik, J. Felba</i>	161	Optical emission spectroscopy studies of DC and medium frequency magnetron sputtering discharges
<i>S. Boiadjev, M. Rassovska</i>	167	TiO ₂ Thin Film Preparation by Electron Beam Evaporation
<i>G. Dobrikov, M. Rassovska, E. Kashchieva</i>	170	Physical Properties and Microstructure of Indium-Tin Oxide Thin Films
<i>J. Zemek, K. Olejnik, W.S.M. Werner</i>	173	Electron Elastic Backscattering from Corrugated Silicon Surfaces
<i>Y. Sarov, D. Todorov, I. Capek, V. Sarova, B.E. Volland, H. Hillmer, J.P. Reithmaier, I. W. Rangelow</i>	175	Optimization of the Diffraction from a Grating under Total Internal Reflection and its Applications for Microfluidic Sensing
<i>D. Dimov, A. Georgiev, E. Spassova, I. Karamancheva, G. Danev</i>	180	“Soft” Electrons and Low Energy Polyimide Precursor Molecules. Collision and Formation of Nanocomposites of a New Destiny
<i>T. Tanaka, T. Ichikisaki, I. Wakamoto, T. Takagi</i>	183	Effect of Ion Dose and Energy on Sterilization Using Plasma-Based Ion Implantation
<i>K. Vutova, G. Mladenov, T. Tanaka, T. Takagi</i>	186	Investigation of Ion Penetration in Silicon during Plasma-Based Ion Implantation
<i>Tomasz Falat, Jan Felba</i>	189	Electron beam as a heat source in thermal diffusivity measurement of thermally conductive adhesives
<i>E. Koleva, K. Vutova, G. Mladenov</i>	194	Modeling of Exposure and Development of Resist Profiles
<i>A. Misiuk, B. Surma, J. Bak-Misiuk, I.V. Antonova, W. Jung, M. Prujarczyk</i>	199	Stress - Induced Defects in Processed Electron - Irradiated Cz-Si
<i>D. I. Martin, G. Craciun, I. Togoe, E. Manaila, D. Ighigeanu, I. Margaritescu, N. Iacob, C. Matei, C. Oproiu</i>	204	Innovative Technologies with Electron Beam and Microwave for Food Safety
<i>D. Ighigeanu, D. Martin, I. Calinescu, C. Matei</i>	209	Hybrid Technique with Electron Beam, Microwave and Catalyst for Volatil Organic Compounds Removal
<i>E. Manaila, D. I. Martin, G. Craciun, M. Moisescu, E. Kovacs, T. Savopol, D. Ighigeanu, I. Margaritescu, N. Iacob, I. Stoian, C. Matei, C. Oproiu</i>	214	Radiation Effects on Human Leukocyte Cultures with Bleomycin
<i>G. Craciun, D. I. Martin, D. Stan, I. Baci, E. Manaila, D. Ighigeanu, I. Margaritescu, D. Chirita, C. Matei, N. Iacob, C. Oproiu</i>	219	Effects of Electron Beam Irradiation on Human Blood Proteins
<i>Monica R. Nemptanu, R. Minea, Ecaterina Mitru</i>	224	Application of Accelerated Electron Beams for Modifying Corn Starch
<i>R. Minea, Monica R. Nemptanu, Ecaterina Mitru</i>	227	Preliminary Results Regarding the Processing of Sea Buckthorn by Electron Beam Irradiation
<i>A.B. Markov, R. Günzel, H. Reuther, N. Shevchenko, V.P. Rotshtein, Yu. Kh. Akhmadeev, P.M. Schanin</i>	230	Effect of Electron-Beam Treatment on Subsequent Titanium Alloy Nitriding
<i>P. Petrov</i>	234	Surface Modification of Aluminum Alloys Using High Intensity Beams
<i>W. Jung, A. Misiuk, J. Felba, I. G. Megela, Yu. Azhniuk, M. Prujarczyk</i>	238	Electrical Properties of Electron – Irradiated Cz-Si after Processing under Enhanced Hydrostatic Pressure
<i>S.Yu. Sokovnin, M.E. Balezin</i>	241	Frequency Nanosecond Electron Accelerators type URT
<i>A. S. Ivanov, V. P. Maznev, V. P. Ovchinnikov, M. P. Svinin, N. G. Tolstun</i>	245	“Electron” and “Aurora” Accelerators in Industrial Radiation Technologies
<i>E.A. Azizov, A.I. Emelyanov, V.A. Yagnov</i>	248	Underwater Electrical Discharge with a Large Surface of Radiation
<i>D.N. Devisilov, I.E. Filatov, D.L. Kuznetsov, S.A. Salaev, Yu.S. Surkov, Yu.N. Novoselov</i>	252	Electron Beam, X-Ray, and Non-Thermal Plasma Source on the Base of Compact Rep-Rated High-Voltage Generator
<i>J. Z. Gleizer, D. Yarmolich, A. Krokmal, Ya. E. Krasik</i>	257	Generation of high-current electron beams in a diode with a hollow anode plasma source
<i>D. Yarmolich, V. Vekselman, H. Sagi, V. Tz. Gurovich, Ya. E. Krasik</i>	262	Micro-Particles Flux Generation During Ferroelectric Plasma Source Operation
<i>N. Doutskinov, M. Stefanova, S. P. Marinov, A. Mastral, M. Callen, P. Gadjanov</i>	267	Possibility for Implementation of Electron Beam Technology for Combustion Flue Gases Cleaning
<i>L. Dupák, M. Zobač, J. Dupák, I. Vlček</i>	272	Experimental Device for Electron Beam Micromachining
<i>S. Marghitu, O. Marghitu, M. Rizea, C. Oproiu, M. Vasiliu</i>	276	DIADYN – A Laboratory Setup for Experiments on Low Energy Electron Beams