SCIENTIFIC PROGRAM

Wednesday, June 24, 2026

ARRIVAL OF PARTICIPANTS 09:00 – 13:00

MEETING OF SOLVERS OF THE PROJECT *QM4ST*,
EXCHANGE OF EXPERIENCES, DISCUSSION 09:00

MEETING OF SOLVERS OF DANUBE PROJECT ON ADVANCING SEMICONDUCTOR DETECTORS
EVALUATION OF INFORMATION FROM COSMIC RADIATION MEASUREMENTS CARRIED
OUT ON LOMNICKÝ ŠTÍT 09:00

REGISTRATION AND CHECK-IN AT THE HOTEL RECEPTION 11:00

LUNCH 11:30 – 14:00

OPENING CEREMONY 15:00

PLENARY SESSION A1 *Introductory Lectures (Congress Hall)* 15:05

Carlos Granja, T. Slavicek, J. Gajewski, J. Kubancak, A. Sagatova, Z. Kohout, R. Sykora, A. Rucinsky, P. Stasica, R. Langer, B. Zatko, C. Oancea, I. Wilhelm, and S. Pospisil
Physics Research and Engineering Applications of Pixel Detectors Timepix with Si, SiC, GaAs and CdTe Semiconductor Sensors

Iulia Emilia Brumboiu, Igor Sawicki, Tadeusz Muzioł, and Robert Szczęsny
Local Chemical Environment in Cu_3N and Pd-Doped Cu_3N Nanoparticles: Insights from Spectroscopy

Saleem Ayaz Khan, Maryam Sajedi, Maxim Krivenkov, Dmitry Marchenko, Andrei Varykhalov, Jaime Sánchez-Barriga, Daniel M. Többens, Thomas Unold, Oliver Rader, and Ján Minár
Jahn-Teller Effects Observed in Halide Perovskite $CsPbBr_3$

COFFEE BREAK 16:15

SESSION A2 ***8th International Conference:***
Advances in Nuclear Engineering (Congress Hall) 16:30

Ctibor Strmenský, Radoslav Zajac, Amine Bouhaddane, Slavomír Bebjak, and Miriama Lacková
Methodology of Probability of Fuel Pin Failure for RIA Events

Sofia Gašparová, Vladimír Kršjak, Yamin Song, Pavol Noga, Jaroslav Šoltés, Marek Mikloš, Martin Petriska, Stanislav Sojak, Dušan Vaňa, Branislav Stríbrnský, Róbert Hinca, and Jarmila Degmová
Effect of Alloy Complexity on Radiation-Induced Defects: A PAS Comparison of Model Fe_5Cr and Commercial $Fe_{22}Cr_5Al$

Milan Stefanik, and Lubomir Sklenka
New Trends in Neutron Activation Analysis in the Czech Republic: Capabilities of Low-Intensity Neutron Sources

Lubomir Sklenka,and Milan Stefanik
Role of Research Reactors in Central Europe in Nuclear-Related Applied Research and Development

Filip Osuský, Branislav Vrban, Štefan Čerba, Jakub Lüley, and Vladimír Nečas
Modelling the Potential of Neutron Defectoscopy for PCHE Using MCNP Code

Branislav Vrban, Jozef Zeman, Pavol Blahušiak, Jakub Lüley, Štefan Čerba, Otto Glavo, Filip Révai, and Vladimír Nečas
Characterisation of the Newly Installed Neutron Generator at STU

Filip Révai, Branislav Vrban, Štefan Čerba, Jakub Lüley, Otto Glavo, Evžen Novák, Nikita Saito, and Vladimír Nečas
Experimental and Simulation Study of a D-T Neutron Generator for Neutron Defectoscopy

Štefan Čerba, Adam Virlič, Marián Vojs, Ibrahim Daniel, Branislav Vrban, Jakub Luley, Otto Glavo, and Filip Révai
Results of the RaSens Baloon Experiment

Otto Glavo, Branislav Vrban, Štefan Čerba, Jakub Lüley, Filip Révai, and Vladimír Nečas
The SERPENT 2.2 Cross-Section Temperature Treatment Capability for Sodium-Cooled Small Modular Reactor

Acknowledgment.
This international conference was supported by the Slovak Research Development Agency within the project No. APVV VV-20-300, by Nureco o. z. and by VUJE a.s.

SESSION B1 *9th international workshop: (Hunting Saloon)*
Current Successes in the Photoemission and Electron Microscopy I. *16:45*

This international workshop was supported by the project Quantum materials for applications in sustainable technologies (QM4ST), reg. no. CZ.02.01.01/00/22_008/0004572 by Programme Johannes Amos Commenius, call Excellent Research.

Co-funded by the European Union

Ministry of Education, Youth and Sports of the Czech Republic

Michal Procházka, Nirmal Kumar, Jiří Rezek, Radomír Čerstvý, Jemal Yimer Damte, Jiří Houška, Pavel Baroch, and Ján Minár
Low-Resistivity Boron-Doped Copper Oxide Thin Films Studied by XPS

Timon Moško, and Martin Gmitra
Superconducting and Dielectric Properties of Monolayer α-$TaSi_2N_4$

Jozef Haniš, and Martin Gmitra
Multigap Anisotropic Superconductivity in V_2Ga_5

Paulina Jureczko, and Martin Gmitra
Structurally Driven Modifications of the Magnetic and Electronical Properties in Transition-Metal Iodides

R. M. Varma, K. Kargeti, A. Hossain, S. Mandal, S. Mandal, C. Schlueter, P. Thunström, S. K. Panda, I. Di Marco, O. Eriksson, and D. D. Sarma
Magnetic Correlations in the Spectroscopy of NiO Across the Néel Transition

Martin Lukáč, Paulina Jureczko, and Martin Gmitra
Electric and Magnetic Properties of FeI_2/Graphene Heterostructures from First Principles

Alma Partos, Shivalika Sharma, Heung-Sik Kim, and Igor Di Marco
Topology in Three-Dimensional Kagome Magnets

SESSION C1 *Nuclear Science and Technology, Irradiation of Materials, Radiation Detection I* *(room A)* 18:45

Boris Kvizda
Thermo-Hydraulic Model of the S-Allegro Helium Experimental Loop

Enrica Belfiore, Jean-Emmanuel Groetz, Rodolphe Antoni, and Abdallah Lyoussi
A Comparative Assessment of Monte-Carlo Codes and Nuclear Data Libraries for SiC Neutron Detector Simulations at 14.1 MeV

Ján Remiš, Peter Juriš, and Martin Fogel
CFD Modelling of VVER-440 Fuel Rod Bundle and Fuel Assembly Head for Thermal-Hydraulic Analysis

Soňa Kotorová, Andrea Šagátová, and Bohumír Zaťko
Precise Spectrometric Analysis of CdTe Detector with Ohmic Contact Using Alpha Particle Measurements

Petr Dařílek, and Marek Randík
Analysis of Modified Soft Reactivity Control Systems in Optimized Carbide Core of Reactor ALLEGRO

Vladimír Kršjak, Katarína Jenatová, Sofia Gašparová, Stanislav Sojak, and Jarmila Degmová
Axial Distribution of Vacancy-Type Defect Evolution Along an n-Doped GaAs Boule: A Positron Lifetime Spectroscopy Study

SESSION C2 *Nuclear Science and Technology, Irradiation of Materials, Radiation Detection II.* *(room B)* 18:45

Ladislav Hrubčín, Bohumír Zaťko, and Eva Kováčová
Surface-Barrier Nuclear Particle Detectors Made of High-Purity P-Type Silicon Crystals

Katarína Sedlačková, and Vladimír Nečas
Comparison of Si-PIN and SDD Detector Performance in X-Ray Fluorescence Spectrometry

Katarína Foss, Carlos Granja, Matej Balušík, Abdallah Lyoussi, Bohumír Zaťko, and Andrea Šagátová
Detection Response and Spectral-Composition Characterization of SiC Timepix3 Detector to 14 MeV Neutrons

Jakub Lüley, Adam Turcel, Branislav Vrban, Štefan Čerba, Otto Glavo, Filip Révai, and Vladimír Nečas
Sensitivity and Uncertainty Analysis of GFR2400 Core

Ibrahim Daniel, Štefan Čerba, Marián Vojs, Denis Voltman, Jakub Luley, Filip Révai, and Branislav Stríbrnský
Environmental Measurements Using RaSens

Acknowledgment.
Sessions C1 and C2 were supported by Nureco o. z. and by VUJE a.s.

SESSION C3 *Computational physics and theory of physical properties of matter. Biophysics and interdisciplinary physics of condensed matter. (room C)* *18:45*

Yaroslavna Oleksandrivna Kashyrina, Nadiia Volodymyrivna Kovbuz, Nataliia Ihorivna Usenko, Oleksii Serhiiovych Muratov, and Oleksandr Serhiiovych Roik
Ab Initio MD Modeling of the Structure and Thermodynamic Properties of Liquid Al-Ni-Ce Alloys

Roman Michelko, and Peter Bokes
Classical Interaction Length for Two-Particle Scattering and Its Manifestation in Transmission Amplitude

Natália Šmídová, Hamed Peidayesh, Anton Baran, Oľga Fričová, Mária Kovaľaková, and Ivan Chodák
Enhanced Mechanical Performance of PBAT/Thermoplastic Starch Blends via Reactive Compatibilization Using Liquid Polyisoprene

Mykyta Lukianenko, Goran Bulatović, and Peter Bokes
Analytical Model and Experimental Evidence of Exponential Temperature Decay in Natural Convection Loop

WELCOME PARTY (HOTEL RESTAURANT) 20:00-23:00

Thursday, June 25, 2026

BREAKFAST 07:00

SESSION A3 *Danube project meeting on advancing semiconductor detectors (Congress Hall)* 08:30

Martín Pérez, Juan Jerónimo Blostein, Andres Cicuttin, María Liz Crespo, Miguel Sofo Haro, Eduardo D. Martinez, Fabricio Alcalde Bessia, Luciano Marpegan, Mariano Gómez Berisso, and José Lipovetzky
Radiation Detection Applications Based on Commercial CMOS Image Sensors

Andrea Šagátová, Bohumír Zaťko, Abdallah Lyoussi, Tomáš Slavíček, Carlos Granja, Simona Strýčková, Nikola Kurucová, Katarína Foss, Matej Balušík, Branislav Vrban, Jakub Luley, Olivier Llido, Enrica Belfiore, Nicolas Thiollay, Benedikt Bergmann, Stanislav Pospíšil, Radu Emanuel Mihai, Rudolf Sýkora, and Eva Kováčová
Advancing Semiconductor Detectors Developed in the Frame of DANUBE Strategy Project

Bohumír Zaťko, Marian Varga, Andrea Šagátová, and Eva Kováčová
Diamond Detectors and Their Perspective for Pixelated Neutron Sensors

Matej Balušík, Carlos Granja, Andrea Šagátová, Katarína Foss, and Bohumír Zaťko
14 MeV Neutron Track Recognition with Si Timepix Detector

Tomáš Slavíček, Bohumír Zaťko, Abdallah Lyoussi, Nikola Kurucová, Carlos Granja, Katarína Foss, Matej Balušík, Olivier Llido, Enrica Belfiore, Nicolas Thiollay, Benedikt Bergmann, Stanislav Pospíšil, Radu Emanuel Mihai, Catalina Lesmes Ramirez, Rudolf Sýkora, Eva Kováčová, and Andrea Šagátová
Spectral Broadening of D+T Neutrons Induced by Tritium Target Thickness in the 15–17 MeV Energy Range

Nikola Kurucová, Andrea Šagátová, Carlos Granja, David Hladík, and Bohumír Zaťko
Validation of a Temperature Compensation Method for MiniPIX Timepix3 Detectors Equipped with a SiC Sensor

SESSION B2 ***9th International workshop: (****Hunting Saloon)*
Current Successes in the Photoemission and Electron Microscopy II. 08:30

This international workshop was supported by the project Quantum materials for applications in sustainable technologies (QM4ST), reg. no. CZ.02.01.01/00/22_008/0004572 by Programme Johannes Amos Commenius, call Excellent Research.

Erik Vitols, Carl Svennersted, Patrick Norman, Johann Lüder, and Iulia Emilia−Brumboiu
Computational Spectroscopy for Organic Photovoltaics: Photodegradation of the D18 Organic Polymer

J. Kaswan, R. Salazar, S. W. Dsouza, L. Nicolai, S. Sasi, V. Vavruňková, A. Hartl, V. Strocov, J. Krempaský, H. Reichlová, D. Kriegner, M. Rosmus, N. Olszowska, Z. Sofer, S. Gartner, Ján Minár
The Dichroism in ARPES Study of Intercalated Transition Metal Dichalcogenide $V_{1/3}NbS_2$

Jakub Schusser, Aki Pulkinnen, Raphaël Enzo Cyrille Adéyémi Salazar, Sarath Sasi, Ashutosh S. Wadge, Rafał Kurleto, and Ján Minár
Electronic Properties of Topological Altermagnet CrSb

Martin Gmitra, Maedeh Rassekh, and Marko Milivojević
Self Spin-Orbit Torque in Proximitized Graphene

Juraj Mnich, Marko Milivojević, Paulina Jureczko, Marcin Kurpas, and Martin Gmitra
Charge to Spin Interconversion in Graphene Governed by the Proximity of a Ferroelectric Monolayer of In_2Se_3

COFFEE BREAK 10:00

SESSION B3 ***9th International workshop: (****Hunting Saloon)*
Current Successes in the Photoemission and Electron Microscopy III 10:30

This international workshop was supported by the project Quantum materials for applications in sustainable technologies (QM4ST), reg. no. CZ.02.01.01/00/22_008/0004572 by Programme Johannes Amos Commenius, call Excellent Research.

Co-funded by the European Union

Ministry of Education, Youth and Sports of the Czech Republic

Laurent Nicolaï, Ján Minár, Maria Christine Richter, Olivier Heckmann, Jean Zaraket, Laxman Nagi Reddy, Aki Pulkkinen , Sourour Ayari, Mauro Fanciulli, and Karol Hricovini
The consequences of the surface Rashba effect on the bulk band structure: test case on Au(111)

Ridha Eddhib, and Ján Minár
Spin-Selective Exciton–Exciton Scattering as a Valley Depolarization Channel in Monolayer WSe_2

Sikander Azam, and Ján Minár
Rare-Earth Engineering of $CaAlSiN_3$: Coupled Spin, Optical, Magnetic, and Piezoelectric Responses from DFT+U+SOC

Y. Zhang, C. Greb, D. E. Bürgler, C. M. Schneider, I. Kaminer, and R. Adam
Distinct Ni and Fe Signatures in $Ni_{1-x}Fe_x$ Hysteresis Revealed by Femtosecond XUV Spectroscopy

SESSION C4 *Physical Properties and Structural Aspects of Solid Materials (room A)* 10:30

Jakub Černohous, Ondřej Michal, and Jaroslav Hornak
Physicochemical Characterization of Fluoropolymer-Based Insulating Thin Films

Ondřej Michal, Jakub Černohous, and Jaroslav Hornak
Correlating Charge Trapping Dynamics with Dielectric Breakdown in Polyester-Imide Nanocomposites

Jozef Onufer, Peter Duranka, Peter Vrábel, Mária Kladivová, and Ján Ziman
Manipulation of a Single Domain Wall in Bistable Magnetic Microwire

Oľga Fričová, Anton Baran, Natália Šmídová, Ivan Chodák, Hamed Peidayesh, and Mária Kovaľaková
Compatibility of PBAT/Thermoplastic Starch Blends Studied Using ^{1}H-^{13}C NMR Cross-Polarization Kinetics

Beata Butvinová, Peter Švec Sr, Irena Gejdoš Janotová, Dušan Janičkovič, Ján Hudec, and Vlastimil Boháč
Magnetic Properties, Stability and Applications of Fe-Based Nanocrystalline Alloys

Roman Szewczyk, Jakub Szałatkiewicz, Michał Nowicki, Marzena Szałatkiewicz, and Piotr Gazda
Thermomagnetic Sorting of NdFeB Magnets for Heavy Rare Earth Detection in Urban Mining and Critical Raw Materials Recovery from Hard Disk Drives

Michał Nowicki, Roman Szewczyk, Andriy Marusenkov, Anton V. Nosenko, and Vasyl V. Kyrylchuk
Modelling Unidirectional Anisotropy in Ultra-Soft Co-based Amorphous Alloys with the Jiles-Atherton Framework Using Magnetisation-Dependent Pinning and an Effective Bias Field

Irena Gejdoš Janotová, Jana Boržíková, Peter Švec Sr., and Dušan Janičkovič
Microstructural and Chemical Evolution of Recycled HDD-Derived NdFeB Magnets During Rapid Solidification Processing

SESSION C5 New materials and structures (incl. nanostructures and thin films), their analysis and specific applications. (room B) 10:30

Faizan Ahmad, Michaela Sojková, Sami Ullah, Igor Píš, Andrii Kozak, Martin Hulman, Zdenko Zápražný, and Marian Varga
Large-Domain Bi_2O_2Se Nanosheets Grown on Sapphire via Chemical Vapor Deposition

Yuriy Plevachuk, Ihor Shtablavyi, Peter Švec Sr., and Dušan Janičkovič
New Nanocomposite Materials for Liquid Metal Coolants

Miloš Kováč, Štefan Hardoň, Jozef Kúdelčík, Marián Janek, and Katarzyna Grzybowska
Effect of Aluminum Oxide Nanoparticles on the Electrical and Thermal Conductivity and Thermal Stability of a Novel Polyurethane

Noor Ul Huda, Samuel Kern, Martin Baránek, Miroslav Grajcar, Pavol Neilinger
Preliminary Investigation of MoC Thin Films for Superconducting Single-Photon Detector Applications

Maksym Lisnichuk, Daria Striežovská, Olena Porodko, Martin Fabián, Serhii Vorobiov, Oleksandr Onufriienko, František Onderko, Miloš Matvija, Lubomír Král, and Pavol Sovák
Effect of Fabrication Method on Phase Formation and Hydrogen Absorption in TiVNbCrMnFe High-Entropy Alloy

Štefan Hardoň, Jozef Kúdelčík, Miloš Kováč, and Katarzyna Grzybowska
Broadband Dielectric and Thermal Characterization of Al_2O_3-Modified Two-Component Polyurethane for Electrical Insulation Applications

Marian Janek, Jozef Kudelcik, and Stefan Hardon
Theoretical and Computational Prediction of Heat Transfer in Polyurethane Nanocomposites

Olexiy Yakovenko, Oleksandr Roik, Peter Švec, Dusan Janickovic, Mykhailo Turchanin, Pavlo Agraval, and Peter Švec Sr
Formation of Chemical and Phase Composition of Porous Transition Metal-Based Alloys During Vapor Phase Dealloying

SESSION C6 *Optical phenomena in materials, photovoltaics and photonics, new principles in sensors and detection methods, applied optics and optical communications (room C)* 10:30

Marek Lichý, and Rastislav Róka
Energy-Efficient TWDM-PON Enabled by Adaptive Predictive Dynamic Wavelength and Bandwidth Allocation Algorithm

Dana Seyringer, Stefan Partel, and Fadi Dohnal
Impact of Single-Mode Waveguide Size on Arrayed Waveguide Grating Performance

Norbert Tarjányi, Ivan Melo, Dušan Kohút, and Daniel Káčik
Magnetoactive PDMS as a Smart Material for Optical and Sensorics Applications

Mykhailo Kozachok, and Kornel Richter
Optimization of the Magnetooptical Sensing of the Domain Wall Motion in Microwires

Juraj Chlpík
Application of Surface Plasmon-Enhanced Ellipsometry to Refractive Index Measurement of Aqueous Sucrose Solutions

LUNCH 11:30 -14:00

SOCIAL PROGRAMME 1. FREE PROGRAM
2. BUS TOUR AND VISIT TO THE TREETOP WALK BACHLEDKA 13:30

DINNER AND FRIENDSHIP PARTY (GRILL PARTY)
IN VATRA CLUB AND OUTDOOR TERRACE 19:30 - 23:00

Friday, June 26, 2026

BREAKFAST 07:00

PLENARY SESSION A4 *(Congress Hall)* 09:00

Milan Pavúk, Martin Kopáni, Marcel Miglierini, and Juraj Chlpík
Interference-Induced Artifacts in Magnetic Force Microscopy of Biological Tissue

Valerija Hodolič, Mariana Ušáková, Elemír Ušák, Jaroslava Škriniarová, Rastislav Dosoudil, and Martin Šoka
Characterization of LiZnTi Ferrites Doped by Gd and In

Mariana Ušáková, Elemír Ušák, Martin Šoka, Valerija Hodolič, and Ján Lokaj
Effect of Ruthenium Substitution on the Structure and Magnetic Parameters of NiZn Spinel Ferrites

Elemír Ušák
Leisure Games with Weiss Theory of Ferromagnetism

CONCLUDING REMARKS (CONGRESS HALL)	10:00
COFFEE BREAK	10:05
CHECK OUT AT THE HOTEL RECEPTION	08:00-11:30
LUNCH	11:30
DEPARTURE	12:30