



CONFERENCE PROGRAMME

**17th International Conference
on Nanomaterials - Research & Application**

October 15 - 17, 2025, Orea Congress Hotel Brno, Czech Republic, EU



NANOCON



www.mericitechnikamorava.cz



www.izon.com



www.raith.com



www.nicoletcz.cz



www.pragolab.cz



www.csclean.com



www.americanelements.com



www.delong.cz



www.polymernanocentrum.cz



www.anamet.cz



www.nanosurf.com



www.vakuum-servis.cz

GENERAL CHAIRMAN

Prof. Dr. Radek ZBOŘIL Palacký University in Olomouc, CATRIN-RCPTM & VSB - Technical University Ostrava, CEET-CNT, Czech Republic, EU

PROGRAMME COMMITTEE

Prof. Dr. Radek ZBOŘIL Palacký University in Olomouc, CATRIN-RCPTM, Czech Republic, EU

M.Sc. Jiřina SHRBENÁ VÁŇOVÁ Inova Pro Ltd., Prague, Czech Republic, EU
Prof. Dr. Miroslav ČERNÍK Technical University of Liberec, Liberec, Czech Republic, EU

Prof. Dr. Anton FOJTÍK Czech Technical University in Prague, Prague, Czech Republic, EU

Prof. Dr. Michael GIERSIG Freie Universität Berlin, Germany, EU
Prof. Dr. Jiří HOMOLA Institute of Photonics and Electronics of the CAS, Prague, Czech Republic, EU

Prof. Dr. Eduard HULICIUS Institute of Physics of the CAS, Prague, Czech Republic, EU

Assoc. Prof. Dr. Martin KALBÁČ J. Heyrovsky Institute of Physical Chemistry of the CAS, Prague, Czech Republic, EU
Dr. Petr KLAPETEK Czech Metrology Institute, Brno, Czech Republic, EU

Dr. Jan MACÁK CEITEC BUT and University of Pardubice, Czech Republic, EU

Prof. Dr. Krzysztof MATYJASZEWSKI Carnegie Mellon University, Pittsburgh, U.S.A.
Prof. Dr. Paul MULVANEY University of Melbourne, Australia
Prof. Dr. Miloslav PEKAŘ Brno University of Technology, Brno, Czech Republic, EU

Prof. Dr. Seeram RAMAKRISHNA, FEng National University of Singapore (NUS), Singapore
Prof. Dr. Bohuslav REZEK Czech Technical University in Prague, Czech Republic, EU

Prof. Dr. Andrey L. ROGACH City University of Hong Kong, China
Dr. Oldřich SCHNEEWEISS Institute of Physics of Materials of the CAS, Brno, Czech Republic, EU

Dr. Michael SOLAR

Czech Technical University in Prague, Prague, Czech Republic, EU

Dr. Jan TOPINKA

Institute of Experimental Medicine of the CAS, Prague, Czech Republic, EU

Prof. Dr. Horst WELLER

University of Hamburg, Germany, EU

ORGANIZING COMMITTEE

B. Sc. Monika BAROŠOVÁ TANGER Ltd., Ostrava, Czech Republic, EU

M. Sc. Gabriela POLTORÁKOVÁ TANGER Ltd., Ostrava, Czech Republic, EU

INVITED SPEAKERS

Prof. Dr. Rainer HILLENBRAND Nanoscience research center CIC nanoGUNE in San Sebastian, Basque Country, Spain, EU

Prof. Dr. Jesús Santamaría RAMIRO University of Zaragoza & Nanoscience and Materials Institute of Aragon (INMA), Spain, EU

Prof. Dr. Peter WICK Swiss Federal Laboratories for Materials Science and Technology – Empa & ETH Zurich, Switzerland

Dr. Indrajit GHOSH VSB - Technical University of Ostrava, Czech Republic, EU

Dr. Filippo GIANNAZZO Consiglio Nazionale delle Ricerche (CNR) - Institute for Microelectronics and Microsystems of Catania, Italy, EU

Prof. Dr. Silvia GIORDANI Dublin City University, Ireland

Prof. Dr. Hanna L. KARLSSON Karolinska Institutet, Stockholm, Sweden, EU

Dr. Denis KOLTSOV BREC Solutions / BSI LBI/37, United Kingdom

Prof. RNDr. Petr SKLÁDAL, CSc. Masaryk University, Brno, Czech Republic, EU

Dr. Štěpán STEHLÍK Institute of Physics of the CAS, Prague, Czech Republic, EU

Assoc. Prof. Dr. Stanisław WACŁAWEK Technical University of Liberec, Czech Republic, EU

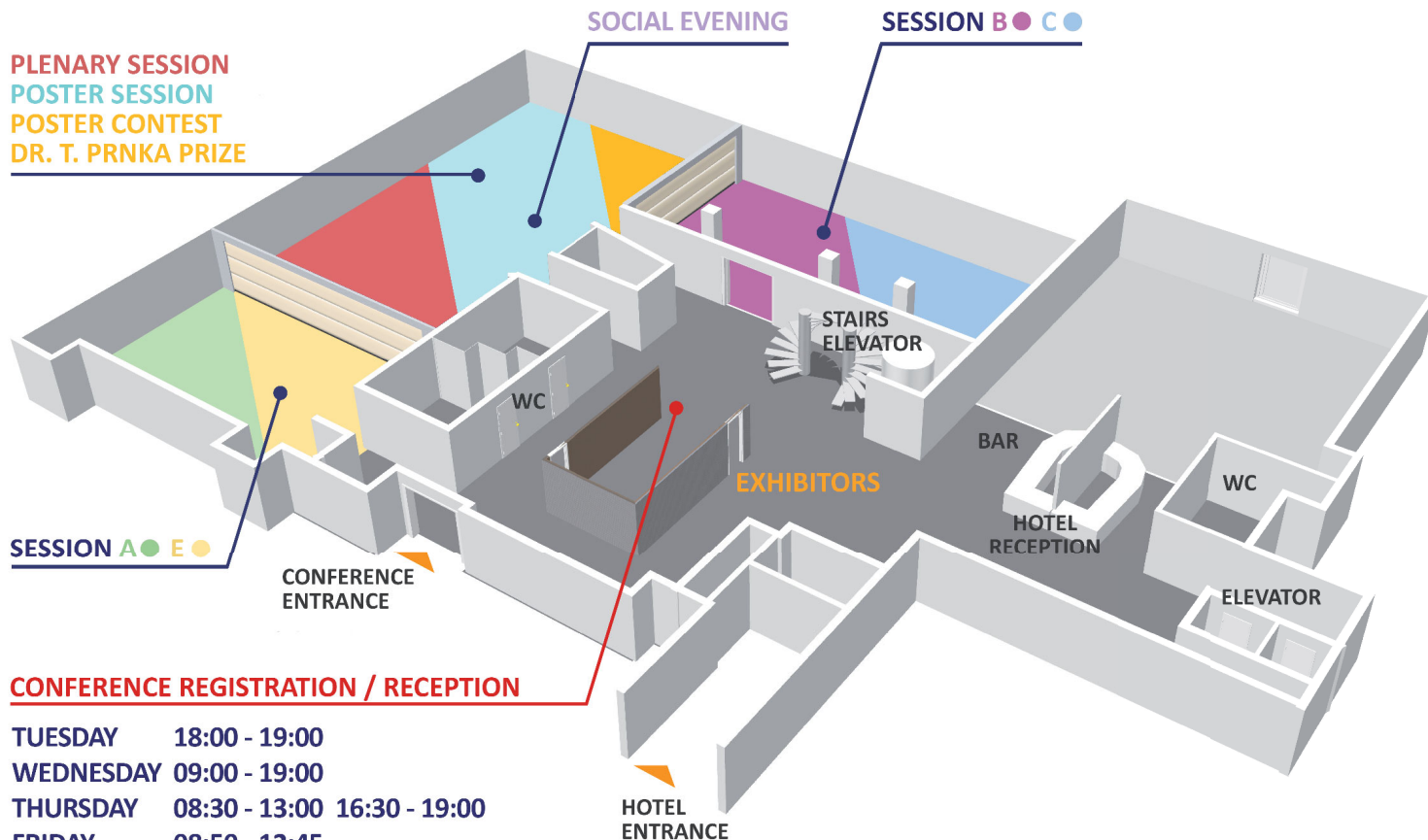
Dr. Yazhou ZHOU

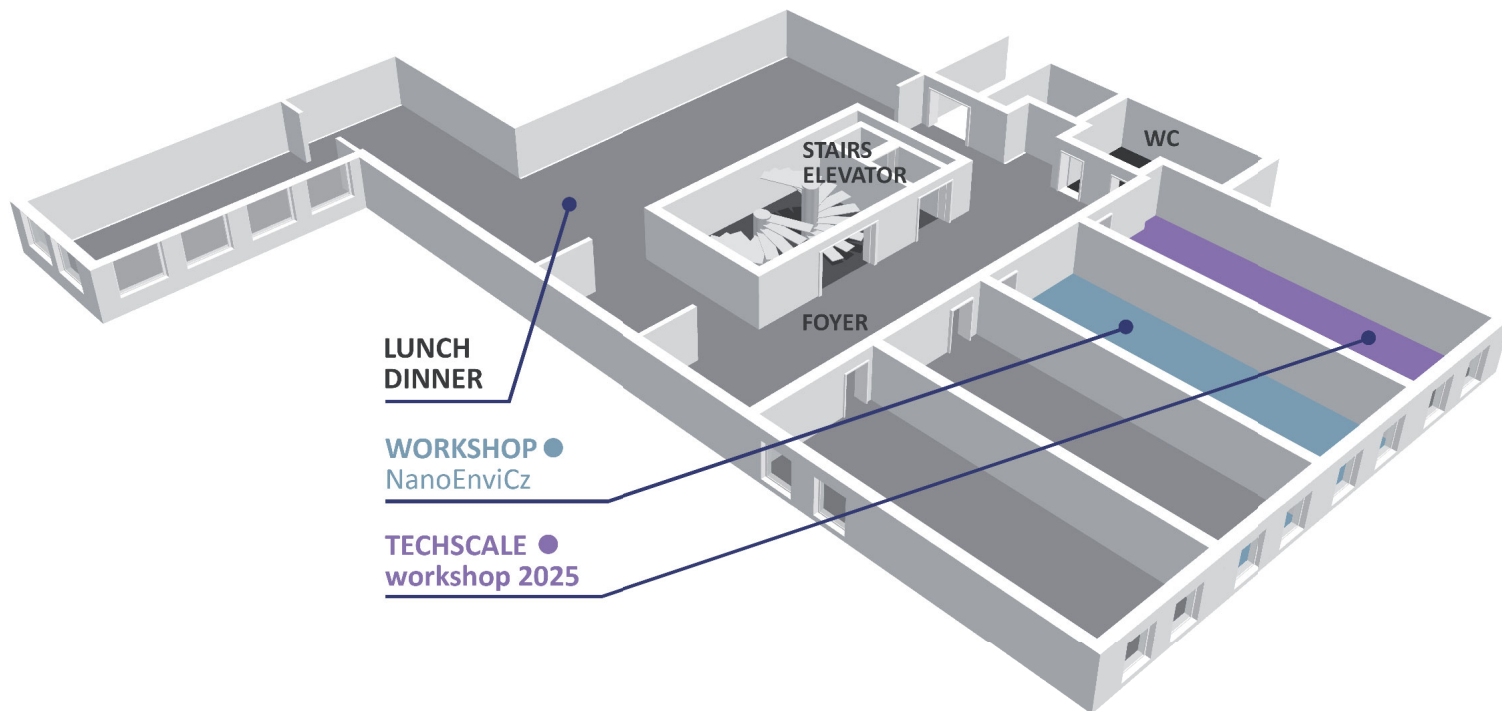
VSB - Technical University Ostrava, Czech Republic, EU

CONFERENCE SCHEDULE

Time	TUESDAY, Oct 14	WEDNESDAY, October 15	THURSDAY, October 16	FRIDAY, October 17
8:00	REGISTRATION 18:00 - 19:00	REGISTRATION 9:00 - 19:00	REGISTRATION 8:30 - 13:00, 16:30 - 19:00	REGISTRATION 8:50 - 12:45
9:00			PLENARY SESSION (9:00 - 9:45)	E (9:00 - 10:45)
10:00		CONFERENCE OPENING (10:15)	A (9:45 - 10:45)	B (9:00 - 10:45)
11:00		PLENARY SESSION (10:30 - 12:00)	COFFEE BREAK 10:45 - 11:05	COFFEE BREAK 10:45 - 11:00
12:00		LUNCH 11:30 - 13:30	E (11:05 - 13:05)	E (11:00 - 12:45)
13:00		A (13:00 - 14:45)	LUNCH 12:00 - 14:00	B (11:00 - 12:45)
14:00		C (13:00 - 14:45)	TECHSCALE workshop 2025 (First floor) (13:30 - 17:10)	CONFERENCE FINAL CEREMONY Best Lecture Award (12:50)
15:00		COFFEE BREAK 14:45 - 15:05	NanoEnvicZ workshop (First floor) (14:00 - 16:00)	LUNCH 12:00 - 14:00
16:00		A (15:05 - 16:50)	COFFEE BREAK 16:30 - 17:00	
17:00		C (15:05 - 16:50)		
18:00		COFFEE BREAK 16:50 - 17:10	POSTER SESSION (17:00 - 19:00)	
19:00		A (17:10 - 18:55)	BEST POSTER CONTEST (19:00)	
20:00		C (17:10 - 18:55)	DINNER 19:00 - 22:00	
		BREAK		
		SOCIAL EVENING - hotel restaurant 20:00 - 23:00		

FLOORPLAN - GROUND FLOOR





10:15

CONFERENCE OPENING / PLENARY SESSION

10:30 **PS1** Beyond Chemotherapy. Novel Therapeutic Nanoparticles and Ways
45' to Deliver Them to the Tumor

RAMIRO Jesús Santamaría

University of Zaragoza, INMA, Zaragoza, Spain, EU

INVITED

11:15 Innovating Low Dimensional Materials for Health Applications:
Balancing Performance and Safety

PS2
45'

WICK Peter

Empa & ETH Zurich, St. Gallen, Switzerland

INVITED

12:00 - 13:00 **LUNCH**

SESSION A

**NANOMATERIALS FOR ELECTRONIC, MAGNETIC AND OPTIC APPLICATIONS.
CARBON NANOSTRUCTURES, QUANTUM DOTS**

13:00 **A1** Single-Atom Catalysts: Unveiling Synthesis Strategies and Catalytic Potential
ZHOU Yazhou INVITED

VSb - Technical University of Ostrava, Ostrava, Czech Republic, EU

13:30 **A2** Acceptor and Donor-doped Carbon Nanotubes as Electrocatalysts
for ORR, HER and OER
SZROEDER Paweł - Kazimierz Wielki University, Bydgoszcz, Poland, EU

13:45 **A3** Pathways to Enhancing Optical and Dispersive Properties of Silicon
Quantum Dots via Thermal and Radical Hydrosilylation
VAŠÍČEK Michal - Institute of Physics of the CAS, Prague, Czech Republic, EU

14:00 **A4** Solvent Controlled Generation of Spin Active Polarons
in Fluorographene under UV Light Irradiation
LAZAR Petr
Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

14:15 **A5** Hierarchical Carbon Fiber-carbon Nanotube Reinforcement
for Tunable Rheological, Thermal, and Conductivity Properties in PA12
Additive Manufacturing Filaments
PETRÉNY Roland
Budapest University of Technology and Economics, Budapest, Hungary, EU

SESSION C

BIONANOTECHNOLOGY, NANOMATERIALS IN MEDICINE

C1 Engineering Carbon Nanoparticles for Biomedical Applications
GIORDANI Silvia INVITED
Dublin City University, Dublin, Ireland, EU

C2 Physical Principles of Crosslinking of Water-Soluble Polymers for Tissue Engineering
STRNADOVÁ Kateřina
Technical University of Liberec, Liberec, Czech Republic, EU

C3 Coating of Metalloproteins Peptides Conjugates on Different Medical
Implants to Avoid from Hospital Acquired Infections
ALI Azam - Technical University of Liberec, Liberec, Czech Republic, EU

C4 Light-Controllable Nanozyme-Based Enzyme-Mimicking Microneedle
Platform for Combating Skin Subdermal Infections and Inflammation
CHEN Haihan
EMPA, St Gallen, Switzerland

C5 Biological Properties of $\text{Ti}_3\text{C}_2\text{T}_x$ MXenes in Advancing Targeted
Photothermal Therapy for Melanoma
DEINEKA Volodymyr
University of Latvia, Riga, Latvia, EU

- 14:30 **A6** Highly Flexible Electrically Conductive Porous Electrodes Embedded With Carbon Based Fillers
FATIMA Mahvish
 Qassim University, Buraidah, Saudi Arabia

14:45 - 15:05 **COFFEE BREAK**

- 15:05 **A7** Effect of ZnO Surfaces on Charging and Photoluminescence of CsPbBr Nanocrystals
REZEK Bohuslav
 Czech Technical University in Prague, Prague, Czech Republic, EU
- 15:20 **A8** Development of Thin Films for VUV Applications
PŘIBYL Roman
 Institute of Scientific Instruments of the CAS, Brno, Czech Republic, EU
- 15:35 **A9** Plasma-Assisted Fabrication of Porous Heterogeneous Metal/metal Oxide Coatings
KYLIÁN Ondřej
 Charles University, Prague, Czech Republic, EU
- 15:50 **A10** Phase Change Materials for Nanophotonics
PŘIKRYL Jan
 University of Pardubice, CEMNAT, Pardubice, Czech Republic, EU
- 16:05 **A11** Anodic Oxides Functionalization by In-situ Self-assembly for Defect Engineered Memristors
MARDARE Andrei Ionut - Johannes Kepler University Linz, Linz, Austria, EU
- 16:20 **A12** Transition-Metal-Based Electrochromic Materials: from Complex Synthesis to Functional Thin Films
NAPIERAŁA Sergiusz - Adam Mickiewicz University, Poznań, Poland, EU
- 16:35 **A13** Advanced Protective Systems Based on Natural Fibers and Nanomaterials
ARAÚJO C. Joana
 University of Minho, Guimarães, Portugal, EU

16:50 - 17:10 **COFFEE BREAK**

- C6** Determination of Crystalline, Rigid Amorphous, and Mobile Amorphous Fractions in Electrospun Poly(ϵ -Caprolactone) Nanofibers Using Modulated Differential Scanning Calorimetry
MÉSZÁROS László
 Technical University of Liberec, Liberec, Czech Republic, EU

- C7** Biosensors: From Glucose to Nanoworld
SKLÁDAL Petr **INVITED**
 Masaryk University, Brno, Czech Republic, EU
- C8** Fluorescence Lifetime-based Carbon Dot Nanosensor for Broad-range Intracellular pH Imaging
KALYTCHUK Sergii
 Palacký University Olomouc, RCPTM, CATRIN, Olomouc, Czech Republic, EU
- C9** Crossbar Memsensor Based on Anodic TiO₂ for Dopamine Detection
ATANASOVA Elena
 Johannes Kepler University Linz, Linz, Austria, EU
- C10** Advanced Nanoparticle-Based Labels for Sensitive Detection of Biomarkers in Lateral Flow Immunoassays
KOPECKÝ Martin - Masaryk University, Brno, Czech Republic, EU
- C11** Aptamer-Based Switchable Aggregates of Gold Nanoparticles for Ultrasensitive Detection of Prostate Cancer Biomarkers
LUIN Stefano - Scuola Normale Superiore, Pisa, Italy, EU
- C12** From Atomic Design to Cellular Response: Decoding the Bioactivity of Single-Atom Nanomaterials
MALINA Tomáš - CATRIN, Palacký University / CEET, VSB - Technical University Ostrava, Olomouc, Czech Republic, EU

- 17:10 **A14** Origin Matters; Fingerprints in Nanodiamonds from Different Synthetic Methods
STEHLÍK Štěpán **INVITED**
Institute of Physics of the CAS, Prague, Czech Republic, EU
- 17:40 **A15** Optoelectronic Properties of Mg and Zn doped CsPbBr₂ On Aluminum Oxide
MADOURI Chamseddine
Czech Technical University in Prague, Prague, Czech Republic, EU
- 17:55 **A16** Electrostatic and Hydrophobic Contributions to Interactions Between Surfactants and Pure and Nitrogen-Doped Nanodiamonds
SHARMA Neha - Institute of Physics of the CAS, Prague, Czech Republic, EU
- 18:10 **A17** Electrochemical Synthesis, Characterization and Application of Matrixless Metal Nanoparticles
ADAMOWSKA Monika - University of Warsaw, Warsaw, Poland, EU
- 18:25 **A18** Anodic Titanium-Tungsten Memristors with Analog Volatile Switching
UDOVICIC Antonella
Johannes Kepler University Linz, Linz, Austria, EU
- 18:40 **A19** Block Copolymer Thin Film Laser Annealing Aided With Machine Learning Algorithm
POWAŁA Filip
University of Warsaw, Warsaw, Poland, EU

- C13** Assessing Nanoparticle Toxicity Using In Vitro Models: Quick Methods vs. Complex Approaches
KARLSSON Hanna L. **INVITED**
Karolinska Institutet, Stockholm, Sweden, EU
- C14** The Application of Antimicrobial Nanoparticles and Mesenchymal Stem Cells for Skin Wound Healing
ROSSNER Pavel
Institute of Experimental Medicine of the CAS, Prague, Czech Republic, EU
- C15** Impact of Polystyrene Nanoplastic on Autism-Like Behaviour in Zebrafish
MOINIAFSHARI Kimia
University of Padova, Padova, Italy, EU
- C16** Differential Response of Haematococcus Pluvialis to Silver Nanoparticles: Role of Inoculum Type in Astaxanthin Accumulation
CEPOI Liliana - Technical University of Moldova, Chisinau, Moldova
- C17** Green Synthesis of Gold Nanoparticles Using Aromatic Amino Acids: Physico-Chemical Characterization and Cytotoxicity Tests
PROKÚPEK Václav - Palacký University Olomouc, Olomouc, Czech Republic, EU
- C18** Quantitative Biodistribution Imaging of Gd-Labeled Nanoparticles with Preclinical MRI
VITOUŠ Jiří
Institute of Scientific Instruments of the CAS, Brno, Czech Republic, EU

20:00 **SOCIAL EVENING**
23:00 **WITH TASTING OF WINES FROM SOUTH MORAVIA WITH CIMBALOM MUSIC**
VENUE: THE HOTEL RESTAURANT



PLENARY SESSION

09:00 **PS1** Optical Near-field Nanoscopy
45' **HILLENBRAND Rainer**
 CIC nanoGUNE, San Sebastian, Spain, EU

INVITED

SESSION A

**NANOMATERIALS FOR ELECTRONIC, MAGNETIC AND OPTIC APPLICATIONS.
 CARBON NANOSTRUCTURES, QUANTUM DOTS**

09:45 **A20** On-substrate Polyazomethine Synthesis for High-performance
 Electrochromic Device
MURAS Kacper
 Adam Mickiewicz University, Poznań, Poland, EU

10:00 **A21** Polymerization Strategies for Naphthalene Diimide Electrochromic
 Systems: Electropolymerization and Photoinitiated Approaches
NOWACKI Marcin
 Adam Mickiewicz University, Poznań, Poland, EU

10:15 **A22** Optimization of Nanostructured Free-Form Optical Fibers Supporting
 Three Weakly-Coupled Spatial Modes Using Dense and Convolutional
 Neural Networks
PAŁUBA Bartosz - University of Warsaw, Warszawa, Poland, EU

10:30 **A23** Metal-Organic Framework-Based Magnetic Composite: A Multifunctional
 Platform for Cancer Therapy
PANAITE Ana Maria
 Italian Institute of Technology, Genova, Italy, EU

SESSION C

BIONANOTECHNOLOGY, NANOMATERIALS IN MEDICINE

C19 Biodegradable AC Electrospun Nanofibrous Yarns: Technology, Modifications,
 Postprocess Treatment and Properties for Surgical Sutures
KUZELOVA KOSTAKOVA Eva
 Technical University of Liberec, Liberec, Czech Republic, EU

C20 Centrifugally Spun Natural Fibers with Zinc Oxide Nanoparticles:
 A Novel Therapeutic Strategy for Acne Vulgaris
ŘÍHOVÁ Martina
 Brno University of Technology, CEITEC, Brno, Czech Republic, EU

C21 Ultrathin TiO₂ ALD Coatings Strongly Enhance Biological Response
 of Biomedical Materials
BAISHYA Kaushik
 University of Pardubice, Pardubice, Czech Republic, EU

C22 Biosynthesis of ZnO Nanoparticles Using an Invasive Plant and
 the Effect of Oxygen Vacancies on its Properties
FÉROVÁ Marta
 University of Ostrava, Ostrava, Czech Republic, EU

10:45 - 11:05 **COFFEE BREAK**

SESSION E

ADVANCED METHODS OF PREPARATION AND CHARACTERIZATION OF NANOMATERIALS

- 11:05 **E1** Electrical Scanning Probe Microscopy of 2D Materials and Their Hetero-structures with Wide-Bandgap Semiconductors for Advanced Electronics
GIANNAZZO Filippo **INVITED**
Consiglio Nazionale delle Ricerche, Catania, Italy, EU
- 11:35 **E2** Photothermal Cantilever Excitation for Non-contact Measurements of Co Nanodots on ZnO Surfaces
UKRAINTSEV Egor
Czech Technical University in Prague, Prague, Czech Republic, EU
- 11:50 **E3** Adhesion Measurements of Thin Films at the Nanoscale
MAJCHRZYCKI Łukasz
Poznan University of Technology, Poznan, Poland, EU
- 12:05 **E4** Introduction of NEW SEMPLOR SEM Analysis – Quick and Easy
HAVLÍČEK Štěpán-Adam **COMMERCIAL PRESENTATION**
Pragolab s.r.o., Prague, Czech Republic, EU
- 12:20 **E5** Investigating the Thin Film Growth of [Ni(HVanoX)2] by Microscopic and Spectroscopic Techniques
SAPRE Atharva - Institute of Physics of the CAS, Prague, Czech Republic, EU
- 12:35 **E6** Breaking Limits: Infrared Microscopy with Submicrometer Lateral Resolution
NOVOTNÝ Dušan **COMMERCIAL PRESENTATION**
Measurement Technic Moravia Ltd., Zastavka, Czech Republic, EU
- 12:50 **E7** Preparation Strategies and Multifunctional Applications of Cellulose-Based Aerogels in Energy and Environmental Fields
OZLIMAN Yasemin - Ege University, Izmir, Turkey

12:45 - 13:45 **LUNCH**

SESSION B

INDUSTRIAL AND ENVIRONMENTAL APPLICATIONS OF NANOMATERIALS

- B1** Hybrid Supramolecular Nanomaterials for Selective Water Decontamination
WACŁAWEK Stanisław **INVITED**
Technical University of Liberec, Liberec, Czech Republic, EU
- B2** Design and Development of Metal-Based Electrocatalysts for Water splitting
DESHMUKH Megha
VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU
- B3** Nitrogen Doped Graphene Acid as Photoactive Antiviral and Antibacterial Agent
REINA Giacomo
EMPA, St. Gallen, Switzerland
- B4** Unlocking the Potential of Electrospun Nanofibers: Advanced Biopolymeric Membranes for Biomedical and Environmental Applications
FERREIRA Diana - University of Minho, Guimarães, Portugal, EU
- B5** Cu nanostructures incorporated in PVDF electrospun fibers
USMAN Yasir
Palacký University, Olomouc, Czech Republic, EU
- B6** A New Approach for Hybrid Bioresorbable Hernia Meshes: Combination of 3d Printing With Chitosan Electrospun Nanofibers
SOUZA Rui P. C. L. - University of Minho, Braga, Portugal, EU
- B7** Facile and Green Synthesis of Antibacterial Nanocolloids Involving Ag Nanoparticles, Tannic Acid and Metal Ions (Fe3+, Cu2+)
MATLAK Teresa
AGH University of Krakow, Kraków, Poland, EU

13:30

17:10

TECHSCALE WORKSHOP 2025 - First floor

Co-organized by the Czech Advanced Technology and Research Institute (CATRIN) and Czech Centre for Advanced Technologies and Engineering (CATEN) - Palacky University Olomouc, Charles University in Prague, and Brno University of Technology.



13:30 **TE1** Joint welcome

ZBOŘIL Radek

Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

13:35 **TE2** Research manager of TECHSCALE - introduction word

OTYEPKA Michal

Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

13:40 **TE3** From Sheet to Site: Graphene Platforms for Single-Atom Mastery

OTYEPKA Michal

Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

14:10 **TE4** Nanorobotics: Towards Nanoarchitectonics and Single Atom Engineering for Biomedicine and Environmental Remediation

PUMERA Martin

Brno University of Technology, Brno, Czech Republic, EU

14:40 **TE5** Low-dimensional and Single-Atom Materials for Advanced Biomedical and Chemical Technologies

ZBOŘIL Radek

Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

15:10 **TE6** From Atoms to Applications: Advancing Sustainable Catalysis with 2D Zeolites

MAZUR Michal

Charles University, Prague, Czech Republic, EU

16:00 **TE7** Single Atom Engineering for Catalysis and Energy Storage

BAKANDRITSOS Aristeidis

Palacký University Olomouc, RCPTM, Olomouc, Czech Republic, EU

16:15 **TE8** Smart alloy-enabled flexible zinc-halide battery with high corrosion-resistance

SONIGARA Keval K.

Brno University of Technology, CEITEC, Brno, Czech Republic, EU

16:30 **TE9** Development of Cascade Reactions Using Synergistic Catalysis

FRANC Michael

Charles University, Prague, Czech Republic, EU

16:45 **TE10** Single-atom-based co-catalysts for photocatalytic hydrogen production

KMENT Štěpán

Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

17:00 **TE11** Closing word

OTYEPKA Michal / ZBOŘIL Radek

Palacký University Olomouc, CATRIN, Olomouc, Czech Republic, EU

15:40 - 16:00 **COFFEE BREAK**



Spolufinancováno
Evropskou unií



Technologies Beyond the Nanoscale - TECHSCALE
reg. no. CZ.02.01.01/00/22_008/0004587

14:00
16:00

WORKSHOP - FIRST FLOOR
NanoEnviCz



- 14:00 W0** Introduction of LRI NanoEnviCz
KALBÁČ Martin - J. Heyrovsky Institute of Physical Chemistry of the CAS, Prague, Czech Republic, EU
- 14:05 W1** SEM-FIB: Advanced Technique for Materials Characterization
HOŠEK Jiří
Palacký University Olomouc, RCPTM, CATRIN, Olomouc, Czech Republic, EU
- 14:20 W2** Molecular Insights Into Occupational and Non-occupational Exposure to Engineered Nanoparticles
RÖSSNEROVÁ Andrea
Institute of Experimental Medicine of the CAS, Prague, Czech Republic, EU
- 14:40 W3** Application of HPLC-DAD for Monitoring the Degradation of Organic Pollutants in Aqueous Systems
ŠŤASTNÝ Martin - Institute of Inorganic Chemistry of the CAS, Husinec-Řež, Czech Republic, EU
- 15:00 W4** Utilization of NanoEnviCz Instrumentation for Cyclodextrin-Based Nanomaterials in Micropollutant Removal
ŘEZANKA Michal
Technical University of Liberec, Liberec, Czech Republic, EU
- 15:20 W5** X-ray photoelectron spectroscopy in NanoEnviCZ facility
KORMUNDA Martin
J. E. Purkyně University, Ústí nad Labem, Czech Republic, EU
- 15:40 W6** Environmental Catalysis for a Sustainable Future: Research Highlights from the NanoEnviCz Infrastructure
SAZAMA Petr - J. Heyrovský Institute of Physical Chemistry of the CAS, Prague, Czech Republic, EU

16:30 - 17:00 **COFFEE BREAK**

17:00
19:00

POSTER SESSION

Poster presentation

19:00
19:30

BEST POSTER CONTEST

Announcement of the winner

19:00 - 22:00 **DINNER - THE HOTEL RESTAURANT**



SESSION E

ADVANCED METHODS OF PREPARATION AND CHARACTERIZATION OF NANOMATERIALS

- 09:00 **E8** Combined Theoretical and Experimental Study of Miscibility of Sn in LaNi₅
FRIÁK Martin
 1 Institute of Physics of Materials of the CAS, Brno, Czech Republic, EU
- 09:15 **E9** Study of Trion-exciton Dynamics in CVD-Grown MoS₂ Flake for Advanced Optoelectronics
AGARWAL Akanksha - Institute of Physics of the CAS, Prague, Czech Republic, EU
- 09:30 **E10** Nanoparticles: Scale-Up Purification and Single-particle Characterization
MARCHIONI Marianne **COMMERCIAL PRESENTATION**
 Izon Science Europe SAS, Lyon, France, EU
- 09:45 **E11** Exploring Spin Disorder in Ferrimagnetic Iron Oxides Using Standard DFT and Advanced Computational Methods
BERECOVÁ Valentína
 Institute of Physics of Materials of the CAS, Brno, Czech Republic, EU
- 10:00 **E12** Plasma Polymerized Polyimide Films for the Development of Electrochemical Sensors
KOSHY Abel George
 University of South Bohemia, České Budějovice, Czech Republic, EU
- 10:15 **E13** IR-SNOM Nanoscopy Combined with Confocal Raman Imaging: Theory and Examples
ŠEC Karel **COMMERCIAL PRESENTATION**
 Nicolet CZ, Prague, Czech Republic, EU
- 10:30 **E14** Raman-Active Nanocomposites with Functionalized Clay: Synthesis and Analysis
KOSTENKO Mariia
 Johannes Kepler University Linz, Linz, Austria, EU

10:45 - 11:00 **COFFEE BREAK**

SESSION B

INDUSTRIAL AND ENVIRONMENTAL APPLICATIONS OF NANOMATERIALS

- B8** Photoredox Catalysis with One or Two Photons & an Electron Transfer
GHOSH Indrajit **INVITED**
 VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU
- B9** Effect of Size and Shape of Palladium Nanoparticles on Electrocatalytic Hydrogen Evolution Reaction
SALDAN Ivan - CEITEC, Brno University of Technology, Brno, Czech Republic, EU
- B10** Nickel-Catalyzed Reductive Hydrolysis of Nitriles to Alcohols
GOYAL Vishakha
 VSB - Technical University of Ostrava, CEET, Ostrava, Czech Republic, EU
- B11** Iron Single-Atom Catalyst on Nitrogen-Doped Graphene Acid: Unlocking a Green Route from HMF to DFF
ADVANI Jacky
 VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU
- B12** Catalytic (de)hydrogenation Reactions: Catalyst Design, Scope and Mechanism
GARG Nidhi
 VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU
- B13** Exploring PCM-Filled Core-Sheath Fibers for Winter Clothing and Optimizing their Mass Percentage for Thermal Regulation
ARUMUGAM Veerakumar
 Nanyang Technological University, Singapore, Singapore

- 11:00 **E15** Single-Atom Engineering 1D Nanoreactor for Electrochemical Hydrogen Evolution
SADA Venkateswarlu
VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU
- 11:15 **E16** Structure Compatibility Calculation: Computational Determination of Preferred Out-of-Plane and In-Plane Orientation for Two-Phase Crystalline System
MOLEK Jonáš
VSB - Technical University of Ostrava, Ostrava, Czech Republic, EU
- 11:30 **E17** Modern Approach to Study Suspensions for the Creation of Porous Zirconia Nanoceramics
SOKOLA Patrik - Brno University of Technology, Brno, Czech Republic, EU
- 11:45 **E18** Finite Difference Time-Domain Investigation of the Plasmonic Effect in Spion-Decorated Gold Nanorods
OPIŁA Gabriela - AGH University of Krakow, Cracow, Poland, EU
- 12:00 **E19** Interaction Between Perovskite CsPbBr₃ and ZnO Surfaces (Non-Polar) Studied by DFT
ABBAS Ghulam - Czech Technical University in Prague, Prague, Czech Republic, EU
- 12:15 **E20** The Influence of Temperature, Velocity and Load on Nanoscale Friction
WEISS Marek
Poznan University of Technology, Poznan, Poland, EU
- 12:30 **E21** The Influence of Nanoplastics Surface Charge on the Formation of Protein Corona and the Subsequent Sorption of Pb²⁺ and Cd²⁺ Ions
SADIQ Aqsa - University of Padova, Padova, Italy, EU

- 11:00 **B14** Commercialising Advanced Materials - Lessons Learned on Commercialising Nanomaterials
KOLTSOV Denis **INVITED**
BREC Solutions / BSI LBI/37, Lancaster, United Kingdom
- 11:30 **B15** Barriers in Industrial Application of Nanotechnologies at Firm Level
ŽENKA Jan
University of Ostrava, Ostrava, Czech Republic, EU
- 11:45 **B16** Thermal and Rheological Characterisation of PLA Composites Containing Lignocellulosic Additives
KRACALIK Milan - Johannes Kepler University Linz, Institute of Polymer Science, Linz, Austria, EU
- 12:00 **B17** Promising Properties of CsPbI₃ QDs Photovoltaics
KHAN Jahangeer
Institute of Physics of the CAS, Prague, Czech Republic, EU
- 12:15 **B18** Conducting Metal Organic Frameworks Structures as an Anode Materials for Potassium Ion Batteries
SHRIVASTAV Vishal
Palacký University Olomouc, RCPTM, CATRIN, Olomouc, Czech Republic, EU
- 12:30 **B19** Interfacial Engineering of In-situ Grown 2D Layered Double Hydroxide on Functionalized Graphene for High-Performance Supercapacitor
KHANDELWAL Mahima
Palacký University Olomouc, RCPTM, CATRIN, Olomouc, Czech Republic, EU

12:50 **ANNOUNCEMENT OF THE WINNER OF THE DR. TASILO PRNKA PRIZE FOR AUTHORS UNDER 33 YEARS OF AGE &**
13:00 **OFFICIAL CLOSING OF THE CONFERENCE NANOCON 2025**

12:30 - 14:00 **LUNCH**



www.mericitechnikamorava.cz



www.izon.com

RAITH

www.raith.com



www.nicoletcz.cz



www.pragolab.cz

