

VI Scientific Technical Conference on “Low-Temperature Plasma During the Deposition of Functional Coatings” 2014

Journal of Physics: Conference Series Volume 567

**Kazan, Russia
4-7 November 2014**

**ISBN: 978-1-63439-673-8
ISSN: 1742-6588**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 567

[2014](#)

VI Scientific Technical Conference on "Low-temperature plasma during the deposition of functional coatings"
4-7 November 2014, Kazan, Russia

Accepted papers received: 13 November 2014

Published online: 28 November 2014

Preface

011001

[VI Scientific Technical Conference on "Low-temperature plasma during the deposition of functional coatings"](#)

011002

[Peer review statement](#)

Papers

012001

[The influence of the mass flow rate of the electrolyte through the following cathode on the energy characteristics of the gas discharge](#) OPEN ACCESS Kh K Tazmeev, I M Arslanov and G Kh Tazmeev 1

012002

[Apparatus and method for determining the gas permeability and flux of helium through the materials and coatings](#) OPEN ACCESS V T Barchenko, A A Lisenkov and M L Vinogradov 5

012003

[Hydrogen transport through oxide metal surface under atom and ion irradiation](#) OPEN ACCESS L Begrambekov, O Dvoychenkova, A Evsin, A Kaplevsky, Ya Sadovskiy, N Schitov, S Vergasov and D Yurkov 12

012004

[The model of the positive column of a glow discharge with the influence of the acoustic oscillations](#) OPEN ACCESS N F Kashapov, A I Saifutdinov and S A Fadeev 17

012005

[Calculation of distribution of potential near the surface of metal particle in the dust-electron thermal plasma](#) OPEN ACCESS G Dautov, I Fayrushin, N Kashapov and I Dautov 22

012006

[Calculation of distribution of potential and electron concentration in the dust-electron thermal plasma with the axial geometry particles](#) OPEN ACCESS G Dautov, I Fayrushin and N Kashapov 27

012007

[Distribution of electric field near the surface of the aluminum oxide particle in the dust-electron thermal plasma](#) OPEN ACCESS I Fayrushin, I Dautov and A Shamsutdinov 31

012008

[Calculation of the surface tension energy for the metal dust particle in the dust-electron thermal plasma](#) OPEN ACCESS G Dautov, I Fayrushin, N Kashapov and I Dautov 36

012009

[Influence of metal macroparticles to the electron density in a dusty plasma](#) OPEN ACCESS I Fayrushin, N Kashapov and I Dautov 41

012010

[Air plasma sprayed coatings of self-fluxing powder materials](#) OPEN ACCESS E E Kornienko, E J Lapushkina, V I Kuzmin, S P Vaschenko, I P Gulyaev, E V Kartaev, D S Sergachev, N Kashapov, S Sharifullin and I Fayrushin 44

012011

[Acoustic waves in polydispersed bubbly liquids](#) OPEN ACCESS D A Gubaidullin, D D Gubaidullina and Yu V Fedorov 50

012012

[About the basic laws of non-isothermal cross-flow past of a circular cylinder with beads mix](#) OPEN ACCESS V L Fedyaev, I V Morenko and E R Galimov 55

012013

[The study the erosion of the electrodes under the influence moving electric arc](#) OPEN ACCESS A T Gabdrakhmanov, I H Israphilov and A T Galiakbarov 63

012014

[Research of Radio-Frequency Electric Discharge in Electrolyte in the Processes of Surface Treatment](#) OPEN ACCESS Al F Gaisin, I Sh Abdullin, R Sh Basyrov and S Y Petriakov 67

012015

[A calculation of characteristics of creeping discharge using Tepler model for electrical conductivity](#) OPEN ACCESS I G Galeev, B A Timerkaev and R Z Fayzullin 70

012016

[Propagation of Acoustic Waves in Liquid Containing Multilayer Barrier](#) OPEN ACCESS D A Gubaidullin and A A Nikiforov 73

012017

[Numerical simulation of Schlichting streaming induced by standing wave in rectangular enclosure](#) OPEN ACCESS D A Gubaidullin, P P Osipov and R R Nasyrov 77

012018

[Impact of Basset force on threshold values of particle drag coefficient and density parameter in standing sinusoidal wave](#) OPEN ACCESS D A Gubaidullin, P P Osipov and A N Zakirov 85

012019

[Acoustic waves in multifractional gas mixture with the inclusion of different materials and dimensions without Phase Transformations](#) OPEN ACCESS D A Gubaidullin and E A Teregulova 89

012020

[Acoustic waves in bubbly liquids for two kinds of gas bubbles with phase transitions](#)

OPEN ACCESS D A Gubaidullin and R N Gafiyatov 95

012021

[Oscillations of aerosols in the tubes near to resonances](#) OPEN ACCESS D A Gubaidullin,

R G Zaripov and L A Tkachenko 99

012022

[Research on influence of temporary distribution of power of laser radiation with a hybrid processing on a depth heat affected zone](#) OPEN ACCESS D A Bashmakov, I H

Israphilov and A T Galiakbarov 104

012023

[The spatial distribution the thickness of polymer powder coatings for ultrasonic sensors](#)

OPEN ACCESS V A Gavrilova, M G Fazlyyyakhmatov and N F Kashapov 109

012024

[Influence of plasma-electrolyte discharge to the glass surface](#) OPEN ACCESS L N

Kashapov, N F Kashapov and R N Kashapov 114

012025

[Investigation of the process of plasma-electrolyte formation surface microrelief of cobalt chromium alloy](#) OPEN ACCESS L N Kashapov, N F Kashapov and R N Kashapov 119

012026

[Steel surface modification with plasma spraying electrothermal installation using a liquid electrode](#) OPEN ACCESS A A Khafizov, R I Valiev, Yu I Shakirov and R A Valiev

123

012027

[Reactive magnetron sputtering model at making Ti-TiO_x coatings](#) OPEN ACCESS A G

Luchkin and N F Kashapov 128

012028

[Effect of supplementation of water vapor to the environmental characteristics of the combustion of propane-air mixture](#) OPEN ACCESS V M Larionov, G A Mitrofanov and

O V Iovleva 132

012029

[Module for dielectric surfaces modification by fast neutral particles beams](#) OPEN ACCESS V T Barchenko, A A Lisenkov and N A Babinov 135

012030

[Study on parts ion-plasma nitriding](#) OPEN ACCESS I H Israphilov, V V Zvezdin, D I Israphilov and M A Chernova 139

012031

[Control of glow discharge parameters using transverse supersonic gas flow - numerical experiment](#) OPEN ACCESS A I Saifutdinov, B A Timerkaev and B R Zalyaliev 143

012032

[Glow Discharge Characteristics in Transverse Supersonic Air Flow](#) OPEN ACCESS B A Timerkaev, B R Zalyaliev and A I Saifutdinov 148

012033

[The acoustic model of oscillations of gas combustion in coaxial pipes](#) OPEN ACCESS E V Semenova, V M Larionov and E I Kazakova 152

012034

[Synthesis of oxidic powder in nonequilibrium low- temperature plasma with increase of indicators of quality of process](#) OPEN ACCESS R R Saubanov, V V Zvezdin, I H Israfilov, I I Haybullin and R R Rakhimov 156

012035

[Gas discharge with liquid electrolyte cathode in the mode of occurrence of the constricted channels](#) OPEN ACCESS Kh K Tazmeev and A Kh Tazmeev 160

012036

[Longitudinal distribution of electrical parameters in normal glow discharge](#) OPEN ACCESS B A Timerkaev, M M Ahmetov, B R Zalyaliev, O A Petrova and D I Israfilov 164

012037

[Nonlinear oscillations of gas in an open tube near the resonance frequency in the shock-free mode](#) OPEN ACCESS L A Tkachenko and M V Sergienko 169

012038

[Oscillations of a homogeneous gas and drift particles in an external wave field an open tube](#) OPEN ACCESS L A Tkachenko and R G Zaripov 174

012039

[Use of compact spectrometer for plasma emission qualitative analysis](#) OPEN ACCESS A A Uhov, V A Gerasimov, D K Kostrin and L M Selivanov 179

012040

[Phase and structural conditions of low-temperature plasma interaction products with steel](#) OPEN ACCESS R A Valiev, Yu I Shakirov and A N Iliukhin 183

012041

[Studying optical characteristics of an axial symmetric non stationary plasma](#) OPEN ACCESS R S Toukhvatouline, F F Zalyalieva, T A Ashrapov and F I Bashirov 187

012042

[Drift of a flat particle at longitudinal oscillations of gas in an open tube](#) OPEN ACCESS R G Zaripov, L A Tkachenko and Shaydullin L R 191