SCIENTIFIC PROGRAM

Wednesday, June 23, 2021

ARRIVAL OF PARTICIPANTS 08:00

MEETING OF SOLVERS OF THE PROJECT CEDAMNF, EXCHANGE OF EXPERIENCES, DISCUSSION 08:30

REGISTRATION 11:00

LUNCH 11:30

OPENING CEREMONY 15:00

PLENARY SESSION A1 *Introductory Lectures* 15:10

Martin Gmitra
Spin-Orbit and Magnetic Proximity Effects in Layered Heterostructures

Ondřej Šipr, Sören Krotzky, Ján Minár, Roland Wiesendanger and Jan Honolka
Spin Spirals in Mn/W(110) as Seen via X-Ray Absorption Spectroscopy: Complementarity with STM *(invited lecture)*

Pavol Valko
Analogies Between Solid State Effects and Cosmology, Theory and Experiment *(invited lecture)*

Ondřej Caha, Juraj Krempaský, Ján Minár, Jakub Schusser, Tien-Lin Lee and Günther Springholz
Electric Field Induced Atomic Displacements in Ferroelectric GeTe and (Ge,Mn)Te Thin Films Studied Using Standing Wave X-ray Fluorescence

Fatima Alarab, Ján Minár and Vladimir Strocov
Proximity-Induced Spin-Orbit Interaction at Interface of Pb/MoSe2

COFFEE BREAK 16:30

SESSION A2 ***International workshop:*** *Current Successes in the Photoemission and Electron Microscopy I.* 17:00

Acknowledgment. *All contributions in this workshop were supported by the project CEDAMNF, reg. no. CZ.02.1.01/0.0/0.0/15_003/0000358, co-funded by the European Regional Development Fund (ERDF).*

Pavel Calta, Martin Kučera, Pavol Šutta, Marie Netrvalová, Veronika Vavruňková, Rostislav Medlín, Zdeněk Jansa and Ján Minár
Room Temperature Laser-Induced Crystallization of Amorphous Silicon Thin Films Grown by PECVD

Rostislav Králík, Barbora Křivská, Lucia Bajtošová and Miroslav Cieslar
Zener Drag in Twin-Roll Cast AA8079 Alloy

Saleem Ayaz Khan, Ondřej Šipr, Jiří Vackář, Robin Niklaus, Peter J. Schmidt, Wolfgang Schnick and Ján Minár
Electronic Structure of β-SiAlON: Effect of Al/O Doping and of Finite Temperature

Karol Hricovini, Maria Christine Richter, Olivier Heckmann, Jean Zaraket, Laxman Nagi Reddy, Waly Ndiaye, Saleem Ayaz Khan, Laurent Nicolaï and Ján Minár
ARPES Studies of Hf(0001) Monocrystal

Miroslav Cieslar, Rostislav Králík, Barbora Křivská, Lucia Bajtošová, Sára Belejová, Michal Hájek, Olexandr Grydin, Mykhailo Stolbchenko and Mirko Schaper
High Temperature Processes in AlLi-Based Alloys with Small Addition of Sc

SESSION B1 ***Scientific conference:***
Nuclear Engineering 17:00

Acknowledgment. *This scientific conference is supported by the Slovak Research Development Agency within the project No. APVV-16-0288, by State Atomic Energy Corporation "Rosatom" (Russian federation) and by Nureco o. z.*

Vladimir Artisiuk
Talent Management: Nuclear Power in Russian Federation *(invited lecture)*

Bohumír Zaťko, Ladislav Hrubčín, Andrea Šagátová, Pavol Boháček, Oleg Michajlovič Ivanov, Mária Sekáčová, Eva Kováčová, Yurij Borisovič Gurov and Vladimir Alexejevič Skuratov
Study of the Pulse Height Defect of 4H-SiC Schottky Barrier Detectors in Heavy Ion Detection *(invited lecture)*

Peter Hausner, Gabriel Farkas, Katarína Kaprinayová and Michal Šnírer
Calculation of Spatial Weight Function of the SNM-11 Ex-Core Detector for VVER-440 Reactor

Michal Šnírer, Kristína Krištofová, Gabriel Farkas, Peter Hausner and Vladimír Slugeň
Determination of VVER-440/ V-213 Long-Term Operation Induced Activity

Branislav Stríbrnský and Róbert Hinca
The Comparison of Energy Resolution Fitting Functions for 1.5″ NaI:Tl, CsI:Tl, $LaBr_3$:Ce, and $CeBr_3$ Scintillation Detectors

Štefan Čerba, Branislav Vrban, Jakub Luley, Filip Osuský, Vladimír Nečas, Ondřej Šťastný, Karel Katovský, Marko Gloginjić, Željko Mravik, Marko Erich and Srdjan Petrović
Preliminary Results of the STU Mini Labyrinth Radiation Shielding Experiment

Branislav Vrban, Miroslava Dobroňová, Jakub Lüley, Štefan Čerba, Filip Osuský and Vladimír Nečas
On the Taylor Series Solution of the Reactor Point Kinetics Equations

Jakub Lüley, Filip Osuský, Branislav Vrban, Štefan Čerba and Vladimír Nečas
Development and Calibration of the Units for Dosimetry Monitoring System

Filip Osuský, Branislav Vrban, Štefan Čerba, Jakub Lüley and Vladimír Nečas
Comparison of Neutronic Parameters for Developed GFR 2400 Cross-Section Library in NESTLE Code

SHORT BREAK

SESSION C1 ***International workshop:***
Current Successes in the Photoemission and Electron Microscopy II. 18:30

Acknowledgment. *All contributions in this workshop were supported by the project CEDAMNF, reg. no. CZ.02.1.01/0.0/0.0/15_003/0000358, co-funded by the European Regional Development Fund (ERDF).*

Lucie Prušáková, Petr Novák, Zdeněk Jansa and Ján Minár
Temperature-Dependent Hall Effect Studies of AZO Thin Films

Jean Zaraket, Maria Christine Richter, Olivier Heckmann, Laxman Nagi Reddy, Waly Ndiaye, Saleem Ayaz Khan, Laurent Nicolaï, Ján Minár and Karol Hricovini
Surface Preparation of the Hf (0001) Monocrystal: XPS studies

Petra Šotová, Petr Novák and Tomáš Kozák
Characterization of Columnar Structure of Sputtered AZO Films by Electron Microscopy for Grain Boundary Scattering Model

Sarath Sasi, Laurent Nicolaï, Václav Babuška, Sunil Wilfred DSouza, Ján Minár and Petra Šotová
Study of Biocompatible Titanium Alloys Using X-Ray Photoemission Spectroscopy

Jozef Haniš and Martin Gmitra
Electronic Structure of Misfit Layered Compound $(LaSe)_{1.14}(NbSe_2)_2$ from First-Principles

SESSION C2 *Nuclear Science and Technology, Irradiation of Materials, Radiation Detection* 18:30

Dávid Bednár, Jakub Dolniak, Martin Ličtjak and Vladimír Nečas
Determination of NORM Vector According to Laboratory Analysis of Soil Samples in the Area of NPP A1 in Slovakia

Andrea Šagátová, Bohumír Zaťko, Eva Kováčová and Vladimír Nečas
Gamma Spectrometry of Different Energies by Radiation-Degraded SI GaAs Detectors

Peter Bokes and Gabriel Farkaš
Sensitivity Analysis of Temperature Profile in Nuclear Fuel Pellets Using a Simple Analytical Model

Norbert Gál, Bohumír Zaťko, Pavol Boháček and Eva Kováčová
Performance of Temperature-Stabilized Radiation Detectors and Preamp J-FET

Robert Hinca and Branislav Stribrnsky
Influence of Detector Resolution on the Occurrence of False Alarms of Radioactive Wastewater Monitors

Gabriel Gálik, Vladimír Kutiš, Juraj Paulech and Vladimír Goga
Modelling the Effects of Pressure Thermal Shock in a Nuclear Reactor

Juraj Paulech, Justín Murín, Vladimír Kutiš and Gabriel Gálik
Thermo-Hydraulic Behaviour of Coolant in Nuclear Reactor VVER-440 Under Reactor Pool Filling Conditions

Soňa Kotorová, Andrea Šagátová and Marko Fülöp
Radiation and Heat Treatment of Sediments Contaminated with the PCBs and PCDD/Fs

Vladislav Pisa, Bruno Sopko and Vit Sopko
Application of Semiconductor Detectors for Dose Rate Measurement of Fission Products Mixture

Katarína Sedlačková and Filip Frank
Application Software for Automatic Time-Dependent Spectral Analysis

Jarmila Degmová, Vladimír Kršjak, Stanislav Sojak, Martin Petriska and Michal Kotvas
Magnetic Barkhausen Noise Characterisation of Isochronally Annealed Miniaturised Fe8Cr Specimens

Martin Petriska, Stanislav Sojak, Vladimír Kršjak and Vladimír Slugeň
Digital Triple Coincidence Positron Lifetime Setup with DRS4 and Its Benefits

Stanislav Sojak, Vladimir Krsjak, Jarmila Degmova, Martin Petriska and Vladimir Slugen
Influence of Corrosive Environments on Steels Studied by Positron Annihilation Spectroscopy

Beata Butvinová, Jozef Sitek, Katarína Sedlačková, Július Dekan, Andrea Šagátová, Irena Janotová and Peter Švec Sr.
Magnetic and Structural Properties of Electron Irradiated Fe(Co)SnB Alloys

SESSION C3 *New Materials and Structures, Nanostructures and Thin Films, Their Analysis and Specific Applications I.* 18:30

Katia Vutova, Vania Vassileva, Ravendran Ratheesh, Arbind Kumar, Raghu C. Reddy and Martin Markov
Purification of Hafnium Metal Sponge by Electron Beam Melting

Norbert Tarjányi and Daniel Káčik
Birefringence of Magnetic Fluid Thin Film Induced by Lateral Magnetic Field

Robert Andok, Katia Vutova, Elena Koleva, Anna Bencurova and Ivan Kostic
Dependence of PMMA Electron Beam Resist Sidewall Shape on Exposure Dose and Resist Thickness

Štefan Hardoň, Jozef Kúdelčík, Jaroslav Hornak, Pavel Trnka, Zoltán Adam Tamus and Tomasz Koltunowicz
Effect of ZnO Nanoparticles on the Dielectric Properties of Polyurethane and Epoxy Resins

Magdaléna Kadlečíková, Juraj Breza, Karol Jesenák and Katarína Bédiová
Chemical Treatment of Montmorillonite and Kaolinite for Synthesis of Carbon Nanotubes

Martin Predanocy, Ivan Hotový and Robert Andok
Platinum Hotplate on Thermoisolated Polyimide Membrane as Perspective Device Used in MEMS

Tomáš Váry, Zita Tokárová and Vojtech Nádaždy
Energy Resolved Electrochemical Impedance Spectroscopy of Furan-Substitued Thiazolo [5,4-*d*]Thiazoles

Patrik Novák, Dalibor Búc, Justín Murín and Vladimír Goga
Analysis of Twisted Polymeric Fibers by X-ray Diffraction

WELCOME PARTY (VATRA CLUB AND OUTDOOR TERRACE) 20:00-24:00

Thursday, June 24, 2021

BREAKFAST 07:00

SESSION A3 ***International workshop:***
Current Successes in the Photoemission and Electron Microscopy III. 08:00

Acknowledgment. *All contributions in this workshop were supported by the project CEDAMNF, reg. no. CZ.02.1.01/0.0/0.0/15_003/0000358, co-funded by the European Regional Development Fund (ERDF).*

Mauro Fanciulli
Magnetic Helicoidal Dichroism *(invited lecture)*

Sunil Wilfred DSouza, Hans-Joachim Elmers, Satya Prakash Bommanaboyena, Vladimir N. Strocov, Martin Jourdan and Ján Minár
Metallic Antiferromagnetic Spintronics: Mn_2Au a Case Study

Laurent Nicolaï, Ján Minár, Christine Richter, Olivier Heckmann, Jean Zaraket, Laxman Nagi Reddy, Mauro Fanciulli and Karol Hricovini
Study of the Spin Polarisation within the Valence Band of Au(111) Using SARPES

Maria Christine Richter, Jakub Schusser, Mauro Fanciulli, Zakariae El Youbi, Olivier Heckmann, Cephise Cacho, Ivana Vobornik, Debashis Mondal, Ján Minár and Karol Hricovini
Spin Polarisation in $HfTe_2$

Vo Trung Phuc, Arian Arab, Sunil Wilfred D'Souza, Laurent Nicolaï, Alexander Gray and Ján Minár
Theoretical and Experimental Soft X-Ray Photoemission Study of Weyl-Semimetal TaAs

Štěpánka Bachratá, Rostislav Medlín, Zdeněk Jansa, Lucie Prušáková and Ján Minár
Spectroscopic Analysis of Asbestos - Containing Sediments in the Pilsen Region

Zdeněk Jansa, Vojtěch Průcha and Ján Minár
XRD Analysis of Tungsten Carbides with Cobalt Binder

Jakub Schusser, Hendrik Bentmann, Maximilian Ünzelmann, Tim Figgemeier, Samuel Beaulieu, M. Schüler, Ralph Ernsthofer, Jan Minar and Friedel Reinert
Linear Dichroism in Photoelectrons Angular Distribution as a Tool to Probe Orbital Texture and Topology – Combination of Experiment and Theory

Juraj Krempaský
The Simplest Ferroelectric System with Non-Trivial Topology Is Paving the Way Towards Antiferromagnetic Spintronics

Viera Skákalová
Two-Dimensional Hexagonal Copper Iodide

SESSION B2 *New Materials and Structures, Nanostructures and Thin Films, Their Analysis and Specific Applications II.* 08:00

Martin Baránek, Pavol Neilinger, Daniel Manca and Miroslav Grajcar
Superconducting Planar Filter Design

Samuel Kern, Pavol Neilinger, Daniel Manca, Evgeni Il'ichev, Matthias Schmelz, Jürgen Kunert, Gregor Oelsner, Ronny Stolz and Miroslav Grajcar
Transmission Based Characterisation of Superconducting Metamaterial

Pavol Neilinger, Samuel Kern, Daniel Manca and Miroslav Grajcar
Study of Optical Conductivity of Highly Disordered MoC Films by Spectroscopic Ellipsometry

Martin Konôpka and Peter Bokes
On the Crystalline Polyfluorene Structure and Optical Spectra

Christelle Habis, Michel Aillerie and Patrice Bourson
AFM and Raman Spectroscopy of Fluorine Doped Tin Oxide (FTO) Thin Films: a Combined Experimental Study

Martin Hulman
Thin Layers of 2D Transition Metal Dichalcogenides

SESSION B3 *Physical Properties and Structural Aspects of Solid Materials I.* 09:30

Štefan Luby, Peter Švec and Marek Franko
Research and New Applications of Metal Glasses Adapted to the Requirements of Sustainability *(invited lecture)*

Milan Pavúk, Marcel Miglierini and Stanislav Sojak
Surface of Soft Magnetic $Fe_{83.3}Si_4B_{12}Cu_{0.7}$ Alloy in As-Quenched State

Alen Fos, Peter Švec Sr., Peter Švec Jr., Irena Janotová, Dušan Janičkovič, Rupali Tiwari and Marek Búran
Effect of Annealing on Microstructure of Rapidly Quenched Fe-Sn-B Based Alloys

Jana Horniaková, Simeon Samuhel, Jozef Onufer, Peter Duranka and Ján Ziman
The Influence of Tensile Stress on Domain Wall Geometry in Bistable Microwire

Jozef Sitek, Katarína Sedlačková, Beata Butvinová, Július Dekan and Andrea Šagátová
Properties of Nanocrystalline Alloys and Their Precursors after Electron Irradiation

COFFEE BREAK 10:30

SESSION C4 *Physical Properties and Structural Aspects of Solid Materials II.* 11:00

Jana Šimeg Veterníková, Jarmila Degmová, Stanislav Sojak and Vladimír Slugeň
Nanohardness Study of Steel AISI 316L After Various Surface Mechanical Machining Processes

Marcel B. Miglierini
Speciation Analysis of Iron in Natural Ochreous Sediment by Mössbauer Spectrometry

Vladimír Jančárik, Peter Palček and Karol Hilko
Magnetic Testing of Ferritic Stainless Steel

Peter Kollár, Denisa Olekšáková, Miloš Jakubčin, Martin Tkáč, Ján Füzer, Radovan Bureš and Mária Fáberová
Influence of Inner Demagnetizing Field on Energy Loss in NiFeMo Compacted Powder

Oľga Fričová, Mária Hutníková and Hamed Peidayesh
DMA Study of Thermoplastic Starch/Montmorillonite Nanocomposites

Jaroslav Hornak, Pavel Prosr, Pavel Trnka, Petr Kadlec, Ondrej Michal and Stefan Hardon
Effect of MgO Nanoparticles on Material Properties of Cold-Curing Epoxy and Polyurethane Mixtures

Simeon Samuhel, Jana Horniaková, Peter Duranka, Jozef Onufer and Ján Ziman
Dynamics of Domain Wall in Rapidly - Changing Magnetic Field

Anton Baran, Peter Vrábel and Mária Kovaľaková
Application of NMR Techniques for Detection of Structural Changes in Starch-Based Polymer Systems Due to Storage

Július Dekan
Composition of Iron-Bearing Phases in Nantan Meteorite as Determined by Mössbauer Spectrometry

Ondřej Michal, Václav Mentlík and Jaroslav Hornak
Impact of Ultrasonic Mixing on the Electrical Properties of PEI/SiO_2 Nanocomposites

Denisa Olekšáková, Peter Kollár and Ján Füzer
Analysis of Selected Magnetic Properties of Fe-Co Powdered Compacts

SESSION C5 *Optical phenomena in materials, photovoltaics and photonics, new principles in sensors and detection methods, applied optics and optical communications* 11:00

Dana Seyringer, Stanislava Serecunova and Frantisek Uherek
Optical MUX/DeMUX for Telecom Applications *(invited lecture)*

Stanislava Serecunova, Dana Seyringer, Heinz Seyringer, Frantisek Uherek, Tomas Mizera and Dusan Pudis
Design and Simulation of Polymer Based 1x4 Multimode Interference Splitter

Pavol Nemec, Ivan Hotovy, Vlastimil Rehacek and Robert Andok
TiO_2 Sensoric Structures with Controlled Extension of Their Active Area by EBDW and RIE Techniques

Stanislav Jurečka and Martin Králik
Forming of Porous Silicon Layers for PV Applications

Juraj Chlpík, Soňa Kotorová, Tomáš Váry, Július Cirák, Jozef Krajčovič, Martin Cigánek and Gabriel Čík
Optical Properties of Tetrafluorobenzene and Thiophene Copolymer Solutions

SESSION C6 *Computational and theoretical physics* 11:00

Justín Murín, Juraj Paulech, Vladimír Goga, Juraj Hrabovský, Vladimír Kutiš, Roman Kmotorka and Mehdi Aminbaghai
Modeling and Simulation of a Torsion Actuator Made of Nylon Filament

Vladimír Kutiš, Juraj Paulech, Justín Murín and Gabriel Gálik
Model Order Reduction of FEM Piezoelectric Model

Martina Lubyová and Štefan Luby
COVID-19 Pandemic: Lessons from Physics

LUNCH 12:00 -14:00

SOCIAL PROGRAMME 14:00

DINNER AND FRIENDSHIP PARTY (GRILL PARTY) 19:30 - 23:00

Friday, June 25, 2021

BREAKFAST 07:00

SESSION D1 ***International Meeting (Seminar V4)***
Engineering platform and cooperation in area of nanocomposites 08:00

Information about Other Seminars - VISEGRAD Fund

Achieved results during project Visegrad *(Visegrad 22010345)*

Discussion

SESSION A4 ***International workshop:***
Current Successes in the Photoemission and Electron Microscopy IV. 09:00

Acknowledgment. *All contributions in this session were supported by the project CEDAMNF, reg. no. CZ.02.1.01/0.0/0.0/15_003/0000358, co-funded by the European Regional Development Fund (ERDF).*

Lucia Bajtošová, Rostislav Králík, Barbora Křivská, Jozef Veselý and Miroslav Cieslar
In-Situ TEM Deformation of Free-Standing Thin Films and Molecular Dynamics Simulations

Barbora Křivská, Michaela Šlapáková, Peter Minárik, Klaudia Fekete, Rostislav Králík, Mykhailo Stolbchenko, Mirko Schaper and Olexandr Grydin
In-Situ TEM Observation of Intermetallic Phase Growth in Al-Steel Clad Sheet

Benedikt Rösner
Light-Matter Interaction of Optical Vortices

Rostislav Medlín, Tomáš Křenek, Tomáš Kovářík, Lukáš Vála, Martin Koštejn, Stefan Karatodorov, Věra Jandová, Veronika Vavruňková, Radek Fajgar, Josef Pola and Michal Pola
TEM of Photocatalytic Materials

CONCLUDING REMARKS (CONGRESS HALL) 10:00

COFFEE BREAK 10:05

CHECK OUT AT THE HOTEL RECEPTION 11:00

LUNCH 11:30
DEPARTURE 13:00