28TH INTERNATIONAL CONFERENCE-SCHOOL

ADVANCED MATERIALS AND TECHNOLOGIES 2026

Date: 24–28 August 2026

Venue: Hotel "Gabija"
Vytauto St. 40,
Palanga, Lithuania
http://www.gabija.lt/en/

advancedmaterials.ktu.edu

POSTER SESSION

AUGUST 27, THURSDAY, 15:00 – 17:00

METHODS OF SURFACE ANALYSIS

P1 **Label-Free SPR Immunosensor for LukF-PV Detection**
Agnė Giniūnaitė, Almira Ramanavičienė, Asta Kaušaitė-Mikštimienė

P2 **Characterization Techniques for the Adipose Tissue**
Edvardas Brimas, Inga Grigoraviciute, **Aivaras Kareiva**

P3 **Optical Properties and Laser-Matter Interaction of Thin Film High Entropy Alloys**
Eulàlia Puig Vilardell, Hsin-Hui Huang, Tomas Katkus, Andrew Ang, Yoshiaki Nishijima, Vijayakumar Anand, Darius Gailevičius, Saulius Juodkazis

P4 **An Electrochemical Sensor Based on the Molecularly Imprinted Poly (o-phenylenediamine) and Gold Nanostructures for Detecting Amoxicillin**
Jawaria Khan, Viktorija Liustrovaite, Vilma Ratautaite

P5 **Weyl-Kondo Physics in the Heavy-Fermion Compound $CeRu_4Sn_6$**
Jorūnas Dobilas, Martin Braß, Frank T. Ebel, Silke Paschen, Karsten Held

P6 **Chitosan-Modified Molecularly Imprinted Polymer Electrochemical Sensor for the Detection of Tetracycline**
Nauman Naeem, Vilma Ratautaite, Ernestas Brazys

P7 **Automated Computer Vision Framework for Standardised Surface Quality Evaluation of Anodized Satellite-Grade Aluminium Alloys**
Paulius Baronas, Urtė Prentice

P8 **Enhanced Polyester Surface Stabilisation Using Plasma-Assisted Crosslinked Alginate Coatings for Microfiber Release Control**
Zeenat Fatima Iqbal, Julija Baltušnikaitė-Guzaitienė

SURFACE ENGINEERING AND NANOSTRUCTURES

P9 **Collagen-SPION Magnetic Nanocomposites for Small-Scale Oil Spill Remediation in Water Basins**
Anna Marta Zeberga, Ansis Mezulis, Gunārs Bajars, Rita Poikane, Maris Skudra, Ieva Putna-Nimane

P10 **Non-Invasive Diffractive Sweat Patch for Early Detection of Diabetic Peripheral Neuropathy**
Erika Rajackaitė, Diana Šimonienė, Indrė Danisevičienė, Andrius Žutautas, Agnė Kadusauskienė, Aistė Čemerkaitė, Pranas Narmontas

P11 **Detection of Meloxicam Utilizing a Surface Engineered Platinum-Based Electrochemical Sensor**
Hassan Kouchakzadeh, Šarūnas Žukauskas

P12 **Geometrically Controlled Plasmonic Laser-Written 2D Arrays of Gold Nanostructures and Their Potential Applications**
Kernius Vilkevičius, Algirdas Karnilavičius, Evaldas Stankevičius

P13 **Rational Design of Plasmonic Gas Sensors by Optimizing Spectrally-Resolved Volumetric Raman Enhancement Factor**
Maziar Moussavi, Sigitas Tamulevičius

P14 **A Generalized Deep Learning Framework for Nuclide Identification Using 1D CNNs on Augmented Log-Z-Score Spectral Fingerprints from GEM Detectors**
Muhammad Usman Uraf Ishafaq, Algirdas Lazauskas, Brigita Abakevičienė, Sigitas Tamulevičius

P15 **ZnO Nanotetrapod Synthesis and Application in Sensing**
Mindaugas Ilickas, **Simas Račkauskas**

P16 **Simulation and Fabrication of Monolithic Silicon Metalens for Mid-Infrared Applications**
Erika Jonaitytė, Klaudijus Midveris, Mindaugas Juodėnas

P17 **LED-Induced Tuning of Plasmonic Nanoparticles for OLED-Structures**
Tetiana Bulavinets, Mariana Shepida, Oleksandr Kuznietsov, Sviatoslav Shcherbatyi, Serhii Melnykov, Bohdan Bulavinets, Natalia Korytnytska, Iryna Yaremchuk

ELECTRONIC AND OPTICAL MATERIALS

P18 **Investigation of Laser-Induced Damage Threshold Degradation Over Time in Nanostructured GLAD All-Silica Optical Mirrors**
Adomas Strazdas, Lukas Ramalis

P19 **Synthesis and Properties of Lanthanide-Doped Lutetium Scandates**

Aigul Dastankyzy, Andrius Pakalniskis, Saulius Nargelas, Dovydas Karoblis, Arturas Katelnikovas, Gintautas Tamulaitis, **Aivaras Kareiva**

P20 **High Reflective Metal Mirrors for Space Applications**

Alexandr Belosludtsev, Ignas Bitinaitis, Vitalij Kovalevskij, Sabereh T. Rastkar, Anna Sytchkova

P21 **Synthesis of Nonlinear Optically Active Indandione and Indacene Tetraone Pyridinium Betaines**

Anastasija Rižkova, Kaspars Traskovskis, Arturs Bundulis

P22 **Influence of Nb and Ta Doping on Structural, Optical and Electrical Properties of $BiFeO_3$ Thin Films Deposited by Reactive Magnetron Co-Sputtering**

Andrejus Litvakas, Aleksandras Iljinas

P23 **Design and Investigation of New Hole-Transporting Counterparts of Commercial Materials**

Audrius Bucinskas, Oleksandr Bezvikonnyi, Khrystyna Ivaniuk, Ehsan Ullah Rashid, Stepan Kutsiy, Dmytro Volyniuk, Pavlo Stakhira, Juozas V. Grazulevicius

P24 **Metal Oxide – Schiff Base Composite as Novel Optical Sensors for Metal Ion Detection in Aquatic Environment**

Debleena Mandal, Magdalena Barwiolek, Dominika Jankowska, Anna K. Kędziera, Tadeusz M. Muzioł, Iryna Tepliakova, Roman Viter

P25 **Novel Na-doped YAG:Eu0.03 Garnets: Synthesis, Structural and Optical Properties**

Diana Vistorskaja, Nataliya Krutyak, Aivaras Kareiva

P26 **Development of White Organic Light Emitting Diodes Using Emitters Exhibiting Crystallisation-Induced Emission**

Dmytro Volyniuk, Stepan Kutsiy, Hanna M. Zinchenko, Yurii Kovtun, Yulia Sadova, Andrii Hotynchan, Mykhaylo Hladun, Pavlo Stakhira, Mykhaylo A. Potopnyk, Juozas V. Grazulevicius

P27 **Defect Influence on Excited State Relaxation Dynamics in ZnO Tetrapods Based on Ultrafast Laser Spectroscopy Methods**

Domantas Peckus, Marius Franckevičius, Martynas Tichonovas, Simas Račkauskas

P28 **Linear, Nonlinear Optical, and Electrical Properties of Zinc Oxide Tetrapod/Metal-Organic Framework Hybrid Structures**

ADomantas Peckus, Valentina Gargiulo, Martynas Tichonovas, Roberto di Capua, Luciana Cimino, Simas Račkauskas, Michela Alfè

P29 **A Novel Indanoquinoline-Based Donor-Acceptor Molecule with Red-to-NIR TADF Emission**

Fatima Zohra Boudjenane, Kaspars Traskovskis

P30 **Luminescence Properties of Rare-Earth and Bi^{3+} Activated $NaAlGeO_4$ Phosphors**

Gabija Janusauskaite, Martynas Misevicius

P31 **Point defects in CsI, LYSO, YSO, Y3Al5O12 and Gd3Ga5O12 Scintillators Irradiated with Swift Heavy Ions**

Marina Konuhova, Gusts Agafonovs, Marija Dunce, Anatoli I. Popov

P32 **Size-Dependent Mechanisms of Plasmon Resonance in Metal-Organic Material Systems**

Tetiana Bulavinets, Khrystyna Ivaniuk, **Iryna Yaremchuk**

P33 **Light-Enhanced Gas Sensing with Nanostructured Oxide Materials**

Jaroslav Otta, Tea Avarmaa, Valter Kiisk, Raivis Eglītis, Andris Šutka, Martin Vrňata, Michal Novotný, Raivo Jaaniso

P34 **Choices of Gas Phase Precursors for 2D Materials**

Kalaiarasan Meganathan, Zdenek Sofer

P35 **Optical Power Limiting Properties of Indenothieno[3,2- b]thiophene-Based D–A–D Chromophores**

Kirills Dmitrijevs, Arturs Bundulis, Kaspars Traskovskis

P36 **Development of Oxygen Sensors Using Thiophene-Derived Emitters Exhibiting Room Temperature Phosphorescence**

Lesia Volyniuk, Clara Fabregat, Dolores Velasco, Audrius Bucinskas, Dmytro Volyniuk, Juozas V. Grazulevicius

P37 **Point Defects and Their Thermal Stability in BaF2, PbF2, CeF3 and CaF2 Fluoride Crystals**

Marina Konuhova, **Liba L. Eltermane**, Marija Dunce, Anatoli I. Popov

P38 **Investigations of Photophysical Properties of a Novel Pyrazine-Based Donor–Acceptor Luminophore for White OLED Applications**

Liliia Deva, Pavlo Stakhira, Iryna Yaremchuk, Lyudmyla Kanibolotska, Alexandr Kanibolotsky, Peter J. Skabara, Dmytro Volyniuk, Juozas Vidas Grazulevicius

P39 **Highly Efficient Materials Based on Fused Indenopyrazine Derivatives for WOLEDs**

Lyudmyla Kanibolotska, Oleksandr Kanibolotskyy, Iryna Yaremchuk, Peter J. Skabara

P40 **Photoconductive Materials for Template-Based Ordered Nanoobjects**

Mykhailo Zabolotnyy, Iyudmyla Aslamova, Dmytro Gryn'ko, Roman Lytvyn, Anton Sezonenko, Oleksii Bashynskyi, Kolesnychenko Anastasiia, Minitska Nataliia, Pysarevskyi Bogdan, **Maksym Barabash**

P41 **The Photostability of Hematoporphyrin in Buffered Aqueous Solutions at Different L-Ascorbate Concentrations**

Marija Kalnaitytė, Rokas Dobužinskas, Saulius Bagdonas

P42 **Teamwork Makes the Light White: Blending Yellow Emitters and Blue Triazines**

Matas Gužauskas, Mariia Stanitska, Dmytro Volyniuk, Juozas Vidas Gražulevičius

P43 **Microwave-Assisted Synthesis of Doped Zinc Sulfide Electroluminescent Phosphors**

Milena Dile, Madara Klave, Katrina Laganovska, Virginija Vitola, Inga Pudza, Alexei Kuzmin

P44 **Development and Characterisation of Novel Trimezoyl Derivatives for High-Efficiency Organic Light-Emitting Diodes**

Nataliia Kuzyk, Khrystyna Ivaniuk, Iryna Yaremchuk, Pavlo Stakhira, Alena Kimpel, Lesia Volyniuk, Mariia Stanitska, Oleksandr Bezvikonnyi, Dmytro Volyniuk, Juozas Vidas Grazulevicius

P45 **Cyanopyridine Derivatives as Triplet Emitters for Efficient Organic Light Emitting Diodes**

Oleksandr Bezvikonnyi, Akaki Kalatozishvili, Dalius Gudeika, Jurate Simokaitiene, Dmytro Volyniuk, Amjad Ali, Glib Baryshnikov, Hans Ågren, Hlafira Krasnozhon, Irena Kulszewicz-Bajer, Juozas Vidas Grazulevicius, Aivars Vembris

P46 **Hybrid Rotaxanes with Heterometallic Octanuclear Rings as Materials for Quantum Computing**

Oleksandr L. Kanibolotskyy, Peter J. Skabara, Olivia Churchill, Selena J. Lockyer, Grigore A. Timco, Lubomir Loci, Alice M. Bowen, Eric J. L. McInnes, David Collison, Richard E. P. Winpenny

P47 **Investigating the Structural and Photoluminescent Synergy in Sol-Gel Derived YAG:Ce Phosphors Integrated with Multi-Walled Carbon Nanotubes**

Olzhas Shalkhar, Justina Gaidukevic, Sridharan Balu, Thomas C.-K. Yang, Aivaras Kareiva

P48 **ZnO Nanotetrapod Network for Neuromorpfic Computing**

Patricija Kirvelaitytė, Mindaugas Ilickas, Martynas Tichonovas, **Simas Račkauskas**

P49 **Visible Photoluminescence in Piezoelectric Diphenylalanine Thin Films**

Suvankar Mondal, Marija Dunce, Svitlana Kopyl, Pavel Zelenovskiy, Melda Kemere, Eriks Birks, Andrei Kholkin

P50 **Development of Non-Alternant Hydrocarbons with Thermally Activated Delayed Fluorescence Characteristics**

Vedaslavs Voroncovs, Armands Rudušs, Kaspars Traskovskis

P51 **New Thiazoline-Based Carbene-Metal-Amide Complexes Featuring Bromine Atom to Achieve High Efficiency TADF**

Žanis Sisojevs, Kaspars Traskovskis

CERAMICS

P52 **nfluence of Crystalline Phase Composition on Radiation Stability of Lithium-Containing Ceramics for Future Nuclear Fusion Reactors**

Annija Liepkalne, Laura Dace Pakalniete, Artis Kons, Līga Avotiņa, Andris Antuzevičs, Magdalena Rzepna, Artūrs Zariņš

P53 **Synthesis and Antimicrobial Evaluation of Layered Double Hydroxides for Functional Plaster Applications**

Gabriele Klydziute, Rokas Zalneravicius, Vaclovas Klimas, Denis Sokol, Aivaras Kareiva

P54 **Mechanism of Core-shell Structure Formation in Lead-Free Ferroelectric Ceramics Using the Contact Method**

Gusts Agafonovs, Marija Dunce, Eriks Birks, Maris Livins, Karlis Kundzins

P55 **Microstructure Control of Environmentally Friendly Processed $Na_{0.5}Bi_{0.5}TiO_3$ Thick Films**

Liba L. Eltermane, Marija Dunce, Eriks Birks, Gusts Agafonovs, Maris Livins

P56 **Influence of Reaction Time on Bee Pollen Hydroxyapatite Composites for Bioactive Applications**

Maab Elsheikh, Inga Grigoraviciute, Zivile Stankeviciute, Aivaras Kareiva

P57 **Influence of Iron (II) Oxide on the Formation of Monetite under Hydrothermal Conditions**

Tadas Dambrauskas, Gabriel Omar Mendez Flores, Mindaugas Matijunas, Lauryna Pudziuvelyte

POLYMER AND COMPOSITES

P58 **Comparative Analysis of in Vitro Joints Modelling Using Different Hydrogels**

Aleena Ijaz, Edvinas Krugly

P59 **Tetracycline Detection Using Molecularly Imprinted Polypyrrole on PEDOT:PSS-Modified Screen-Printed Carbon Electrodes**

Beatričė Kulikauskaitė, Domas Pirštelis, Ernestas Brazys, Vilma Ratautaitė, Antanas Zinovičius, Arūnas Ramanavičius

P60 **Utilization of Sanitary Ceramics Waste Generated during Demolition in Geopolymer Systems**

Gabija Vinikaitė-Bačinskienė, Rėda Bistrickaitė, Danutė Vaičiukynienė, Povilas Telešius

P61 **Numerical Modelling of Hierarchical Composites Fabricated by FDM and Electrospinning**

Jaymin Vrajlal Sanchaniya, Simas Rackauskas

P62 **Synthesis and Investigation of Lanthanide-Substituted Calcium Deficient Hydroxyapatite**

Justina Karciauskaite, MD Sajjatul Islam, Aivaras Kareiva, João Tedim

P63 **Optimization and Structure-Property Characterization of Dual-Modified Corn Starch for Thermoplastic Biopolymer Applications**

Muhammad Nasif, Ayodeji Amobonye, Joana Bendoraitiene, Laura Peciulyte, Remo Merijs Meri, Shu-Kai Yeh, Ramune Rutkaite

P64 **Additive Manufacturing of Flexible Deformation Sensors by Co-Printing Elastomeric Composites with Electroceramic and Graphene Fillers**

Musawir Ghani, Rolanas Daukševičius

P65 **Rheological Modeling and Torque-Based Processability Prediction for Celecoxib/PVPVA Hot-Melt Extruded Amorphous Solid Dispersions**

Paula Kaufelde, Rita Maria Soares, Oxana Brante, João F. Pinto, Konstantīns Logviss

P66 **Valorization of Berry By-Product Extract for Biosynthesis of Bacterial Cellulose**

Siddiqua Ilyas, Lina Dėnė, Simas Borkertas, Inna Pitak, Žaneta Rukuižienė

P67 **Green-Synthesized Silver Nanoparticles from Viburnum opulus By-Products for the Development of Biopolymer-Based Materials: Physicochemical Characterization and Antimicrobial Activity**

Vaidė Sakalauskienė, Aiste Balciunaitiene, Jonas Viskelis

P68 **Bio-Assisted Pretreatment of Tilia cordata (Linden) Enables Tunable Green Synthesis and Enhanced Bioactivity of Silver Nanoparticles**

Zarqa Hassan, Syeda H. Zehra, Jonas Viškelis, Aistė Balčiūnaitienė

ADVANCED ENGINEERING MATERIALS

P69 **Advancing Green Ammonia Synthesis: Novel Iron-Based Catalysts for Low-Pressure Haber-Bosch Processes**

Adriana Marinoiu

P70 **Synergistic Fe/N-Graphene Catalysts for Sustainable Ammonia Synthesis in Mild Reaction Conditions**

Adriana Marinoiu

P71 **Hydrogen-Irradiation Effects in GaN Thin Layers**

Algirdas Mekys, Šarūnas Vaitekonis, Vitalij Kovalevskij, Margarita Biveinytė, Arūnas Kadys

P72 **Effect of Laser Power on Microstructure Development of Inconel 718 Walls Fabricated by Laser Metal Deposition**

Barbora Ludrovcová, Martin Sahul, Miroslav Sahul, Marián Pavlík, Jana Ptačinová

P73 **Laser-Induced Graphene Fabrication on Kevlar Composite at the Picosecond Laser Regime**

David Bolanos, Romualdas Trusovas

P74 **Influence of WLAM Processing on Mechanical Properties of Inconel 718**

Marián Pavlík, Miroslav Sahul, Barbora Ludrovcová, Martin Sahul, Jana Ptačinová, Maroš Martinkovič

P75 **Effect of Laser Power on the Microstructure and Microhardness of Inconel 718 Superalloy Printed with Laser Metal Deposition**

Martin Sahul, Barbora Ludrovcová, Miroslav Sahul

P76 **Structural Engineering of Eco-Friendly Protective Textiles Using Bamboo and Inherent Flame-Retardant Fibers**

Muhammad Ehtisham Sarwar, Rimvydas Milašius

MATERIALS FOR ENERGY

P77 **Development and Characterization of P2-Type NMO Cathodes for Sodium-Ion Batteries**

Eline Paura, Vitalijs Lazarenko, Julija Hodakovska, Rita Leimane, Gints Kucinskis

P78 **Ionic Thermoelectric Properties of Sodium Alginate-Silica Aerogel Composites**

Anete Anmane, Rouz Barjoud, Irina Oliseveca, Jana Andzane

P79 **Hydrogen Production from Complex Aluminum Waste Streams via Alkaline Hydrolysis**

Anzelms Zukuls, Nikita Griscenko, Liga Grinberga

P80 **Matrix-Dependent Thermoelectric Response of Nanoconfined Poly(sodium 4-styrenesulfonate) Electrolytes**

Armanda Evija Kairisa, Rouz Borjoud, Ilga Lauma Leimane, Irina Oliseveca, Donats Erts, Jana Andzane

P81 **Investigation of Novel Thermoelectric Thin Films Prepared by Magnetron Sputtering**

Dejan Prokop, Joris More-Chevalier, Petr Hruška, Michal Novotný, Stanislav Cichoň, Esther de Prado2, Petr Levinský, Tomas Tamulevičius, Ursula Wdowik, Ján Lančok, Dominik Legut

P82 **BIO4EEB – BIO Insulation Materials for Enhancing the Energy Performance of Buildings: A Demonstration Case in Lithuania**

Saulius Pakalka, **Eglė Fataraitė-Urbonienė**, Vitas Mačiulis, Issakha Bah, Francesco Castellacci, Sergio Navarro García, Pablo R. Outón, Domenico Borrelli

P83 **Inert MgO Coatings for Nickel-Rich Cathode Active Materials for Li Ion Batteries**

Einars Sprugis, Gints Kučinskis

P84 **Nanofluidic Confinement within Silica-Based Network for Enhanced Heat-to-Electricity Conversion**

Ilga Lauma Leimane, Irina Oliseveca, Raimonds Poplausks, Justin D. Holmes, Donats Erts

P85 **Influence of Gold Nanoparticle Immobilization Strategies on Yeast-Based Microbial Fuel Cell Performance**

Teresė Kondrotaitė-Intė, Inga Morkvėnaitė