

SENM'2015

MicroTherm'2015

**Institute of Materials Science and Engineering
Lodz University of Technology, POLAND**

**Department of Semiconductor and Optoelectronic Devices
Lodz University of Technology, POLAND**

**Institute of Microelectronics and Optoelectronics
Warsaw University of Technology, POLAND**

and

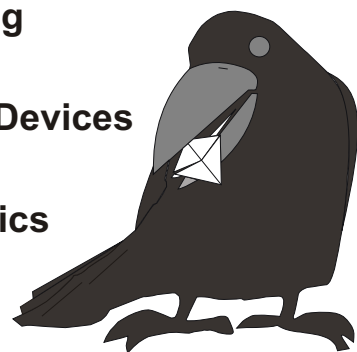
**Committee of Electronics and Telecommunication
together with Committee on Materials Science
of the Polish Academy of Science**

Invite to the Conferences

**'Microtechnology and Thermal Problems in Electronics' and
'Smart Engineering of New Materials'**

23.06 - 25.06.2013

Lodz, Poland



**Ministry
of Science
and Higher
Education**

Republic of Poland

**SENM'2015 and MicroTherm'2015 Duo-conference
is a joint event of two international cyclic conferences:**

SENM'2015
"Smart Engineering of New Materials"
and
MicroTherm'2015
"Microtechnology and Thermal Problems in Electronics"

**The Duo-conference will take place on 23rd-25th June 2015
in Andel's Hotel, which is situated at Ogrodowa St. 17, 91 065 Lodz, Poland.**

The accompanying events:

22nd June 2015 - **SENM 2015 Workshop** (Lodz University of Technology)

26th June 2015 - **Graphene Workshop** (Lodz University of Technology)

The workshops will be held at the Factory of Engineers of the XXI century placed
at Stefanowskiego St. 1/15, 90 924 Lodz, Poland.

SENM'2015 and MicroTherm'2015 Duo-Conference is organised by:

LODZ UNIVERSITY OF TECHNOLOGY, POLAND,
INSTITUTE OF MATERIALS SCIENCE AND ENGINEERING
DEPARTMENT OF SEMICONDUCTOR AND OPTOELECTRONIC DEVICES

with the cooperation of
WARSAW UNIVERSITY OF TECHNOLOGY, POLAND,
INSTITUTE OF MICROELECTRONICS AND OPTOELECTRONICS

and
THE POLISH ACADEMY OF SCIENCE,
COMMITTEE ON MATERIALS SCIENCE,
COMMITTEE OF ELECTRONICS AND TELECOMMUNICATION.

Organising Committee of SENM 2015

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SENM'2015 and MicroTherm'2015 Duo-conference Programme

| Tuesday 23rd June 2015 | SENM'2015 (Conference Room - Satin 1) | MicroTherm'2015 (Conference Room - Satin 2) |
|--|---|---|
| 9:00 – 9:30 | Opening Ceremony | |
| | Plenary Session - 2D Materials <i>Chairmen: J. Schmidt, T. Gotszalk</i> | |
| 9:30 – 10:15 | Invited Speaker <u>J.A. Robinson</u> , <i>Synthesis of transition-metal dichalcogenides and their heterostructures for advanced electronic applications</i> | |
| 10:15 – 10:30 | <u>P. Kula</u> , <i>High Strength Metallurgical Graphene – mechanisms of growth and properties</i> | |
| 10:30 – 10:45 | S. Sambonsuge, S. Jiao, H. Nagasawa, H. Fukidome, S. Filimonov, <u>M. Suemitsu</u> , <i>Formation of qualified epitaxial graphene on Si substrates using two-step heteroepitaxy of C-terminated 3C-SiC(-1-1-1) on Si(110)</i> | |
| 10:45 – 11:00 | <u>Ł. Ruta</u> , J. Piotrowski, A. Kubiak, N. Szczecińska, J. Woźny, Z. Lisik, <i>Infrared photodetectors with graphene layer: fabrication technology</i> | |
| 11:00 – 11:15 | A. Kisielska, K. Spilarewicz, J. Ginter, M. Cichomski, I. Piwoński, <i>The role of graphene in the in situ growth of silver nanoparticles on graphene-TiO₂ photocatalysts</i> | |
| 11:15 – 11:30 | Coffee break | |
| | Carbon Materials <i>Chairmen: J. Musil, K. Fabisiak</i> | Thermal Effects <i>Chairman: R. Pawlak</i> |
| 11:30 – 12:00 | Invited Speaker <u>B.V. Spitsyn</u> , A.E. Alexenko <i>Diamond CVD: the start-up and international development</i> | Invited Speaker <u>U. Soupremanien</u> , H. Le Poche, E. Ollier, C. Kinkelin, F. Lefevre, S. Lips, Y. Kaplan, M. Zegaoui, S. Lhostis <i>Thermal management of transient heat loads in electronic devices using composite materials or metallic alloys</i> |
| 12:00 – 12:15 | <u>Ł. Kaczmarek</u> , W. Tuta, K. Kyzioł, P. Kuśtowski, M. Stegliński, <u>D. Kottfer</u> , M. Klich, D. Batory, W. Szymański, <i>Influence of molecular composition of Al/AIC/a-C:H coatings deposited on AZ31 magnesium alloy on their selected mechanical properties</i> | K. Górecki, <u>K. Górski</u> , <i>The influence of core material on transient thermal impedances in transformers</i> |
| 12:15 – 12:30 | <u>Ł. Kaczmarek</u> , M. Klich, I.G. Brodova, <u>A.N. Petrova</u> , A. Kopia, M. Stegliński, H. Radziszewska, <i>Tribological behavior of carbon coating deposited on the 2024 aluminium alloy after high-pressure torsion process</i> | <u>P.R. Laskowski</u> , K. Szymczyk, S. Wronka, <i>Heat generation in bonding connections as a consequence of the high energy electrons irradiation</i> |
| 12:30 – 12:45 | K. Czyż, <u>J. Marczak</u> , R. Major, A. Mzyk, A. Rycyk, A. Sarzyński, M. Strzelec, <i>Selected laser methods for surface structuring of biocompatible diamond like carbon layers</i> | <u>R. Gozdur</u> , K. Chwastek, M. Najgebauer, M. Lebioda, Ł. Bernacki, A. Wodzyński, <i>The effect of temperature on magnetic properties of LaFeCoSi near the transition point</i> |
| 12:45 – 14:00 | Lunch | |
| | Biomaterials <i>Chairmen: J. Marczak, J.A. Zapien</i> | Reliability and Simulations <i>Chairman: G.D. Licciardo</i> |
| 14:00 – 14:30 | Invited Speaker <u>I.N. Mihailescu</u> , C. Ristoscu, G. Socol, G.E. Stan, L. Duta, I. Negut, A. Visan <i>Smart technology for soft pulsed laser transfer of organic and biological compound</i> | Invited Speaker <u>M. Turowski</u> , <i>Analysis and mitigation of soft errors affecting reliability of modern integrated circuits</i> |
| 14:30 – 14:45 | <u>K. Mitura</u> , M. Mitura-Nowak, M. Marszałek, A. Sobczyk-Guzenda, M. Dudek, D. Bociaga, <i>In vitro examinations of polycrystalline diamond layer (CVD)</i> | V. Hahanov, <u>S. Chumachenko</u> , <u>E. Litvinova</u> , <i>Diagnosis method for SoC HDL-model</i> |
| 14:45 – 15:00 | <u>K. Boruvkova</u> , T. Bakalova, L. Volesky, P. Louda, <i>The influence of nanoadditives on the biological properties and chemical composition of process fluids</i> | P.Di Barba, <u>M.E. Mognaschi</u> , P. Venini, <i>Electro-thermo-elastic microactuator: a coupled-field optimal design problem</i> |
| 15:00 – 15:15 | <u>D. Bociaga</u> , B. Walkowiak, J. Piasecka-Zelga, J. Skowroński, U. Borowska-Skarzyńska, J. Grabarczyk, P. Niedzielski <i>In vitro, in vivo tests and clinical trials of medical alloys modified by carbon coatings for orthopaedy</i> | <u>E. Raj</u> , Z. Lisik, Ł. Ruta, P. Kalinowski, Z. Orman, <i>Numerical analysis of thermoelectrically cooled IR detector</i> |
| 15:15 – 15:30 | L. Duta, <u>C. Ristoscu</u> , E. Axente, A. Visan, I.N. Mihailescu, <i>Morphological and structural characterisation of carbon thin films synthesized by Matrix Assisted Pulsed Laser Evaporation for medical applications</i> | <u>O. Matviykyiv</u> , M. Lobur, D. Lizanets, O. Halushko, <i>Multiscale modelling of droplets manipulation in lab-chip device</i> |
| 15:30 – 16:30 | Poster Session I <i>Chairmen: R. Bogdanowicz, M. Jakubowska and Coffee Break</i> | |
| 18:00 | Welcome Party The White Factory (Piotrkowska St. 282, 93 034 Lodz, Poland – entrance from Milionowa St.) | |

SENM'2015 and MicroTherm'2015 Duo-conference Programme

| Wednesday 24th June 2015 | SENM'2015 (Conference Room - Satin 1) | MicroTherm'2015 (Conference Room - Satin 2) |
|--|--|---|
| | Plenary Session - Wide Band-Gap Materials <i>Chairmen: S. Mitura, M. Suemitsu</i> | |
| 9:00 – 9:45 | Invited Speaker <u>A. Waag</u> , <i>3D GaN technology</i> | |
| 9:45 – 10:00 | <u>D. Pucicki</u> , K. Bielak, M. Badura, W. Dawidowski, B. Ściana, <i>Influence of GaInNAs/GaAs QWs composition profile on the transitions selection rules</i> | |
| 10:00 – 10:15 | S. Kluska, J. Jaglarz, M. Jurzecka-Szymacha, <u>T. Stapinski</u> , B. Swatowska, K. Tkacz-Smiech, <i>On the correlation between the chemical composition of the amorphous a Si_xC_yN_z(H) layers deposited by PACVD and their band gap</i> | |
| 10:15 – 10:30 | G.D. Licciardo, L. Di Benedetto, S. Bellone, <i>Temperature dependency of the forward characteristics of 4H-SiC DMOSFET in presence of SiO₂/SiC interface traps</i> | |
| 10:30 – 10:45 | R. Kabacińska, J. Winiecki, K. Przeglętko, K. Fabisiak, K. Paprocki, <i>Thermoluminescence properties of chemical vapour deposited diamond films</i> | |
| 10:45 – 11:15 | Coffee break | |
| | Hard and Superhard Materials <i>Chairmen: B.V. Spitsyn, K. Zdunek</i> | Optoelectronics and Photovoltaics <i>Chairman: M. Sibiński</i> |
| 11:15 – 11:30 | Invited Speaker <u>J. Musil</u> , <i>Advanced hard flexible coatings prepared by magnetron sputtering</i> | <u>I.I. Ivanov</u> , V.A. Skryshevsky, O.S. Kyslovets, T. Nychyporuk, M. Lemiti, <i>Porous silicon Bragg reflectors on multi-crystalline silicon wafer with p-n junction</i> |
| 11:30 – 11:45 | | <u>M. Lipiński</u> , R.P. Socha, A. Kędra, G. Kulesza-Matlak, Z. Starowicz, Ł. Major, K. Drabczyk, K. Gawlińska, K. Łaba, <i>Perovskites nanoparticles used as light converter for solar cells</i> |
| 11:45 – 12:00 | <u>K. Zdunek</u> , L. Skowronski, R. Chodun, K. Nowakowska-Langier, A. Grabowski, W. Wachowiak, S. Okrasa, A. Wachowiak, O. Strauss, A. Wronkowski, P. Domanowski, J. Halarewicz, <i>Novel GIMS technique for deposition of colored Ti/TiO₂ coatings in industrial scale</i> | <u>P. Panek</u> , R.P. Socha, M. Juel, <i>In-line phosphorous diffusion for Si based solar cells production</i> |
| 12:00 – 12:15 | <u>J. Walkowicz</u> , <i>The use of the Taguchi approach to optimize plasma assisted surface treatment processes: an overview</i> | <u>B. Swatowska</u> , P. Panek, <i>The role of thermal thin oxides in silicon solar cells</i> |
| 12:15 – 12:30 | <u>D. Batory</u> , <i>Tribological characteristics of a-C:H:SiO_x coatings for the biomedical applications</i> | <u>K. Znajdek</u> , M. Sibiński, A. Kubiak, Ł. Ruta, K. Przymęcki, D. Janczak, Z. Lisik, <i>Back contact layers for flexible CdTe/CdS photovoltaic cells</i> |
| 12:30 – 14:00 | Lunch | |
| 14:00 – 18:00 | Excursions | |
| 19:00 | Gala Dinner Galicja Restaurant, Manufaktura (Ogrodowa St. 19a 91 065 Lodz, Poland) | |

SENM'2015 and MicroTherm'2015 Duo-conference Programme

| Thursday 25 th June 2015 | SENM'2015 (Conference Room - Satin 1) | MicroTherm'2015 (Conference Room - Satin 2) |
|--|--|---|
| | Plenary Session – Nanotechnology <i>Chairmen: I. Rangelow, T. Stapiński</i> | |
| 9:00 – 9:45 | Invited Speaker <u>A. Apostoluk</u> , Y. Zhu, B. Masenelli, T. Hieu-Nguyen, J.J. Delaunay, A. Valette, P. Gautier, S. Daniele, <i>Quantitative spectroscopic study of ZnO nanoparticles with intentionally introduced defects for photovoltaic applications</i> | |
| 9:45 – 10:00 | <u>E. Velázquez Lozada</u> , T. Torchynska, M. Kakazey, M. Vlasova, <i>Photoluminescence and structure study in mixture of ZnO and carbon nanoparticles during mechanical activation</i> | |
| 10:00 – 10:15 | <u>R. Bogdanowicz</u> , M. Sobaszek, M. Gnyba, M. Ficek, T. Ossowski, J. Ryl, <i>Optical and electrochemical properties of transparent nanocrystalline boron-doped diamond (B-NCD) thin films</i> | |
| 10:15 – 10:30 | <u>T. Mayer-Gall</u> , K. Opwis, J.S. Gutmann, <i>The Golden Fleece - an unconventional textile based adsorbent approach for environmental remediation and noble metal recovery</i> | |
| 10:30 – 10:45 | <u>T. Gotszalk</u> , M. Rudek, P. Kunicki, A. Sierakowski, P. Janus, P. Grabiec, <i>Thermal metrology at nanoscale</i> | |
| 10:45 – 11:00 | <u>M. Miglierini</u> , M. Hasiak, <i>Ion irradiation induced structural modifications of Fe₈₁Mo₈Cu₁B₁₀ NANOPERM-type alloy</i> | |
| 11:00 – 12:30 | Poster Session II <i>Chairmen: E. Czerwosz, J. Gołębiowski</i> and Coffee break | |
| 12:30 – 14:00 | Lunch | |
| | New Materials and New Technologies <i>Chairmen: J.A. Robinson, P. Louda</i> | Characterisation and Microtechnology <i>Chairman: A. Apostoluk</i> |
| 14:00 – 14:15 | Invited Speaker <u>J.A. Zapien</u> , <i>Optical processes in self-assembled nanostructured materials</i> | <u>P. Janus</u> , A. Sierakowski, M. Zaborowski, P. Grabiec, M. Rudek, T. Gotszalk, B. Yang, M. Lenczner, <i>Design and technology of scanning thermal probe for nanoscale investigations</i> |
| 14:15 – 14:30 | | <u>M. Rudek</u> , P. Kunicki, A. Sierakowski, P. Janus, P. Grabiec, T. Gotszalk, <i>Scanning thermal microscopy NanoHeat probes – calibration and application</i> |
| 14:30 – 14:45 | <u>S. Miszczak</u> , B. Pietrzyk, <i>Zirconia coatings prepared by novel plasma enhanced aerosol-gel method</i> | <u>I.W. Rangelow</u> , A. Ahmad, T. Ivanov, T. Angelov, A. Reum, M. Kaestner, C. Aydogan, M. Hofer, V. Ishchuk, Y. Krivoshapkina, S. Lenk, I. Atanasov, M. Holz, <i>Reversible thermomechanical transduction with 10µm-deflection of self-sensing cantilevers suitable for fast-AFM and scanning probe lithography</i> |
| 14:45 – 15:00 | <u>K. Siczek</u> , W. Pawlak, J. Fichna, H. Zatorski, <i>Formation of nanosilver layer for the in-vivo model of gastrointestinal diseases</i> | <u>M. Lebioda</u> , R. Pawlak, <i>Properties in cryogenic temperature structures patterned by laser in AgHT^(TM) layer</i> |
| 15:00 – 15:15 | S. Sambonsuge, S. Ito, S. Jiao, H. Nagasawa, H. Fukidome, S. Filimonov, <u>M. Suemitsu</u> , <i>Evaluations of crystal defects of 3C-SiC(-1-1-1) film on Si(110) substrate</i> | <u>R. Pawlak</u> , M. Tomczyk, M. Walczak, J. Mizeraczyk, M. Tański, K. Garasz, <i>Selected problems in IR and UV laser micromachining of Si and GaAs in submillimeter scale</i> |
| 15:15 – 15:30 | <u>M.M.R. Hegde</u> , K.R.B. Kumar, R. Pandey, <i>CIP consolidated and microwave sintered nanocrystalline buld TiNiCu shape memory alloy</i> | A. Nosal, I. Tsydel, T. Marszałek, J. Ulański, <u>M. Gazicki-Lipman</u> , <i>An application of parylene coatings in organic electronics</i> |
| 15:30 | Closing Ceremony | |

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Poster Session I

Tuesday 23rd June 2015 (15:30 – 16:30)

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| I/1 | <i>Analysis of normal zone propagation in superconducting tapes initiated by thermal and magnetic disturbances</i> <u>M. Lebioda</u> , J. Rymaszewski |
| I/2 | <i>Thermal stability and magnetization of Cu/Cr-Ni steel multilayers</i> B. Kucharska, J. Kanak, <u>E. Olejnik</u> , A. Żywczak, T. Stobiecki, M. Hasiak |
| I/3 | <i>Influence of the transitional Ti layer and Si substrate doping level on the properties of the microstructure C-Ni/Ti/Si</i> <u>P. Firek</u> , I. Stępińska, J. Kalenik, M. Sochacki, M. Kozłowski, E. Czerwos, E. Kowalska, J. Szmids |
| I/4 | <i>Effect of annealing process on the surface roughness and sublimation of Si in 4H-SiC</i> <u>A. Kubiak</u> , Ł. Ruta, J. Rogowski, J. Woźny |
| I/5 | <i>Thermal stability of hafnium oxide (HfO_x) and hafnium oxynitride (HfO_xN_y) thin films deposited by means of r.f. reactive magnetron sputtering</i> <u>R. Mroczyski</u> , M. Szymańska |
| I/6 | <i>Manufacturing and characterisation of thin HfO_xN_y thin films</i> <u>P. Firek</u> , P. Wysokiński, <u>J. Szmids</u> |
| I/7 | <i>The influence of mechanical stress on flat-band voltage in semiconductor in MOS structure</i> <u>K. Piskorski</u> |
| I/8 | <i>Laser processing for negative bevel termination of high voltage pn junction in SiC</i> <u>A. Kubiak</u> , Ł. Ruta, A. Rosowski, P. French |
| I/9 | <i>Parameters of a shunt damping the electrodynamic loudspeaker utilized to damp the sound reflection in an acoustic tube</i> <u>M. Kasparek</u> , <u>M. Cernik</u> |
| I/10 | <i>Temperature distribution in Scanning Thermal Microscopy tip investigated with Micro-Raman Spectroscopy</i> <u>P. Borowicz</u> , P. Janus, P. Grabiec, R. Dobrowolski |
| I/11 | <i>The wetting dynamics measurement system to research the properties and applications of modern materials</i> <u>M. Bakała</u> , R. Wojciechowski, D. Sankowski, A. Ryłski |
| I/12 | <i>Measurements of thermal parameters of a solar module</i> <u>K. Górecki</u> , E. Krac |
| I/13 | <i>Investigation of IR thermal processing used for solar cells metallization by electroluminescence imaging</i> <u>K. Drabczyk</u> , G. Kulesza-Matlak, A. Drygała, M. Szindler, M. Lipiński |
| I/14 | <i>Deterioration of flexible thin-film solar cells parameters exposed on mechanical strain</i> <u>M. Sibiński</u> , K. Znajdek |
| I/15 | <i>Spray deposited carbon nanotubes counter electrodes for dye-sensitized solar cells</i> K. Siuzdak, <u>M. Klein</u> , M. Sawczak, G. Wroblewski, M. Sloma, M. Jakubowska, A. Cenian |
| I/16 | <i>Influence of stresses on the textronic MWCNT temperature sensors</i> <u>J. Golebiowski</u> , <u>S. Walczak</u> , K. Bakolik |
| I/17 | <i>MQT-model for Virtual Computer Design</i> <u>V. Hahanov</u> , T. B. Amer, I. Hahanov |
| I/18 | <i>Numerical simulations of planar InGa_N/Ga_N LED by Sentaurus CAD package employing different quantum well models</i> <u>J. Podgórski</u> , J. Woźny, Z. Lisik |
| I/19 | <i>Electrothermal simulations of heterojunction GaN nanowire LEDs</i> <u>J. Woźny</u> , J. Podgórski, E. Raj, Z. Lisik |
| I/20 | <i>Efficiency analysis of DC power supplies with optoelectronic transducers</i> <u>B. Guzowski</u> , R. Gozdur, Ł. Bernacki, M. Łakomski |
| I/21 | <i>The integration of optical interconnections on ceramic substrates</i> <u>B. Guzowski</u> , A. Rosowski, Z. Lisik, M. Jakubowska, M. Sharp, G. Tosik |
| I/22 | <i>Hydrogenation study of nanostructured Ti-Zr-Ni alloys</i> <u>M. Balcerzak</u> |
| I/23 | <i>Plasma assisted synthesis of in situ TiB reinforced titanium matrix composite</i> <u>A. Miklaszewski</u> |
| I/24 | <i>The electrochemical and thermodynamical properties of Mg₂Ni-TiNi type nanocomposites for room temperature hydrogen storage</i> <u>M. Nowak</u> , M. Jurczyk |
| I/25 | <i>Synthesis of NiTi based nanocomposites reinforced by HA addition</i> <u>K. Niespodziana</u> , K. Jurczyk, M. Jurczyk |
| I/26 | <i>Physical properties of nanosized Ba_{1-x}Ca_xTiO₃ solid-solid solution obtained by mechanochemical synthesis</i> <u>I. Szafraniak-Wiza</u> , L. Kozielski |
| I/27 | <i>Improved mechanical and corrosion properties of nanostructured Mg-Zn-Ca-Mn-Zr alloy</i> <u>K. Kowalski</u> , M. Jurczyk |
| I/28 | <i>Mechanism of titanium foams preparation by thermal dealloying of magnesium</i> <u>G. Adamek</u> |
| I/29 | <i>The study of conductivity mechanism in undoped diamond films produced HF CVD method</i> <u>K. Paprocki</u> , K. Fabisiak, M. Szybowski, G. Zhusupkalieva |
| I/30 | <i>Detection of bovine serum albumin using ISFET structures with chemically modified membrane</i> <u>P. Firek</u> , M. Cichomski, M. Waśkiewicz, I. Piwoński, A. Kisiełowska |

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| I/31 | <i>Graphene overlays transferred on metal alloys for enhanced protective properties: thermal aspects</i> B. Michalak, E. Kamińska, M. Zdrojek, M. Świniarski, <u>M. Sochacki</u> , J. Szmidt, M. Grobelny, M. Kalisz, A. Kotela |
| I/32 | <i>Silicon carbide on silicon photodiode stacks ultraviolet/visible dual-band detector</i> A. Kociubiński, M. Duk, <u>M. Sochacki</u> , T. Bieniek, G. Janczyk, M. Borecki |
| I/33 | <i>Interface traps in metal-insulator-semiconductor (MIS) structures studied by the thermally-stimulated current (TSC) technique</i> <u>M. Sochacki</u> , K. Król, M. Waśkiewicz, K. Racka-Szmidt |
| I/34 | <i>Etching of the titanium dioxide thin films</i> P. Firek, <u>M. Kamiński</u> , P. Caban, I. Kotela, N. Kwietniewski |
| I/35 | <i>A review of mechanical properties of nanocomposite carbon coatings with various dopants for potential biomedical applications</i> <u>K. Jastrzębski</u> , <u>A. Kowal</u> , L. Świątek, A. Olejnik, D. Bociąga |
| I/36 | <i>The influence of porous Si substrate topography on the growth of Carbon Nanotubes (CNTs) films</i> <u>I. Stepińska</u> , J. Radońska, H. Wronka, M. Kozłowski, P. Mensz, E. Czerwosz |
| I/37 | <i>Optical properties of spray coated carbon hybrid materials applied to transparent and flexible electrodes</i> <u>G. Wroblewski</u> , L. Dybowska-Sarapuk, M. Jakubowska, B. Swatowska, T. Stapinski, J. Jaglarz |
| I/38 | <i>Temperature dependent impedance measurements in polycrystalline CVD diamond</i> <u>M. Dłużniewski</u> , K. Paprocki, K. Fabisiak, M. Szybowski, A. Dudkowiak, A. Iskaliyeva |
| I/39 | <i>Auger electron spectroscopy for chemical in-depth – profiling of SiO₂/SiC interface</i> <u>A. Domanowska</u> , A. Michalewicz, K. Król, M. Sochacki, J. Szmidt |
| I/40 | <i>Raman spectroscopy of rhenium diselenide layered semiconductor</i> A. Taube, <u>A. Łapińska</u> , J. Judek, M. Zdrojek |
| I/41 | <i>Nanostructural carbon field emission cathodes</i> <u>J. Kalenik</u> , M. Mroczkowski, P. Firek, P. Głazewski, M. Kozłowski, E. Czerwosz, J. Szmidt |
| I/42 | <i>Surface modification of detonation nanodiamond and change of its functional properties</i> L.P. Afonina, N.A. Skorik, T.B. Galushko, <u>B.V. Spitsyn</u> |
| I/43 | <i>Antimicrobial evaluation of embedded lysozyme into degradable PEG/PCL coatings</i> <u>A. Visan</u> , N. Stefan, M. Miroiu, C. Nita, G. Dorcioman, O. Rasoga, I. Zgura, C. Breazu, A. Stanculescu, R. Cristescu, M.C. Chifiriuc, M. Chiritoiu, L. Sima, F. Antohe, L. Ivan, G. Socol, I.N. Mihailescu |
| I/44 | <i>Antimicrobial coatings of carbon doped with silver synthesized by Combinatorial Pulsed Laser Deposition for medical applications</i> <u>I. Negut</u> , G. Socol, C. Hapenciuc, G.E. Stan, C. Chifiriuc, V. Lazar, C. Ristescu, I.N. Mihailescu |
| I/45 | <i>Combinatorial Si:C structures obtained by Combinatorial Pulsed Laser Deposition: mechanical and biological characterisation</i> <u>I. Negut</u> , G. Socol, C. Hapenciuc, G.E. Stan, M.A. Husanu, C. Ristescu, I.N. Mihailescu |
| I/46 | <i>The influence of nanoadditives on the tribological properties of process fluids</i> T. Bakalova, L. Voleský, K. Borůvková, <u>P. Louda</u> |
| I/47 | <i>Assessment of the bactericidal effects of nanoparticles as additives for process fluid</i> <u>P. Škodová</u> , L. Křiklavová, T. Bakalova, L. Voleský, T. Lederer |
| I/48 | <i>SEM and Raman studies of CNT films on porous Si</i> J. Kęczkowska, R. Belka, <u>M. Suchańska</u> , P. Firek, H. Wronka, M. Kozłowski, J. Radońska, E. Czerwosz, F. Craciunoiu |
| I/49 | <i>4H-SiC microheater for local heating of liquid samples in multiparametric capillary sensors</i> M. Gęca, A. Kociubiński, G. Janczyk, <u>T. Bieniek</u> , M. Duk, M. Borecki |
| I/50 | <i>Thermo-mechanical modelling of innovative power distribution modules for stacked IC's</i> <u>T. Bieniek</u> , G. Janczyk |
| I/51 | <i>Experience on 4H-SiC based photodetectors development</i> A. Kociubiński, M. Duk, <u>T. Bieniek</u> , G. Janczyk, N. Kwietniewski, M. Borecki |
| I/52 | <i>The structural studies of C-Pd films and the influence of substrate type on this structure</i> <u>E. Kowalska</u> , E. Czerwosz, M. Kozłowski, P. Firek |
| I/53 | <i>Investigation of structural parameters and mechanical properties of some post-extraction UHMWPE hip</i> <u>A. Łaska</u> , <u>Z. Kula</u> , V.M. Archodoulaki, H. Szymanowski |
| I/54 | <i>Self-lubricating aluminium matrix composites reinforced with 2D crystals</i> J. Wozniak, M. Kostecki, K. Kulikowski, M. Buczek, <u>A. Olszyna</u> |
| I/55 | <i>Influence of graphene addition and sintering temperature on Si₃N₄ matrix composites</i> T. Cygan, J. Wozniak, M. Kostecki, J. Morgiel, <u>A. Olszyna</u> |
| I/56 | <i>Memristor effect in metal-TiO_x-Si heterojunction (moved from Characterisation and Microtechnology Session)</i> <u>V.A. Skryshevsky</u> , O.M. Kostiukovich, V.V. Lendiel, O.V. Tretyak |

SENM'2015 and MicroTherm'2015 Duo-conference Programme

Poster Session II

Thursday 25th June 2015 (11:00 – 12:30)

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| II/1 | Determination of InGaAsN/GaAs heterojunction solar cell parameters based on illuminated I-V characteristics <u>W. Dawidowski</u> , B. Ściana, I. Zborowska-Lindert, M. Mikolasek, J. Kovac, M. Tłaczała |
| II/2 | T-gate fabrication for AlGaIn/GaN HEMT transistor <u>K. Indykiewicz</u> , B. Paszkiewicz, R. Paszkiewicz |
| II/3 | Characterization of laser cutting effect on Si substrates <u>H. Kłos</u> , J. Malesińska, P. Prokaryn, A. Sierakowski, D. Szmigiel, A. Malinowska, D. Tomaszewski |
| II/4 | Dry etching of aluminum nitride thin films P. Firek, <u>B. Stonio</u> , R. Chodun, K. Noakowska-Langier, J. Szmidt, K. Zdunek, M. Sochacki |
| II/5 | Electrical properties of nanosilver layer made with spray coating technique <u>J. Krzemiński</u> , K. Kielbasiński, J. Szałapak, M. Jakubowska, A. Młodziński, E. Zwierkowska, M. Teodorczyk |
| II/6 | Charging/discharging processes in nanocrystalline MOS structures - theoretical study <u>D. Tanous</u> , A. Mazurak, B. Majkusiak |
| II/7 | Radio frequency energy harvesting in UHF band <u>Ł. Bernacki</u> , R. Gozdur, N. Salamon, W. Ceranka |
| II/8 | Multi-phase simulations for energy harvesting applications <u>M. Turczyński</u> , E. Raj, Z. Lisik |
| II/9 | Uncertainty of micro power and energy measurements in the evaluation of piezo harvesters <u>N. Salamon</u> , R. Gozdur, Ł. Bernacki, U. Soupremanien, S. Monfray, T. Skotnicki |
| II/10 | Study of the Ti/Al and Ti/Al/Mo/Au ohmic contacts metallization W. Macherzyński, <u>A. Stafiniak</u> , B. Paszkiewicz, J. Gryglewicz |
| II/11 | Properties of heterojunction n-ZnO/p-4H-SiC <u>M. Masłyk</u> , A. Werbowy, N. Kwietniewski, A. Taube, S. Gierałtowska, M. Sochacki |
| II/12 | Nanodiamond functionalization to biologic objects action A. Isakova, E. Krysanov, N. Skorik, M. Ivanova, O. Omelchenko, A. Indenbom, R. Molotkovsky, T. Galushko, <u>B.V. Spitsyn</u> |
| II/13 | The results of scientific - exploring works in Armenia in the way of creating the new materials <u>E. Poghosyan</u> |
| II/14 | Chemical functionalization of detonation nanodiamond particles and polycrystalline diamond layer (CVD) <u>K. Mitura</u> , M. Dudek, <u>M. Mitura-Nowak</u> , M. Marszałek, D. Bociaga, A. Sobczyk-Guzenda, B. Kolesińska |
| II/15 | Studies on the cytotoxicity of diamond nanoparticles against human cancer cells and lymphocytes <u>K. Adach</u> , M. Fijałkowski, G. Gajek, J. Skolimowski, R. Kontek, A. Blaszczyk |
| II/16 | Polymer electro-spraying encapsulation of fluorescein labelled diamond nanoparticles for biomedical application K. Adach, A. Saman, J. Chvojka, P. Mikes, J. Skolimowski, <u>M. Fijałkowski</u> |
| II/17 | Distribution and characterization of biogenic silicone dioxide nanoparticles in Equisetum arvense, Equisetum hyemale, Hordeum vulgare and Oryza sativa L. M. Fijałkowski, K. Adach, <u>D. Kroisova</u> |
| II/18 | Functionalization of HSMG™ graphene by CVD carbon nanopowder basing on the reversible hydrogen storage Ł. Kaczmarek, P. Kula, <u>P. Zawadzki</u> , A. Sobczyk-Guzenda, A. Jędrzejczak, R. Atraszkiewicz, P. Niedzielski, Ł. Kołodziejczyk |
| II/19 | Tailored biological properties of modified diamond-like carbon coatings for biomedical applications <u>A. Olejnik</u> , D. Bociaga, K. Jastrzębski |
| II/20 | The study of physicochemical properties of fluoroalkylsilanes deposited on the Ti-6Al-4V alloy M. Cichomski, I. Piwoński, <u>A. Kisielewska</u> , M. Kaczmarek, K. Spilarewicz, J. Ginter, R. Stanecka –Badura, W. Pawlak, M. Dudek, D. Batory, W. Kozłowski |
| II/21 | The effect of Si incorporation on electrochemical properties of a-C:H:SiO _x coatings <u>A. Jędrzejczak</u> , B. Burnat, D. Batory |
| II/22 | The influence of modification of stainless steel medical implants coated DLC and DLC-Si layers on changes on the implants surface as a result of implant-bone contact considering orthopedic screws <u>Ł. Świątek</u> , K. Jastrzębski, J. Grabarczyk |
| II/23 | RF PECVD deposition of Si _x N _y :C coatings from an organosilicon precursor <u>K. Oleśko</u> , H. Szymanowski, A. Walkiewicz-Pietrzykowska, W. Pawlak, A. Sobczyk-Guzenda |
| II/24 | Resistance – temperature characteristics of CVD and High Strength Metallurgical Graphene (HSMG) P. Kula, R. Pietrasik, <u>D. Kazimierski</u> , R. Atraszkiewicz, K. Dybowski, W. Szymański, L. Klimek, P. Niedzielski, M. Cłapa, A. Jędrzejczak |
| II/25 | Hydrogen content influence on tribological properties of nc-WC/a-C:H coatings <u>M. Makówka</u> , <u>W. Pawlak</u> , P. Konarski, B. Wendler |
| II/26 | Carbon nanoparticles fabricated by infrared laser ablation of graphite and polycrystalline diamond target <u>M. Dudek</u> , A. Rosowski, A. Koperkiewicz, P. French, J. Grobelny, R. Wach, M. Kozanecki |
| II/27 | Effect of parameters of surface treatment on characteristic silicon and corundum surface A. Rosowski, N. Matusiak, A. Stanisławska, M. Sharp, <u>M. Dudek</u> |
| II/28 | Properties of composite alumina-zirconia coatings prepared by aerosol-gel method <u>S. Miszczak</u> , B. Pietrzyk |
| II/29 | Evaluation of the surface properties of polydimethylsiloxane modified with diamond-like carbon coatings <u>W. Kaczorowski</u> , D. Batory, W. Szymanski, M. Kozanecki, A. Karczemska |

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| II/30 | <i>Graphene as a material for solar cells applications</i> <u>M. Czerniak-Reczulska</u> |
| II/31 | <i>Comparative study of HAp/C composite deposited on various metal substrates</i> <u>A. Niedzielska</u> , P. Skwierczyński, W. Szymański, W. Mróz, D. Batory |
| II/32 | <i>Nanotribology of silver and silicon doped carbon coatings</i> <u>L. Kolodziejczyk</u> , W. Szymanski, D. Batory, A. Jedrzejczak |
| II/33 | <i>Chemical composition of silica-titania waveguide film using Auger electron spectroscopy</i> <u>A. Michalewicz</u> , A. Domanowska, P. Karasiński, C. Tyszkiewicz |
| II/34 | <i>Development of texture and microstructure during recrystallization of deformed Cu- 8.5%at. Al single</i> <u>D. Jakubowska</u> , J. Zdunek, M. Kulczyk, J. Mizera, K.J. Kurzydłowski |
| II/35 | <i>Mechanical properties of H13 tool steel parts produced with use of SLM technology</i> <u>J. Šafka</u> , M. Ackermann, L. Voleský |
| II/36 | <i>The influence of high temperature aluminizing process on microstructure and properties of nickel based superalloy Inconel 718</i> <u>M. Zagórska</u> |
| II/37 | <i>Influence of deflocculants on the properties of the slurries used for the preparation of ceramic proppants</i> <u>D. Zarzycka</u> , P. Wisniewski, J. Szymanska, J. Mizera |
| II/38 | <i>Utilizing of inner porous structure in injection moulds for application of special cooling method</i> <u>M. Seidl</u> , J. Bobek, J. Šafka, J. Habr, I. Nováková, L. Běhálek |
| II/39 | <i>Significance of the metallic-bond electrons in the cytotoxicity of 2D nanoparticles against glioblastoma cells</i> E. Sawosz, <u>M. Kostecki</u> , M. Wierzbicki, S. Jaworski, M. Kutwin, A. Sokołowska, A. Olszyna |
| II/40 | <i>Influence of ultrasound, temperature, defect nanostructure on mechanical characteristics of Ti alloys, SiO₂ and automated system of anisotropy visualization</i> <u>A.P. Onanko</u> , G.T. Prodayvoda, Y.A. Onanko, A.V. Shabatura, G.G. Onanko, A.N. Onischenko |
| II/41 | <i>Influence of synthesis parameters of sol-gel method on morphology of RGO/Al₂O₃ nanocomposite powders</i> <u>A.M. Jastrzębska</u> , J. Jureczko, J. Karcz, A. Kunicki, A. Olszyna |
| II/42 | <i>Nanocomposites consisting of carbon nanotubes coated with palladium nanoparticles</i> A.D. Dobrzańska-Danikiewicz, <u>D. Cichocki</u> , D. Łukowiec, W. Wolany |
| II/43 | <i>Determination of sp³ fraction in ta-C coatings using XPS and Raman spectroscopy</i> <u>V. Zavaleyev</u> , J. Walkowicz, M. Sawczak, M. Klein, D. Moszynski |
| II/44 | <i>Kelvin Probe Force microscopy of High Strength Metallurgical Graphene transferred on LDPE</i> <u>K. Gajewski</u> , W. Szymański, P. Niedzielski, T. Gotszalk |
| II/45 | <i>High-voltage AlGaIn/GaN-on-Si HEMTs with ohmic and Schottky drain electrodes</i> <u>A. Taube</u> , J. Kaczmarek, R. Kruszka, M. Ekielski, M. Juchniewicz, J. Grochowski, K. Kosiel, K. Gołaszewska-Malec, M. Sochacki, E. Kamińska, A. Piotrowska |
| II/46 | <i>Spatial structures creation based on HSMG™ graphene for reversible sources of hydrogen storage</i> Ł. Kaczmarek, P. Kula, T. Warg, W. Kucharek, P. Louda, <u>K. Boruvkova</u> , P. Niedzielski, W. Szymański, W. Pawłowski, L. Voleský |
| II/47 | <i>Properties of thin AlN films deposited by magnetron sputtering method on Si substrates</i> P. Firek, <u>A. Werbowy</u> , K. Zdunek, J. Szmidt, R. Chodun, K. Nowakowska-Langier, M. Waśkiewicz |
| II/48 | <i>Microstructure and magnetocaloric effect in as-quenched GdGeSi alloys with addition of Ce and Ni</i> <u>M. Hasiak</u> |
| II/49 | <i>Reactive ion etching of wide range Al composition AlGaIn/GaN heterostructures</i> <u>J. Gryglewicz</u> , A. Stafiniak, M. Wośko, R. Paszkiewicz |
| II/50 | <i>Polyurethane foams obtained from residues of PET manufacturing and modified with carbon nanotubes</i> <u>L. Stiebra</u> , U. Cabulis, M. Knite |
| II/51 | <i>Effect of annealing temperature on optical and electrical properties of metallophthalocyanine thin films deposited on silicon substrate</i> R. Skonieczny, P. Popielarski, W. Bała, K. Fabisiak, K. Paprocki, <u>M. Kowalska</u> , M. Szybowicz |
| II/52 | <i>CVD diamond in electrochemistry</i> <u>M. Kowalska</u> , K. Fabisiak, A. Wrzyszczyński |
| II/53 | <i>Si-incorporated diamond-like carbon coatings prepared by magnetron sputtering for potential biomedical applications</i> <u>D. Bociaga</u> , A. Jędrzejczak, M. Kamińska, W. Szymański, A. Olejnik, A. Kowal, L. Świątek, K. Jastrzębski |
| II/54 | <i>Diamond sensor for special applications in breath control</i> <u>P. Ceynowa</u> , A. Balcer, M. Sobaszek, R. Bogdanowicz, W. Zinka, S. Mitura |
| II/55 | <i>Surface modification by embedded nanodiamond particles</i> <u>K. Wyrebski</u> , W. Zinka, S. Mitura |
| II/56 | <i>NiTi – one- and two-way shape memory effect</i> BioMec – Students' Research Group |



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thermal processing

