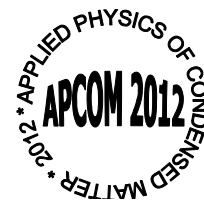


## SCIENTIFIC PROGRAM



Wednesday, June 20, 2012 (LUNCH 12:00-14:00)

OPENNING CEREMONY 14:30

PLENARY SESSION *Introductory lectures* 14:45

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*A. Szabó, K. Bán, G. Juhász, L. Novák and A. Lovas*

**A complex study of surface fatigue in carbom steels caused by rolling contact and sliding friction**

*J. Jasenek, B. Korenko, J. Červeňová*

**Coherence-domain reflectometry with synthesized coherence function**

*I. Kubena, J. Polak, T. Kruml*

**Development of reduced activation steels for fusion and their fatigue properties**

*D. Pudiš, L. Šušlik, J. Škriniarová, J. Kováč, J. Jakobovič, I. Kubicová, J. Kováč, jr., J. Novák, Š. Haščík*

**Effect of 2D PhC structure patterned in LED surface on emission properties**

*F. Dubecký, P. Příbytný, G. Vanko, B. Zaťko, E. Gombia, M. Baldini, P. Hrkút, V. Nečas, and D. Donoval*

**Novel concepts of soft X-ray detector based on semi-insulating GaAs**

*P. Markoš*

**Finite size scaling analysis of disordered electron systems**

COFFEE BREAK 16:15

SESSION 1(A) *Nuclear science and technology, influence of irradiation on physical properties of materials, radiation detection I.* 16:45

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*M. Pavlovič, M. Miglierini, E. Mustafin, T. Seidl, M. Šoka, I. Strasik*

**Magnetic susceptibility measurements of soft-magnetic metallic glasses under ion irradiation**

*E. Mustafin, I. Strasik, A. Plotnikov, A. Smolyakov*

**Radiation damage problems in slow extraction area and internal beam dump of SIS100**

*A. Belousov, E. Mustafin, W. Ensinger*

**Short term ionizing radiation impact on charge-coupled devices in radiation environment of high intensity heavy ion accelerators**

*K. Sedlačková, B. Zaťko, V. Nečas*

**Numerical study of the particle transport in fast neutron detectors with conversion layer**

*B. Zaťko, A. Šagátová, F. Dubecký, K. Sedlačková, P. Boháček, V. Nečas*  
**Study of particle detector based on SiC epitaxial layer**

*A. Šagátová, B. Zaťko, F. Dubecký, P. Boháček, K. Sedlačková, V. Nečas*  
**Semi-insulating GAAS detectors of fast neutrons**

*A. Bartnik, H. Fiedorowicz, B. Korczyk, J. Kostecki, A. Szczurek, P. Wachulak*  
**Soft X-ray and EUV treatment of solids**

*V. Sopko, B. Sopko, D. Chren, J. Dammer*  
**Influence of irradiation on defects creation in PIN diode structure**

*J. Sitek, J. Dekan*

**Analysis of volcano rocks by Mössbauer spectroscopy**

SESSION 1(B) *Nuclear science and technology, influence of irradiation on physical  
properties of materials, radiation detection II.* 16:45

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*V. Sabelová, M. Petriska, J. Veterníková, V. Slugeň, S. Sojak*  
**Application of Doppler Broadening Spectroscopy for detection of vacancy defects**

*J. Veterníková, V. Slugeň, J. Degmová, V. Sabelová, M. Petriska, S. Stanček*  
**Positron study of implanted ODS steels**

*J. Lüley, B. Vrban, G. Farkas, J. Haščík, R. Hinca, M. Petriska, V. Slugeň*  
**Determination of thermal reactivity coefficients for the first fuel loading of MO34**

*B. Vrban, J. Lüley, G. Farkas, J. Haščík, R. Hinca, M. Petriska, V. Slugeň*  
**MNCP calculation of the critical H<sub>3</sub>BO<sub>3</sub> concentrations for the first fuel loading  
into the reactor core of NPP MO-3-4 units**

*S. Sojak, V. Slugeň, V. Kršjak, W. Egger, L. Ravelli, M. Petriska, S. Stanček,  
M. Skarba, P. Priputen, K. Vitázek, M. Stacho, J. Veterníková, V. Sabelová*  
**PLEPS study of thermal annealing influence on binary Fe-11.62%Cr alloys**

*M. Stacho, Š. Krnáč, V. Slugeň, R. Hinca, S. Sojak*  
**Analysis of high energy gamma ray spectra using whole spectrum processing**

*J. Dekan, J. Degmová, V. Slugeň, M. Maláč*  
**Phase analysis of iron containing corrosion products at NPP secondary circuit using  
Mössbauer spectrometry**

*T. Hatala, M. Miglierini*  
**Nuclear forward scattering of synchrotron radiation**

*Š. Čerba, V. Nečas*  
**Determination of the isotopic composition of neutron irradiated nuclear fuel materials  
by MCNPX**

WELCOME PARTY 19:30

**Thursday, June 21, 2012**

BREAKFAST 07:00

SESSION 2(A) *New materials and structures, nanostructures, thin films,  
their analysis and applications I.* 08:15

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*A. N. Kalinenko, A. I. Kopeliovich, P. V. Pyshkin, A. V. Yanovsky*  
**The new type of current and spin polarization oscillations in nano and micro rings**

*J. Hoško, I. Janotová, P. Švec, I. Maňko, D. Janičkovič, P. Švec Sr.*  
**Microstructure analysis of CoFeBSiNb metallic glasses with a various geometry  
prepared by planar flow casting and suction casting methods**

*P. Neilinger, M. Trgala, I. Hrebíková, M. Mikula, M. Leporis, M. Zahoran,  
M. Truchlý, M. Grajcar*  
**Nonlinearity in superconducting titanium nitride coplanar waveguide resonators**

*J. Osvald*

**Interface electron traps and capacitance characteristics of AlGaIn/GaN**

*B. Ściana, W. Dawidowski, D. Pucicki, D. Radziejewicz, M. Tłaczała, J. Serafińczuk, M. Latkowska, J. Kováč, A. Vincze*

**Technology and characterization of AlInGaV-N heterostructures for solar cells applications**

*J. Kravčák*

**Dynamics of magnetic domain walls in thin ferromagnetic layers and wires**

*A. Stafiniak, B. Boratyński, A. Baranowska-Korczyca, K. Fronc, D. Elbaum, R. Paszkiewicz, M. Tłaczała*

**Electrical properties of electrospun ZnO nanofibers**

SESSION 2(B)

*New materials and structures, nanostructures, thin films, their analysis and applications II.*

08:15

*K. Gmucová, M. Weis, M. Benkovičová, E. Majková*

**Composite nanomembranes for electrochemical sensing**

*R. Andok, A. Benčurová, A. Konečnicková, L. Matay, P. Nemeč*

**Characterization of test structures for e-beam lithography for estimation of proximity exposure parameters**

*I. Matko, P. Švec, P. Švec Sr., D. Janičkovič, M. Stoica, T. Gemming*

**Preparation of rapidly quenched bilayer ribbons, their properties and interface structure**

*M. Vojs, M. Behúľ, P. Michniak, V. Řeháček, V. Tvarožek, M. Veselý, M. Rossberg, P. Schaaf*

**Boron doped diamond electrodes for the dopamine identification by anodic stripping voltammetry**

*P. Michniak, M. Vojs, M. Veselý, A. Vincze, M. Wilke, T. Kups, P. Schaaf, D. Rossberg*

**Characterization of boron doped diamond thin films**

*J. Cirák, M. Sokolský, M. Weis, E. Dobročka*

**The Langmuir monolayer: an efficient model for studying interfacial properties of biomembranes**

*P. Ďurina, A. Benčurová, A. Konečnicková, I. Kostič, P. Kúš, A. Pleceník*

**Influence of backscattered electrons on the quality of structures in the thin resist layer patterned using e-beam with the Gaussian distribution of electron energies**

COFFEE BREAK

10:00

SESSION 3(A)

*Physical properties and structural aspects of solid materials and their influencing I.*

10:30

*P. Kordoš, R. Stoklas, K. Čičo, M. Mikulics*

**Comparative study of InAlN/GaN HFETs with and without thermal oxidized InAlN of different composition**

*B. Butvinová, P. Butvin, M. Kadlečiková, M. Kuzminski, K. Csach*

**Changes of magnetic properties and surfaces condition due to thermal treatment of FeNbCuBSi ribbons**

*V. Nádaždy, K. Gmucová, Š. Lányi*

**Charge transfer based methods for detection of defect states in organic semiconductors**

*J. Onufer, J. Ziman, M. Kladirová, V. Šuhajová*

**Study of depinning process in bistable ferromagnetic microwire**

*E. Ušák, M. Ušáková, M. Šoka*

**Modification of magnetic properties of NiZn ferrites by appropriate substitutions of Gd ions**

*A. Szyszka, M. Wosko, A. Apostoluk, W. Macherzynski, R. Paszkiewicz, B. Masenelli, M. Tlaczala*

**Properties of AlGaIn/GaN heterostructures with double GaN buffer layer for HFET fabrication**

*M. Molnár, G. Donnarumma, V. Palankovski, J. Kuzmík, D. Donoval, J. Kováč, S. Selberherr*

**Characterization, modeling and simulation of In<sub>0.12</sub>Al<sub>0.88</sub>N/GaN HEMTs**

*M. Koval'aková, E. Chmielewská, R. Hodossyová, V. Hronský, P. Duranka*

**Solid State NMR Study of Phosphate Adsorption on Natural Microporous Materials**

*K. Rendek, A. Šatka*

**Investigation of low-frequency noise in AlGaIn/GaN HEMT at various temperatures**

SESSION 3(B)

*New materials and structures, nanostructures, thin films, their analysis and applications III.*

10:30

*R. Srnánek, M. Weis, J. Jakabovič, J. Kováč, J. Filo, M. Putala*

**Study of organic semiconductor H<sub>2</sub>T<sub>2</sub>6N by Raman spectroscopy**

*S. Flickyngerová, M. Vojs, K. S. Shtereva, P. Šutta, A. Vincze, M. Milosavljevič, Ch. Jeynes, N. Peng, I. Novotný, V. Tvarožek*

**Effect of annealing on properties of gallium-nitrogen Co-doped zinc oxide thin films prepared by sputtering and ion implantation**

*M. Kotlár, M. Vojs, M. Marton, M. Veselý, R. Redhammer*

**Synthesis of carbon nanotubes bridging metal electrodes**

*M. Marton, M. Vojs, M. Kotlár, P. Michniak, S. Flickyngerová, M. Veselý, R. Redhammer*

**Preparation of copper doped DLC films by dc PE-CVD method**

*L. Vančo, M. Kadlečiková, E. Šipos*

**Observation of enhanced Raman spectra on thin layers of nanocrystalline diamond**

*A. Chvála, D. Donoval, J. Marek, P. Příbytný and M. Molnár*

**Low voltage power transistor model for SPICE-like electro-thermal circuit simulation**

*P. Benko, J. Kováč, J. Škriniarová, P. Kordoš, L. Harmatha*

**Influence of layer structure on performance of AlGaIn/GaN HEMTs**

*A. Vincze, M. Držik, M. Michalka, J. Bruncko, M. Vallo, G. Vanko, T. Lalinsky*  
**SIMS depth profiling of metallization contact layers for AlGaIn/GaN heterostructures**

*J. Škriniarová, I. Novotný*

**Electrodeless wet etching of n-GaN assisted with ultraviolet light**

LUNCH 12:45

SOCIAL PROGRAMME 14:00

DINNER AND FRIENDSHIP PARTY 19:30

**Friday, June 22, 2012**

BREAKFAST 07:00

SESSION 4(A) *Optical phenomena in materials, photovoltaics and photonics, new principles in sensors and detection methods I.* 08:00

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*D. Fidriková, L. Kubičár*

**The use of the hot-ball method for observation of moisture in porous**

*M. Florovič, J. Kováč, B. Šciána, I. Zborowska-Lindert, M. Tlaczala*

**Investigation of electrical and optical properties of InGaAsN/GaAs QW MSM photodetectors**

*P. Hronec, S. Shokhovets, P. Schaaf, J. Kováč*

**Investigation of photonic crystal light emitting diode using spectroscopic ellipsometry**

*I. Kubicková, D. Pudiš, J. Škriniarová, J. Kováč, J. Kováč jr., J. Jakabovič, L. Šušlik, J. Novák*

**LED with 2D irregular structure in the surface prepared by NSOM lithography**

*M. Mikolášek, M. Nemeč, J. Racko, L. Harmatha, J. Kováč, M. Žiška*

**Investigation of amorphous silicon/crystalline silicon interface for heterojunction solar cell applications**

*M. Nemeč, M. Mikolášek, L. Harmatha*

**Current transport mechanism in amorphous silicon/ crystalline silicon hetero-junction solar cells**

SESSION 4(B) *Optical phenomena in materials, photovoltaics and photonics, new principles in sensors and detection methods II.* 08:00

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*J. Kováč, M. Čaplovičová, D. Búč, T. Brath, J. Kováč jr, P. Eliáš, S. Hasenohr, J. Novák*

**Properties of GaP/ZnO heterostructures for photovoltaics**

*G. Kajtár*

**Analysis of periodic structures using RCWA**

*J. Kováč jr., J. A. Zapien, Yucheng Dong*

**Photoluminescence from nano-dimensional materials with UV excitation**

*T. Skoršepová, J. Chlupík*

**Spectroscopic ellipsometer as a sensor based on surface plasmon polaritons**

*K. Bombarová, J. Chlupík, S. Flickyngerová, J. Círák*

**Material model of ZnO for ellipsometry measurements**

*P. Hrkút, R. Andok, P. Andris, I. Čaplovič*

**A position detector for extreme conditions with high temperature, pressure and surrounding noise**

COFFEE BREAK

09:30

SESSION 5(A)

*Computational physics and theory of physical properties of matter I.*

10:00

*J. Murín, M. Aminbaghai, J. Hrabovský, V. Kutiš, J. Paulech*

**Modal analyses of functionally graded material beams**

*J. Racko, M. Mikolášek, P. Benko, A. Grmanová, L. Harmatha, R. Granzner, F. Schwierz, J. Breza*

**Direct and trap-assisted tunnelling in the Schottky barrier**

*J. Hrabovský, J. Murín, J. Paulech, V. Kutiš*

**Electric-thermal analysis of FGM conductor joint using new finite element**

*G. Vasziová, J. Tóthová, L. Glod, V. Lisý*

**Correlation properties of the thermal noise in fluids**

*V. Kutiš, J. Murín, J. Paulech, J. Hrabovský*

**Beam element with piezoelectric layers**

*L. Glod, G. Vasziová, J. Tóthová, V. Lisý*

**Brownian motion in a medium with nonlinear friction**

SESSION 5(B)

*Computational physics and theory of physical properties of matter II.*

10:00

*J. Marek, D. Donoval, A. Chvála, P. Pribytný, M. Molnár*

**Determining of the failure mechanism during UIS test combining single and multipulse UIS test**

*T. Váry, J. Chlupík, P. Markoš*

**Scattering of electromagnetic waves on metal nanoparticles**

*P. Bokes, M. Zemanová-Diešková*

**Simulations of the transport of electrons through molecular and atomic nanodevices**

*M. Konôpka, P. Bokes*

**Time-dependent description of quantum interference nanotransistor**

*V. Sedlák, D. Ďuračková, R. Záluský*

**Detection of signals in noisy environment**

*R. Záluský, D. Ďuračková, V. Sedlák*

**The effectiveness of dactyl alphabet recognition of neural network with new architecture**

SHORT BREAK	11:30
PLENARY SESSION	<i>Physical properties and structural aspects of solid materials</i>
	<i>and their influencing II.</i>
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<i>V. Slugeň, A. Kryukov, S. Sojak, M. Petriska, J. Veterníková, V. Sabelová, R. Hinca, M. Stacho</i>	
<b>Application of PAS and Charpy-V tests at WWER reactor pressure vessel steels</b>	
<i>I. Janotová J. Hoško, P. Švec Sr., I. Maňko, D. Janičkovič, P. Švec</i>	
<b>Structure of Fe-B-P based metallic glasses</b>	
<i>P. Příbytný, F. Dubecký, D. Donoval, A. Chvála, J. Marek, M. Molnár</i>	
<b>Analysis and optimization of silicon detector supported by electro-physical modeling and simulation</b>	
<i>M. Petrus, L. Stuchlíková, J. Rybár, P. Juhász, L. Harmatha, P. Benko, J. Kováč, M. Žiška, J. Šebok, B. Ściana, D. Radziewicz, D. Pucicki, M. Tłaczała</i>	
<b>Deep level investigation on GaAsN structures by DLTS method</b>	
<i>L. Stuchlíková, J. Rybár, A. Kósa, M. Petrus, L. Harmatha, B. Ściana, D. Radziewicz, D. Pucicki, M. Tłaczała</i>	
<b>Investigation of InGaAsN/GaAs heterostructures by capacitance methods</b>	
<i>M. Pavúk, P. Ballo, B. Brunner, M. Weis</i>	
<b>MFM study of core/cover interface in a MgB<sub>2</sub>/Fe superconducting wire</b>	
CONCLUDING REMARKS	12:50
LUNCH	13:00
DEPARTURE	13:30