Programme of the 26th International Conference-School

**“Advanced Materials and Technologies 2024”**

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| Date: | 26-30 August, 2024 |
| Venue: | Hotel “Gabija” (<http://www.gabija.lt/en/>) |
|  | Vytauto St. 40, LT-00160 |
|  | Palanga, Lithuania |

**Poster Session**

**August 29, Thursday, 15:30 – 18:00**

***METHODS OF SURFACE ANALYSIS***

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| P1 | Leidenfrost Temperature of Aluminium Samples and Vapour Layer Formation under Boiling Crisis Condition  Ala Gassim Elhag Elshakh Mohamed, Raminta Skvorčinskienė |
| P2 | **Is the Biogas Production Waste a Suitable Source of Plants Nutrients?**  Eglė Didžiulytė, Rasa Šlinkšienė |
| P3 | **Atomic Force Microscopy Characterization of Human Lung Cancer Tissue**  Lāsma Bugovecka, Uldis Maļinovskis, Sergejs Isajevs, Andis Liepiņš, Donāts Erts |
| P4 | **Investigation of Nanobodies and SARS-CoV-2 S Protein Interaction in Real-time by Complementary Surface Sensitive Optical and Acoustic Methods**  Miglė Stančiauskaitė, Silvija Juciutė, Vincentas Mačiulis, Ieva Plikusienė |
| P5 | **High Energy Electron Radiation Dose Influence on Exoelectron Emission of Monocrystalline Silicon**  Gaļina Boka, Yuri Dekhtyar, Mirko Rocca, Elizabete Skrebele |
| P6 | **Study of the Properties of Resistance Welded Joints of Microcomposite Conductors**  Paulius Beinoras, Nikolaj Višniakov, Oleksandr Kapustynskyi |
| P7 | **Green Synthesis of Silver Nanoparticles from Fermented Origanum vulgare Extract and Their Antimicrobial, Antioxidant Activity and Phytochemical Composition**  Syeda Hijab Zehra, Aistė Balčiūnaitienė, Jonas Viškelis |

***SURFACE ENGINEERING AND NANOSTRUCTURES***

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| P8 | Optical Characterization of Bismuth Sulfide Film Deposited on FTO Glass  Aistis Melnikas, Skirma Žalenkienė |
| P9 | **The Design and Manufacturing of High Diffraction Efficiency Gratings Based on Multi-Layer Dielectric Mirrors**  Andrius Žutautas, Sigitas Tamulevičius, Tomas Tamulevičius |
| P10 | **Development and Characterization of Hexylamine 2D WTe2 Protective Coatings**  Aris Jansons, Andrejs Terehovs, Darja Dolbe, Jevgenijs Gabrusenoks, Anatolijs Sarakovskis, Gunta Kunakova |
| P11 | **Site Selective Growth of 2D Tungsten Ditelluride**  Darja Dolbe, Andrejs Terehovs, Martins Zubkins, Gatis Mozolevskis, Gunta Kunakova |
| P12 | **The Influence of Spike Size on the Linear and Nonlinear Optical Properties of Gold Nanourchins**  Domantas Peckus, Fatima Albatoul Kasabji, Maziar Moussavi, Loic Vidal, Asta Tamulevičienė, Arnaud Spangenberg, Karine Mougin, Sigitas Tamulevičius |
| P13 | **Features of Using the Laser GRBL Control Program for Forming Point Grating Images**  Algirdas Lazauskas, Virgilijus Minialga, Erika Rajackaitė, Andrius Žutautas |
| P14 | **Electrochemical Sensor Based on MXenes for Accurate Detection of Lead and Cadmium Ions**  Ilya Navitski, Šarūnas Žukauskas, Alma Ručinskienė, Arūnas Ramanavičius |
| P15 | **Electret Templates for Metal-insulator Surface Structures**  Maksym Barabash, Dmytro Gryn’ko, Roman Lytvyn, Anton Sezonenko, Vladyslav Martynchuk, Anastasiia Kolesnychenko, Maryna Romashkina, Bogdan Pysarevskyi, Yeva Boboshko |
| P16 | **Reduction of Gold Thin Film Reflectance on Quartz Crystal Resonators via Femtosecond Laser-Processing**  Mantas Mikalkevičius, Martin Hruška, Joris More Chevalier, Fitl Premysl, Martin Vrňata, Michal Novotný, Asta Tamulevičienė, Tomas Tamulevičius |
| P17 | **Use of Environmentally Friendly and Biodegradable Organic Materials in Granular Fertilizers**  Odeta Pocienė, Rasa Šlinkšienė |
| P18 | **Research of the Catalyst Chamber and Bed Properties of a Monopropellant Rocket Thruster**  Paulius Baronas, Sigitas Kilikevičius, Inga Morkvėnaitė-Vilkončienė |
| P19 | **Self-Assembled Monolayers on Screen-Printed Electrodes: Formation and Evaluation**  Simona Raišytė, Viktorija Liustrovaitė, Arūnas Ramanavičius |
| P20 | **Advancing SEIRA Spectroscopy for *in situ*: Fiber-Based Detection of Naphthalene with Ag-PVP Nanoparticles**  Sonata Adomaviciute-Grabusove, Olga Bibikova, Tatiana Sakharova, Viacheslav Artyushenko, Valdas Sablinskas |
| P21 | **A New Electrochemical Sensor for Lithium Hexafluorophosphate Detection**  Wejden Gongi, Jerome Launay, Karine Mougin, Delphine Faye |
| P22 | **Development of Technology for Integrating Holograms into the Surface of Plastic Products**  Erika Rajackaitė, Indrė Danisevičienė, Andrius Žutautas, Pranas Narmontas |

***ELECTRONIC AND OPTICAL MATERIALS***

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| P23 | Emission Efficiency Investigation of GaAsBi-based VECSEL  Aistė Butkutė, Aivaras Špokas, Andrea Zelioli, Augustas Vaitkevičius, Renata Butkutė, Evelina Dudutienė |
| P24 | **GaAsBi: From MBE Growth to NIR Emitters**  Aivaras Špokas, Andrea Zelioli, Andrius Bičiūnas, Mindaugas Kamarauskas, Aurimas Čerškus, Bronislovas Čechavičius, Evelina Dudutienė, Renata Butkutė |
| P25 | **Modulating Luminescence and Charge Transporting Properties of Dibenzo[*a,c*]imidazophenazine-based Emitters by Changing the Donor Substituents**  Aliyu Mohammed Hamisu, Viktorija Andruleviciene, Matas Guzauskas, Juozas Vidas Grazulevicius |
| P26 | **Magnetotransport Studies of CVD Synthesized Tungsten Ditelluride 2D Crystals**  Andrejs Terehovs, Aris Jansons, Agnese Spustaka, Gunta Kunakova |
| P27 | **New Anthracene and Alkoxycarbazole-based Derivatives for TTA-OLEDs**  Audrius Bucinskas, Pavel Arsenyan, Tien-Lung Chiu, Oleksandr Bezvikonnyi, Dmytro Volyniuk, Juozas Vidas Grazulevicius |
| P28 | **Enhancement of Efficiency of Red Organic Light-emitting Diodes Based on a New Derivative of Phenazine and Diphenylamine by a Quantum Well Approach**  Dmytro Volyniuk, Mariia Stanitska, Lilia Deva, Melika Ghasemi, Pavlo Stakhira, Juozas Vidas Gražulevičius |
| P29 | **Novel Host Materials for Stable Blue Thermally Activated Delayed Fluorescence OLEDs**  Domantas Berenis, Rita Butkutė, Gediminas Kreiza, Giedrius Puidokas, Vaida Jašinskaitė-Koženiauskienė, Karolis Kazlauskas |
| P30 | **Unlocking the Potential of Phenylethenyl-Substituted Phenoxazine and Phenothiazine Derivatives: Aggregation-Induced Emission Enhancement for High-Performance, Non-Doped OLEDs**  Ehsan Ullah Rashid, Monika Cekaviciute, Jurate Simokaitiene, Juozas Vidas Grazulevicius, Dmytro Volyniuk, Khrystyna Ivaniuk, Pavlo Stakhira |
| P31 | **Enhanced coherent optical effects in Ξ-shaped hybrid quantum-plasmonic systems**  Hamid Reza Hamedi, Julius Ruseckas, Vassilios Yannopapas, Emmanuel Paspalakis |
| P32 | **Application of the Modified Salan-type Ligands to the Cu2+ and Fe3+ Optical Detection in Aqueous Media**  Iryna Tepliakova, Roman Viter, George Kostakis, Martin Sahul |
| P33 | **Electron-Poor Acridones and Acridiniums as Super Photooxidants in Molecularp Hotoelectrochemistry byUnusual Mechanisms**  Jonas Žurauskas, Paulius Vaickūnas, Soňa Boháčová, Shangze Wu, Valeria Butera, Simon Schmid, Michał Domański, Tomáš Slanina, Joshua Philip Barham, Edvinas Orentas |
| P34 | **Exploration of Novel Monomeric and Hexameric Anthracene Derivatives for Triplet-Triplet Annihilation Upconversion**  Justas Lekavičius, Paulius Baronas, Maciej Majdecki, Przemysław Gaweł, Kasper Moth Poulsen, Karolis Kazlauskas |
| P35 | **Photophysical Study of Purine-based Metal Ion Sensors**  Kamilė Tulaitė, Justina Jovaišaitė, Irina Novosjolova, Maris Turks, Gediminas Jonušauskas, Saulius Juršėnas |
| P36 | **Photothermal Activity of Silver Nanoparticles for Polymer Shape Memory Activation**  Katrina Krizmane, Virginija Vitola, Milena Dile, Aleksejs Zolotarjovs |
| P37 | **Donor-ᴨ-Acceptor (D-ᴨ-A) Based** **Solid State Emitters for Organic Light Emitting Diodes (OLEDs)**  Khushdeep Kaur, Asta Dabuliene, Juozas Vidas Grazulevicius |
| P38 | **Optical Characterization of Au Nanoparticle-TiO2 Heterostructures Employing Experimental and Computational Methods**  Klaudijus Midveris, Tomas Klinavičius, Domantas Peckus, Andrius Vasiliauskas, Šarūnas Meškinis, Asta Tamulevičienė, Tomas Tamulevičius |
| P39 | **Optimizing ZnS:Cu-Based Electroluminescent Films for Flexible Optoelectronic Applications**  Madara Klave, Milena Dile, Marija Dunce, Ernests Einbergs, Aleksejs Zolotarjovs |
| P40 | **Improving the Statistical Factor of Perylene via TIPS Functionalization**  Manvydas Dapkevičius, Steponas Raišys, Lukas Naimovičius, Kasper Moth-Poulsen, Karolis Kazlauskas |
| P41 | **Donor-Ornamented Derivatives of Benzodioxinoquinoxaline Enabling Solid-State-Enhanced RTP/TADF and High Charge Carrier Mobilities**  Mariia Stanitska, Lilia Deva, Levani Schirtladze, Glib Baryshnikov, Dmytro Volyniuk, Pavlo Stakhira, Juozas Vidas Gražulevicius |
| P42 | **Application of Recycled PVB as Encapsulant for PV Modules**  Matas Rudzikas, Egle Fataraitė Urbonienė, Beatriz Yécora, Tamara Oroz, Filip Brkić |
| P43 | **Harnessing Twisted Phenothiazine and Phenothiazine Sulfone Derivatives as Emitters and HTMs for Efficient Doping Free Fluorescent and Multiple-Resonance TADF OLEDs**  Melika Ghasemi, Ramakant Gavale, Faizal Khan, Dmytro Volyniuk, Juozas Vidas Gražulevičius, Rajneesh Misra |
| P44 | **Quinoxaline-Based Derivatives as Red Emission Organic Luminophores, Synthesis and Investigation**  Mohamed Hassan Saad Abdella, Matas Guzauskas, Jurate Simokaitiene, Juozas Vidas Grazulevicius |
| P45 | **Plasmonic Diffraction Gratings for THz Emission**  Mohammad Esmaeil Daraei, Ignas Nevinskas |
| P46 | **Azimuthal Dependence of Electromagnetically Induced Grating in a Double V-type Atomic System near Plasmonic Nanostructure**  Teodora Kirova, Seyyed Hossein Asadpour, Hamid Reza Hamedi, Vassilios Yannopapas, Emmanuel Paspalakis |
| P47 | **Deep Learning Methods for Colloidal Silver Nanoparticle Concentration and Size Distribution Determination from UV–Vis Extinction Spectra**  Tomas Klinavičius, Nazdeya Khinevich, Asta Tamulevičienė, Loic Vidal, Sigitas Tamulevičius, Tomas Tamulevičius |

***CERAMICS***

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| P48 | Development of Mullite Based Ceramics using Amorphous Silica from Rice Husk Ash as Alternative Source of Silica  OjiBabatunde, Emmanuel Imoru |
| P49 | **In-Vitro Bioactivity of Bioceramics Developed by Solid State Sintering using Waste Glass Doped with Zno Particles**  OjiBabatunde, Emmanuel Imoru |
| P50 | Porous Mullite Ceramics Modified with Microsized ZrO2 and WO3 Ludmila Mahnicka-Goremikina, Ruta Svinka, Visvaldis Svinka, Vadims Goremikins |
| P51 | **Influence of Zn2+ Ions on the Crystallization of Calcium Phosphates under Hydrothermal Conditions**  Monika Tiskute, Kestutis Baltakys, Tadas Dambrauskas |

***POLYMERS AND COMPOSITES***

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| P52 | Assessing the Performance of Small Concrete Beams Reinforced with Steel and Fiber Reinforced Polymer Bars  Abel Belay, Julita Krassowska, Marta Kosior-Kazberuk |
| P53 | **Exploring PV Module Structures Combining Conventional Building Elements and PV Module Materials**  Algirdas Baležentis1,2, Piotr Dubravskij2, Eglė Fataraitė-Urbonienė2,3, Juras Ulbikas1,2, Jolanta Donėlienė2, Matas Rudzikas2 |
| P54 | **High Hydrostatic Pressure as a Prospective Approach for Processing and Sterilizing Drug-loaded Hydrogels**  Anete Vircava, Agnese Brangule, Ingus Skadiņš |
| P55 | **Evaluation of Polymer Gel Dosimeters Response to Electron and X-ray Irradiation: Dependence of Dose Rate and Energy**  Aurimas Krauleidis, Diana Adlienė |
| P56 | **Physicochemical Properties of Choline Chloride-based Deep Eutectic Solvents**  Paulina Nemaniutė, Asta Grigucevičienė, Dalia Bražinskienė |
| P57 | **Comparison of Surface Roughness Parameters of Abraded Polymer Materials of Different Softness**  Yadukrishna Kandamkarikkal Murali, Joris Vėžys, Jolanta Donėlienė, Eglė Fataraitė Urbonienė |
| P58 | **BIO4EEB - BIO Insulation Materials for Enhancing the Energy Performance of Buildings**  Vitas Mačiulis,Eglė Fataraitė-Urbonienė, Saulius Pakalka |
| P59 | **Product Authentication with Active Optical Elements and Special-Purpose Dyes**  Indrė Danisevičienė, Erika Rajackaitė, Andrius Žutautas, Pranas Narmontas |
| P60 | **Polymer Films with Green Silver Nanoparticles from Symphyti Radix as Antibiotic Oxidants**  Khadija Ramzan, Jonas Viskelis |
| P61 | **Application of Nanocomposites to Remove Micro and Nanoplastics**  Mahrosh Javed, Galina Lujanienė, Sergej Šemčuk, Vidas Pakštas, Kęstutis Mažeika, Algirdas Selskis |
| P62 | **Magnetic Biopolymers for Removal of Radionuclides and Emerging Contaminants in Aquatic Ecosystems**  Sergej Šemčuk, Danguolė Montvydienė, Nijolė Kazlauskienė, Vidas Pakštas, Kęstutis Mažeika, Mahrosh Javed, Galina Lujanienė, Kęstutis Jokšas, Živilė Jurgelėnė |
| P63 | **Development of an Electrochemical Sensor Utilising Molecularly Imprinted Polypyrrole for the Rapid Detection of *Listeria monocytogenes* Bacteria**  Viktorija Liustrovaite, Maksym Pogorielov, Raimonda Boguzaite, Vilma Ratautaite, Almira Ramanaviciene, Greta Pilvenyte, Viktoriia Holubnycha, Viktoriia Korniienko, Kateryna Diedkova, Roman Viter, Arunas Ramanavicius |

***ADVANCED ENGINEERING MATERIALS***

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| P64 | Revolutionizing Infrastructure Monitoring: Smart Cement and Sensor Integration  Addisu Solomon, Maria Ratajczak |
| P65 | **Green Synthesis of Silver Nanoparticles: A Promising Approach for Medical Applications**  Akvilė Andziukevičiūtė-Jankūnienė, Erika Adomavičiūtė, Aistė Balčiūnaitienė, Virginija Jankauskaitė |
| P66 | **Peculiarities in Growing Thin Film Multilayer Nanostructures for Applications in Giant Magnetoresistance – Based Sensors**  **Dariuš Antonovič, Vilius Vertelis, Andrius Maneikis, Nerija Žurauskienė** |
| P67 | **Nitrocellulose Membrane Modified with Flow-Delay Laser µ-Machined as a Sensitivity and Signal Enhancement Strategy**  Gazy Khatmi, Tomas Klinavičius, Martynas Simanavičius, Laimis Silimavičius, Asta Tamulevičienė, Agnė Rimkutė, Indrė Kučinskaitė-Kodzė, Gintautas Gylys, Tomas Tamulevičius |
| P68 | **Enhancing Acoustic Properties of Wallboards Using Lignocellulosic Materials: Hemp Shives and Wood Chips**  Ilze Gūtmane, Inga Zotova, Edgars Kirilovs |
| P69 | **Geometric Distortion Analysis of Elements of QR Code Embedded in Textiles**  Inga Breitmozerė, Jovita Dargienė, Jurgita Domskienė |
| P70 | **Synthesis of Antiviral Silver Nanoparticle Polymer Nanocomposite Coatings with 3D Printing Integration for Long-lasting Antimicrobial Protection**  Mindaugas Ilickas, Asta Guobienė, Brigita Abakevičienė |

***MATERIALS FOR ENERGY***

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| P71 | Preparation of Platinum-Iron Nanoparticles Supported on Reduced Graphene Oxide by Using a Green-chemistry Method  Adriana Marinoiu |
| P72 | **Monolayers with Carbazole Moiety and Different Functional Groups for Perovskite Solar Cells**  Aida Drevilkauskaite, Artiom Magomedov, Vytautas Getautis |
| P73 | **Investigation of the Influence of Heavy Mg2+-codoping on Emission Properties of (Lu,Gd)3(Ga,Al)5O12:Ce Scintillators**  Arnoldas Solovjovas, Saulius Nargelas, Yauheni Talochka,Žydrūnas Podlipskas,Miroslav Kucera, Zuzana Lucenicova, Gintautas Tamulaitis |
| P74 | **Biofuel Cells Based on Metal Hexacyanoferrate Modified – Yeast Cells**  Gabija Adomaitė, Aušra Valiūnienė |
| P75 | **Hydrogen Generation from an Alkaline NaBH₄ Solution Using Different Nickel Catalysts**  Gitana Valeckytė, Zita Sukackienė, Virginija Kepenienė, Irena Stalnionienė, Vitalija Jasulaitienė, Jūratė Vaičiūnienė, Loreta Tamašauskaitė-Tamašiūnaitė, Giedrius Stalnionis, Eugenijus Norkus |
| P76 | **Study of Fe2O3 and TiO2 Molar Ratio Impact on Lithium-ion Battery Anode Performance**  Kaspars Kaprans, Gunars Bajars, Gints Kucinskis |
| P77 | **Thermal Treatment Impact on Tungsten Boride Nanofilms**  Liga Avotina, Annija Elizabete Goldmane, Edgars Vanags,  Lada Bumbure. Marina Romanova, Hermanis Sorokins, Alexei Muhin, Aleksandrs Zaslavskis, Gunta Kizane, Yuri Dekhtyar |
| P78 | **Investigation of Photoelectrochemical Systems for Production of Hydrogen and Oxidants**  Milda Petruleviciene, Irena Savickaja, Jelena Kovger-Jarosevic, Jurga Juodkazyte, Arunas Ramanavicius |
| P79 | **2D- reduced graphene oxide induced bi-functional plasmonic p-n heterostructure for photoelectrochemical water splitting**  Muhammad Haris, Klaudijus Midveris,Syeda Ammara Shabbir, Tomas Tamulevičius, Gvidas Klyvis, Mantas Mikalkevičius,Algirdas Lazauskas, Sigitas Tamulevičius |
| P80 | **Environmental Impact on the Structural and Optoelectronic Behavior of Mixed Tin-Lead Perovskites**  Paula Baltaševičiūtė, Rokas Gegevičius, Vidas Pakštas, Arnas Naujokaitis, Vidmantas Gulbinas, Marius Franckevičius |
| P81 | **Comparative Analysis of Methane Pyrolysis Catalysts Supported on Alumina and Titania**  Raitis Kaspars Sika, Ainārs Konks, Ansis E. Zīvers, Līga Grīnberga, Šarūnas Varnagiris, Marius Urbonavicius |
| P82 | **Enhancing Electron Transfer Efficiency in Microbial Fuel Cells through Gold Nanoparticle Modification of *Saccharomyces cerevisiae***  Teresė Kondrotaitė, Inga Morkvėnaitė-Vilkončienė |
| P83 | **Concentration Quenching in Solutions of Chlorophyll Molecules**  Vilius Čirgelis, Simona Streckaitė, Jevgenij Chmeliov, Leonas Valkūnas, Andrius Gelžinis |
| P84 | **Synthesis of Nickel and Nitrogen-doped Biomass-based Activated Carbon Catalyst for Hydrazine Oxidation**  Virginija Ulevičienė, Aldona Balčiūnaitė, Daina Upskuvienė, Galina Dobele, Aleksandrs Volperts, Ance Plavniece, Aivars Zhurinsh, Loreta Tamašauskaitė-Tamašiūnaitė, Eugenijus Norkus |

***ELECTRONIC AND OPTICAL MATERIALS***

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| P85 | Thermally Activated Delayed Fluorescent Cyanopyridine-Based Emitters for Organic Light Emitting Diodes and Sensors of Nitroaromatic Explosive Materials  Hlafira Krasnozhon, Dalius Gudeika, Oleksandr Bezvikonnyi, Dmytro Volyniuk, Juozas Vidas Grazulevicius |
| P86 | **Development of New Pyrene and Anthracene-based Emitters via RPA Technology**  Diana Duda, Audrius Bucinskas, Oleksandr Bezvikonnyi, Juozas Vidas Grazulevicius |
| P87 | **Smart Windows with Novel Laser Induced Metal Deposited Electrodes**  Alexandr Belosludtsev, Dainius Balkauskas, Modestas Sadauskas, Evaldas Kvietkauskas, Karolis Ratautas |