Table of contents

Volume 151

1st International Telecommunication Conference "Advanced Micro- and Nanoelectronic Systems and Technologies" 22–23 December 2015, Moscow, Russia

Accepted papers received: 5 October 2016 Published online: 17 November 2016

Preface

011001
OPEN ACCESS
1st International Telecommunication Conference "Advanced Micro- and Nanoelectronic Systems and Technologies"

V S Pershenkov and G I Zebrev

011002
OPEN ACCESS
Peer review statement

Papers

012001
OPEN ACCESS
Conversion model of radiation-induced interface-trap buildup and the some examples of its application

V S Pershenkov, A V Sogoyan and V A Telets.....1

012002
OPEN ACCESS
Taking into account the space environments variability for prediction of dose response in bipolar devices

I V Elushov and G I Zebrev.....7
012003
OPEN ACCESS
The development of ion mobility technology
V V Beliakov, A V Golovin, V K Vasilev, E K Malkin, E A Gromov, I A Ivanov, M A Matusko and D Y Lipatov.....10

012004
OPEN ACCESS
Combined methods of tolerance increasing for embedded SRAM
L A Shchigorev and I I Shagurin.....15

012005
OPEN ACCESS
Electrochromic thin-film components for information representation systems
V A Shakhnov, A I Vlasov and S V Tokarev.....20

012006
OPEN ACCESS
Multichannel analog front-end and analog-to-digital converter ICs for silicon photomultipliers
Y I Bocharov and V A Butuzov.....26

012007
OPEN ACCESS
Influence of chip temperature on the hydrogen sensitivity of MISFET-based sensors
B I Podlepetsky, A V Kovalenko and M Y Nikiforova.....33

012008
OPEN ACCESS
ELDRS in a wide range of total doses
V S Pershenkov, D V Savchenkov and V A Telets.....37
Competing nucleation of islands and nanopits in zinc-blend III-nitride quaternary material system

K M Gambaryan, V M Aroutiounian, A K Simonyan and L S Yeranyan.....42

THORON-SCOUT - first diffusion based active Radon and Thoron monitor

W Wagner, T Streil, V Oeser, G Horak and M Dużynski.....46

Evaluation performance of digital integrated circuits while exposed to radiation

V M Barbashov and N S Trushkin.....50

Latch up effect under electromagnetic pulse

V V Shurenkov and D V Gromov.....53

The comparison of radiation hardness of heterojunction SiGe and conventional silicon bipolar transistors

A S Bakerenkov, V A Felitsyn and A S Rodin.....58

Linearity analysis of single-ended SAR ADC with split capacitive DAC

Dmitry Osipov, Evgeny Malankin and Vitaly Shumikhin.....63
Technology and characteristics of the transistor with a channel based on graphene

S A Shostachenko, G I Zebrev, R V Zakharchenko, S V Leshchev and I V Komissarov.....71

Prospects for the use of security air flow to prevent ion-molecule reactions in the ionization and drift zone in classical IMS

A V Golovin, N V Makarova, A A Poturuy and V V Beliakov.....74

Detection heart failures (HF) biomarkers by proton transfer reaction - mass spectrometry and ion mobility spectrometry

Y R Shaltaeva, V K Vasilev, D Y Yakovlev, F Iu Kopylov, A L Syrkin, P Sh Chomakhidze, A A Bykova, L K Malinovskaya and A I Skorokhod.....78

The investigation of ionization conditions in the trace amounts detection of heterocyclic compounds by ion mobility spectrometry and mass spectrometry

Y R Shaltaeva, A A Sysoev, S S Poteshin, K I Negru, S S Grishin, V V Trefilova, M I Zuev and E P Baberkina.....82

Techniques and instrumental complex for research of influence of microwaves encoded by brain neural signals on biological objects' psycho physiological state

B V Gurkovskiy, B V Zhuravlev, E M Onishchenko, A B Simakov, N Yu Trifonova and Yu A Voronov.....86

Miniaturized ceramic platform for metal oxide gas sensors array

N N Samotaev.....93
012021
OPEN ACCESS
Light emitting diode absorption spectroscopy for combustible gas monitoring
S S Fanchenko, A M Baranov, A V Savkin and N N Samotaev.....97

012022
OPEN ACCESS
Investigation of cracks formation in sapphire crystals
S P Malyukov, Y V Klunnikova and E.V. Kirillova.....101

012023
OPEN ACCESS
Effect of mono- and bimetallic nanoparticles Fe, Ni, & Fe/Ni based on carbon nanocomposites on electrocatalytic properties of anodes
K Ranabhat, A I Pylinina, K S Skripkin, E A Sofronova, A A Revina, V E Kasatkin, L N Patrikeev and V A Lapshinsky.....104

012024
OPEN ACCESS
Automotive MEMS sensors based on additive technologies

012025
OPEN ACCESS
Artifacts caused by microwave radiation in cardiac radio telemetry
A B Simakov, B V Gurkovskiy, E M Onishchenko, N Y Trifonova and D S Veselov.....113

012026
OPEN ACCESS
Radiation hardness improvement of analog front-end microelectronic devices for particle accelerator
A G Miroshnichenko, A S Rodin, A S Bakerenko and V A Felitsyn.....116
Simulating nanosecond voltage comparator with improved radiation hardness compatible with PECL logic

A A Lebedev, A E Nazarenko, M S Vakhnenko, V A Komleva and A Y Nikolaev.....122

Aid system for visually impaired people at spatial orientation

K A Palaguta, A I Krukov, S M Troikov and I S Shubnikova.....126

High accuracy magnetic field sensors with wide operation temperature range

I S Vasil'evskii, A N Vinichenko, D I Rubakin, I A Bolshakova and N I Kargin.....131

Thin coatings and films hardness evaluation

V M Matyunin, A Yu Marchenkov, A N Demidov and M A Karimbekov.....135

Carbon dioxide gas sensor based on optical control of color in liquid indicator

K Yu Oblov, A V Ivanova, S A Soloviev, S V Zhdanov, Yu A Voronov and V V Florentsev.....138

Maximum power point tracking for optimizing energy harvesting process

S Akbari, P C Thang and D S Veselov.....143
012033
OPEN ACCESS
Numerical modeling of perovskite solar cells with a planar structure

S P Malyukov, A V Sayenko and A V Ivanova.....147

012034
OPEN ACCESS
Point-of-load switched-capacitor DC-DC converter for distributed power systems

V E Shunkov, O N Kus, V Y Prokopyev, V A Butuzov, Y I Bocharov and V E Shunkov.....151

012035
OPEN ACCESS
About the choice of initial voltages in the synchronous sense amplifier for CMOS memory

Y M Gerasimov, N G Grigoryev and A V Kobylyatskiy.....157

012036
OPEN ACCESS
Low-power low-jitter PLL clock synthesizer for microprocessors with clock range 200-768 MHz

V Baykov and A Garmash.....161

012037
OPEN ACCESS
Pseudomorphic HEMT quantum well AlGaAs/InGaAs/GaAs with AlAs:δ-Si donor layer

A N Vinichenko and I S Vasil'evskii.....165

012038
OPEN ACCESS
Schematic techniques for improving precision and radiation hardness of current feedback operational amplifiers

A A Lebedev, A E Nazarenko, M S Vakhnenko, I I Liakhchilina, N M Klokov and A A Komlev.....169
Using ionization response maps for SET characterisation in UHF mixers

D V Savchenkov and A G Kuznetsov.....174

Impact of recombination on heavy ion induced single event upset cross-section

K S Zemtsov, A M Galimov, M E Gorchichko and I V Elushov.....180

Inner filled constructive material effect on shielding effectiveness of screened electronics in resonance mode

V I Butin and P Ya Kundyshev.....184

Colloidal quantum dots for fluorescent labels of proteins

P Gladyshev, V Kouznetsov, C Martinez Bonilla, S Dezhurov, D Krilsky, A Vasiliev, O Morenkov, V Vrublevskaya, P Tsygankov, S Ibragimova and A Rybakova.....189

Finishing technologies for processing of optical microelectronic items

K R Muratov, T R Ablyaz, E A Gashev, A M Khanov and N V Varlamov.....194

An approach to organic field-effect transistor above-threshold drains current compact modeling that provides monotonic decrease of the output conductance with drain bias increasing

V O Turin, B A Rakhmatov, C H Kim and B Iñiguez.....204
Thermal MEMS flow meter for gaseous working fluids on the basis of the hot-wire thermoanemometric sensor

T A Tsvinskaya, L G Avaeva, P V Grigoriev and S A Mileshin.....209

Attractor property for terminal manifold in control synthesis problem

A Diveev and E Sofronova.....214