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# SLOVAKIA

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A RESEARCH DESTINATION FOR MSCA & ERA FELLOWS





## Research in Slovakia

The public R&D infrastructure in Slovakia consists of a wide network of institutes of the Slovak Academy of Sciences ([SAS](#)) and a vibrant academic community of [18 universities](#), located all around the country. Private sector encompasses numerous innovation leaders, such as ESET or Innovatrics. Slovak research institutions are integrated in numerous international projects under Horizon Europe, COST and EUREKA programmes

The entry of Slovakia to the EU almost two decades ago led to a giant leap in modernisation of existing and building new research infrastructure, including over 67 centres of excellence and 13 university science & technology parks. The Slovak research and innovative ecosystem has never been so diverse and offered so many options as it does now. Selected science parks include the University Science Park of [STU](#) with a focus on industrial biotechnology, ICT, electrical, chemical & civil engineering; [Comenius University Science Park](#) specialised in biotechnology and biomedicine; [TECHNICOM](#) with a focus on ICT, electrical, mechanical, civil & environmental engineering; [CETRA](#) and the University Science Park in Žilina centred around transport research and progressive materials. The innovation ecosystem including private sector actors can be explored via [Innovation Map Slovakia](#).

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## Hosting offers for MSCA Postdoctoral Fellowship 2021

<b>Field: Civil Engineering</b>		
Slovak University of Technology in Bratislava: Faculty of Civil Engineering	Organization type: University Website: <a href="http://www.svf.stuba.sk">www.svf.stuba.sk</a>  *for position 3: <a href="https://www.svf.stuba.sk/kmif">https://www.svf.stuba.sk/kmif</a>	Contact: Position 1: <a href="mailto:roman.rabenseifer@stuba.sk">roman.rabenseifer@stuba.sk</a> Position 2: <a href="mailto:martin.simko@stuba.sk">martin.simko@stuba.sk</a> Position 3: <a href="mailto:igor.medved@stuba.sk">igor.medved@stuba.sk</a>
<p><b>Position 1 - Department of Building Construction:</b> Computer simulations of buildings significantly contribute to the understanding of their future performance, help in optimizing the design and thus the energy efficiency of their operations. They can also contribute to the prediction of energy, heat and water consumption in the urban scale, e.g. in case of a sudden change of weather conditions or planned building interventions. The aim of this work is to develop and demonstrate the methods for using the computer simulations in the urban scale by building models characteristic for the settlement, created on the basis of available data on the existing buildings, and using modern statistical methods.</p> <p><b>Position 2 - Department of Building Services:</b> The position is focused on radiant systems</p> <p><b>Position 3 – Climate-adaptive mechanisms of building latent thermal energy storage</b> (Department of Materials Engineering and Physics): The Department of Materials Engineering and Physics offers postdoc position within the Horizon Europe Action project. The aim of the postdoc is work in the current development of modern building envelope systems with the application of advanced materials that can passively absorb/store and subsequently release thermal energy obtained directly from solar radiation. In addition to materials based on conventional principles of heat accumulation, the research will be focused on materials with high latent heat capacity which can absorb large amount of heat energy in a narrow specific temperature range where they exhibit a phase change. In these materials, their thermophysical and optical properties change in dependence on the boundary conditions (incident solar radiation, outdoor air temperature, etc.) and at the same time other specific physical phenomena can occur (hysteresis, phase segregation, subcooling, etc.). The transfer and accumulation of thermal energy in the structure of phase change materials (PCMs) is nonlinear, depending on the position of a moving boundary layer (the interface between phases). Currently, there are also PCMs that can change their optical properties and become totally transparent after completing their phase change. The transmittance of the solar radiation spectrum by a PCM is also nonlinear. Their direct integration into a building envelope is one of the current research challenges in terms of predicting thermal and optical efficiency due to the dynamic changes of their properties by non-stationary boundary conditions that are accompanied by complex transport mechanisms. By creating adequate calculation procedures and experimental techniques, it is possible to provide reliable physical models for predicting the performance of materials responsive to physical stimuli and to support their more significant application in building components and building envelope systems.</p>		
Required documents: for Position 1 & 2 only CV & Research proposal;		

for Position 3: CV, transcripts and diplomas for bachelor's-, master's- and PhD degrees, list of academic works - published or unpublished - that you would like to be considered in the assessment, Research plan or project proposal.

Field: **Civil Engineering**

Technical University of Kosice: Centre of Science and Innovation Technologies	Organization type: University Website: <a href="http://www.svf.tuke.sk">www.svf.tuke.sk</a>	Contact: <a href="mailto:martina.zelenakova@tuke.sk">martina.zelenakova@tuke.sk</a>
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We offer positions in civil engineering devoted to building and engineering constructions, architecture, technologies, economy and management in civil engineering, water structures and management

Required documents: general expression of interest

Field: **Study of materials with high degree of structural disorder using novel X-ray techniques**

Slovak Academy of Sciences: Institute of Experimental Physics	Organization type: Public Research Institution Website: <a href="https://wwwnew.saske.sk/uef/en/">https://wwwnew.saske.sk/uef/en/</a>	Contact: <a href="mailto:jozef.bednarcik@upjs.sk">jozef.bednarcik@upjs.sk</a>
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Nanomaterials exploit physical phenomena and mechanisms that cannot be derived by simply scaling down the associated bulk structures and bulk phenomena. It is the exploitation of emerging nanoscale interactions which underpins all nanomaterials design. In the frame of proposed research several types of nanomaterials prepared by chemical and/or physical methods will be investigated. A fleet of sophisticated experimental magnetic and structural methods will be used to study relevant aspects of nanomaterials over a broad spectrum of length and timescales. Special emphasis will be placed on understanding of correlations between magnetic properties and their atomic structure. Among standard experimental techniques used for nanomaterials characterization, novel X-ray scattering methods utilizing synchrotron radiation, such as pair distribution function, small angle X-ray scattering, X-ray absorption and X-ray photon correlation spectroscopy, will be used.

Required documents: CV, motivation letter, recommendation letter (from PhD supervisor or head/director of the group/institute where active before application)

Field: **Electronics and Photonics**

Slovak University of Technology in Bratislava: Faculty of electrical engineering and information technology	Organization type: University Website: <a href="http://www.orglabs.sk">www.orglabs.sk</a> <a href="http://www.fei.stuba.sk">www.fei.stuba.sk</a>	Contact: <a href="mailto:martin.weis@stuba.sk">martin.weis@stuba.sk</a>
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Clean rooms with fabrication technologies are available for the applicant. The laboratory of clean rooms is equipped by the standard as well as novel deposition technologies (vacuum evaporation, material inkjet printing, etc), patterning technologies (UV lithography), and electrical measurement techniques. Morphology investigation techniques (AFM, SEM) are also available.

Required documents: CV

Field: <b>Nuclear material science and spectroscopic techniques</b> (PAS, SEM, AFM, MS, ...)		
Slovak University of Technology in Bratislava: Institute of nuclear and physical engineering	Organization type: University Website: <a href="http://www.ujfi.fei.stuba.sk">www.ujfi.fei.stuba.sk</a>	Contact: <a href="mailto:vladimir.slugen@stuba.sk">vladimir.slugen@stuba.sk</a>
At least 12 months research fellowship on the post-doc level focused on scientific activities connected to application spectroscopic methods as positron annihilation spectroscopy, Moessbauer spectroscopy, Atomic force microscopy, nanoindentation, Barkausen noises measurements, focused on the identification of microstructural changes of thermal, radiation or chemical treated materials foreseen for application in advanced nuclear facilities or in view on nuclear power plants lifetime prolongation.		
Required documents: CV, PhD. theses, motivation letter, references of scientific supervisors, list of publications Deadline: 1.9.2021		

Field: <b>Physical Chemistry</b>		
Pavol Jozef Šafárik University in Košice: Department of Physical Chemistry	Organization type: University Website: <a href="http://www.upjs.sk/en/faculty-of-science">www.upjs.sk/en/faculty-of-science</a> ; <a href="https://physicalchemistry.science.upjs.sk/">https://physicalchemistry.science.upjs.sk/</a>	Contact: <a href="mailto:renata.orinakova@upjs.sk">renata.orinakova@upjs.sk</a>
Research at the Department of Physical Chemistry at P.J.Šafárik University in Košice is focused on the usage of modern electrochemical methods for material study and characterization. Research is divided into several categories, of which biomaterial research and sensor research are among the most important. The team at the department has many years of experience in the development and study of biodegradable metals based on iron and zinc and is currently working on the biological functionalization of metal surfaces. The sensor team is working on the development of new, fast and accurate sensors for the detection of biological molecules such as glucose, insulin, and also a SARS-CoV-2 recently. <b>Position 1 - Biodegradable materials with specific biological functionality</b> <b>Position 2 - Electrochemical sensor for diagnosis of civilization diseases and viruses</b>		
Required documents: general expression of interest		

Field: <b>Catalytic syntheses of axially and planarly chiral compounds for chiroptic and materials applications</b>		
Comenius University in Bratislava, Laboratory for Asymmetric Catalysis and Green Chemistry	Organization type: University Website: <a href="http://www.radovansebesta.com">www.radovansebesta.com</a>	Contact: <a href="mailto:radovan.sebesta@uniba.sk">radovan.sebesta@uniba.sk</a>
Postdoctoral position - research of new catalytic methodologies for synthesis of compounds possessing axial or planar chirality with unusual substitution patterns. Research work with high level of independence under the guidance of the PI. Planning, conducting and analysing the results of experiments within the research project. Preparing the data for publication in peer-reviewed journals. Candidate should have a strong background in organic synthesis, compound purification and characterization with spectroscopic and analytical methods. Experience in chirality and asymmetric catalysis is advantageous.		

Required documents: Required documents: CV, list of peer-reviewed publications, two independent recommendations letters.

Field: **Geotechnics**

Slovak Academy of Sciences,  
Institute of Geotechnics

Organization type: Public  
Research Institution  
Website: [ugt.saske.sk](http://ugt.saske.sk)

Contact:  
[vaclavik@saske.sk](mailto:vaclavik@saske.sk)

The Institute of Geotechnics offers the support for MSCA individual fellowships in following areas:

- ✓ Rock cutting and drilling, TBM tunnelling,
- ✓ Mineral processing by physical, chemical and biotechnological methods,
- ✓ Mechano-synthesis and mechanochemical activation of minerals and materials,
- ✓ (Nano)materials development for environmental applications,
- ✓ Mineral and environmental biotechnologies and nanotechnologies
- ✓ Remediation and recovery of mining and industrial areas,
- ✓ Water and soil clean-up,
- ✓ Industrial waste treatment.

Required documents: general expression of interest

Field: **Research of functional and surfaced functionalized glass**

Alexander Dubček University  
of Trenčín, Centre for  
Functional and Surface  
Functionalized Glass

Organization type: University  
Website:  
[www.funglass.eu](http://www.funglass.eu)

Contact:  
[andrea.chrastinova@tnuni.sk](mailto:andrea.chrastinova@tnuni.sk)

Centre for Functional and Surface Functionalized Glass (FunGlass) is a team on a mission to become an internationally recognized hub for cutting edge research into innovative glass-based materials, composites and coatings, with a proven ability to contribute to sustainable economic development and serve as a model of research excellence for material science institutions in the Visegrad Four region.

Our key research areas include

- Corrosion, corrosion protection
- Biomaterials
- Measurement and modeling
- Functional glass/glass-ceramics /ceramics
- Upcycling of inorganic/glass waste
- Structural materials
- Coatings

The Centre is seeking to host a motivated postdoctoral researcher interested in applying for the MSCA Postdoctoral Fellowship 2021 call with a project that has strong interdisciplinary and/or inter-sectoral dimension. Selected candidates will be invited for a short-term stay in order to prepare a project that adequately exploit capacities of the Centre in combination with access to know-how and research infrastructure within the consortium of advanced partners of the Centre (Department of Industrial Engineering at University of Padova, Institute of Biomaterials at FAU Erlangen-Nürnberg, Institute of Ceramic and Glass at Spanish National Research Centre in Madrid and Otto Schott Institute of Materials Research at FSU Jena).

<p>At the deadline for the submission of the proposals (12/10/2021), researchers should:</p> <ul style="list-style-type: none"> <li>• Possess a PhD degree in a natural science discipline (not more than 8 years ago);</li> <li>• Not have resided or carried out their main activities in Slovakia for more than 12 months in the 3 years immediately prior to the above-mentioned deadline;</li> <li>• Have a good publication record.</li> </ul>
<p>Required documents: Please check that you fulfil the eligibility criteria and then send an expression of interest to <a href="mailto:andrea.chrastinova@tnuni.sk">andrea.chrastinova@tnuni.sk</a> (email subject "MSCA-PF-2021") by July 5th and provide the following information: CV (max. 3 pages), List of publications, Motivation letter (1 page)</p>

<p>Field: <b>Physics, Mathematics and Technics</b></p>		
<p>University of Presov: Department of Physics, Mathematics and Technics</p>	<p>Organization type: University Website: <a href="https://www.unipo.sk/fhpbv">https://www.unipo.sk/fhpbv</a></p>	<p>Contact: <a href="mailto:marian.reiffers@unipo.sk">marian.reiffers@unipo.sk</a></p>
<p>The hosting site offers commercial devices such as DYNACOOOL, VERSALAB and DSC calorimeter with the following measurement possibilities:</p> <ul style="list-style-type: none"> <li>✓ magnetization and susceptibility measurement using of VSM from 2 - 400K (50-1000K), magnetic field up to 9T (3T), also under pressure up to 3 kbar</li> <li>✓ electrical resistivity measurement (2-wire, 4-wire) from 2-400K, magnetic field up to 9T (3T) under pressure up to 3 kbar (in 50 - 400 K)</li> <li>✓ heat capacity measurement from 2-400K , magnetic field up to 9T (3T)</li> <li>✓ simultaneous measurements of thermal conductivity, thermoelectric power (Seebeck coefficient), electrical resistivity and figure of merit from 2-400K, magnetic field up to 9T (3T)</li> </ul>		
<p>Required documents: CV, list of publications</p>		

<p>Field: <b>Intelligent technology, artificial intelligence and other areas of computer science</b></p>		
<p>Kempelen Institute of Intelligent Technologies</p>	<p>Organization type: Research Laboratory Website: <a href="https://kinit.sk">https://kinit.sk</a></p>	<p>Contact: <a href="mailto:michal.kompan@kinit.sk">michal.kompan@kinit.sk</a></p>
<p>Kempelen Institute of Intelligent Technologies (KInIT) is an independent, non-profit research institute dedicated to intelligent technology. We bring together and nurture experts in artificial intelligence and other areas of computer science.</p> <p><b>Position 1: Deep Learning for Natural Language Processing</b> Natural language processing (NLP) ranks among the most prospective subfields of artificial intelligence with great potential for innovative applications affecting everyday life.</p> <p>Recent advances in neural networks and machine learning allowed to push efficiency and scope of natural language understanding and generation forward. Yet, there remain many research challenges related to particular subtasks, application domains, and languages. Further research and various resulting phenomena exploration are necessary. Special attention is drawn by the issues of interpretability and transparency of NLP models or by novel paradigms of learning addressing the problem of low-resource languages.</p> <p>Particularly interesting challenges include, but are not limited to:</p>		



- ✓ Transfer/multilingual learning
- ✓ Interpretability and transparency for NLP
- ✓ Domain-specific information extraction, text classification
- ✓ Low-resource language processing

Join our NLP team at KInIT to collaborate on prospective research projects.

<https://kinit.sk/research/natural-language-processing/>

### **Position 2: Web and User Data Processing**

Machine learning is in the centre of research of artificial intelligence. Many researchers worldwide are dealing with the topics related to machine learning, both in academia and industry. This very dynamic field is characterized by the fast transfer of solutions into practical use.

At KInIT, we explore these topics in several application domains: misinformation (we are part of the European Digital Media Observatory through CEDMO project) and recommender systems (industry cooperation mostly in e-commerce). Interesting research challenges are contained within (but are not limited to) these topics:

General Machine Learning (e.g., active learning, clustering, online learning, ranking, reinforcement learning, semi-supervised learning, time series analysis, unsupervised learning)

Deep Learning (e.g., architectures, generative models, deep reinforcement learning)

Learning Theory (e.g., bandits, game theory, statistical learning theory)

Optimization (e.g., convex and non-convex optimization, matrix/tensor methods, sparsity)

Trustworthy Machine Learning (e.g., accountability, causality, fairness, privacy, robustness)

<https://kinit.sk/research/web-user-data-processing/>

### **Position 3: Data Analytics for Green Energy**

Energy is the backbone of the economy, therefore it is in the centre of our attention. The integration of distributed energy sources into the smart grid has changed its architecture so that the centrally managed network gradually becomes a decentralized system, consisting of several autonomous components, called microgrids. They can be defined as small communities of prosumers (electricity consumers with a local source of supply) that are usually attached to a centralized national grid but can also function independently. High-capacity batteries and electromobility also come into play.

Due to the deployment of smart meters, huge amounts of data are generated continuously. The development of data analysis methods is therefore an important part of IT research and offers us an excellent way of processing the collected data. The state-of-the-art methods are mostly based on artificial intelligence and machine learning.

The current research is focused on, but not limited to:

- ✓ Optimization problems in the microgrids
- ✓ New ways of energy sharing among prosumers
- ✓ Modeling of the load uncertainty in grid
- ✓ Non-intrusive load monitoring

However, the subject of our interest in this topic at KInIT is the data analysis in a broader context - considering tasks of prediction, clustering, classification or detection of anomalies in different domains.

Supervisor: Viera Rozinajová, <https://kinit.sk/member/viera-rozinajova/>

<https://kinit.sk/research/data-analytics-for-green-energy/>

Required documents: CV including contact details

Field: <b>Robotics</b>		
Slovak University of Technology, Institute of Robotics and Cybernetics	Organization type: University Website: <a href="http://nacero.sk/language/en/">http://nacero.sk/language/en/</a>	Contact: <a href="mailto:frantisek.duchon@stuba.sk">frantisek.duchon@stuba.sk</a>
We would like to welcome an international expert in one of the main domains, industrial robotics (including collaborative applications) or mobile robotics (including UAV), to our team.		
Required documents: CV & references		

Field: <b>Applied Informatics</b>		
Slovak University of Technology in Bratislava: Faculty of Informatics and Information Technologies	Organization type: University Website: <a href="http://www.fiit.stuba.sk/en.html?page_id=749">www.fiit.stuba.sk/en.html?page_id=749</a>	Contact: <a href="mailto:bordoy@stuba.sk">bordoy@stuba.sk</a> ; <a href="mailto:michal.ries@stuba.sk">michal.ries@stuba.sk</a> ; <a href="mailto:andrea.lengyelova@stuba.sk">andrea.lengyelova@stuba.sk</a>
<p>The host institution (FIIT STU) offers an interdisciplinary research environment in applied informatics field, offering close cooperation with faculty business partners as well. Fellow will have an opportunity to work with different research groups across the faculty and strengthen her/his experimental techniques in fields of for example: deep neural networks interpretations and protection, new methods in development of cloud services, block-chain service architecture, machine learning, large data processing, organizational patterns in software development, embedded systems safety, cyber-security etc.... FIIT STU is one of seven faculties at The Slovak University of Technology, which is one of the largest and the most significant technically focused university in Slovakia. FIIT STU offers an inspiring and friendly working environment with a high degree of independence allowing the fellow to sharpen and strengthen his/her individual research profile. The fellow will have a full access to the faculty laboratories as well as to seminars in various scientific disciplines, even in neighboring universities based on her/his needs. Also, the fellow will be expected to mentor and supervise number of students and participate in international conferences across the EU.</p>		
Required documents: general expression of interest		

Field: <b>Automotive Innovation Lab</b>		
Slovak University of Technology in Bratislava: Faculty of Informatics and Information Technologies	Organization type: University Website: <a href="https://fiit.stuba.sk">https://fiit.stuba.sk</a>	Contact: <a href="mailto:marek.galinski@stuba.sk">marek.galinski@stuba.sk</a>
<p>Automotive Innovation Lab is a new formed research group that addresses challenges in smart mobility, connected vehicles and intelligent transportation systems. Our research area covers autonomous driving and connected vehicles environment, more specifically research on advanced safety using intelligent ADAS systems, heterogeneous networks management using SDN approach, time sensitive networks and wireless communications.</p>		
Required documents: general expression of interest		

Field: <b>Management science and informatics</b>		
University of Žilina, Faculty of Management Science and Informatics	Organization type: University Website: <a href="http://www.fri.uniza.sk">www.fri.uniza.sk</a>	Contact: See per position
<p>The Faculty of Management Science and Informatics of the University of Žilina is a technical faculty with a focus on information and communication technologies and wide range of their application in interdisciplinary oriented research projects.</p> <p>Our research strengths are focused in these strategic profile lines:</p> <ul style="list-style-type: none"> <li>✓ Decision support systems for extensive service systems (e.g. transport systems)</li> <li>✓ Modelling and simulation for biomedical applications</li> <li>✓ Computer engineering – automation – IoT</li> <li>✓ High performance computing</li> <li>✓ Low energy computing</li> <li>✓ Database management systems</li> <li>✓ Reliability Analysis</li> <li>✓ Innovative Management</li> <li>✓ Economics and Business</li> </ul> <p>Contacts per area:</p> <p>Information systems for railway traffic planning, controlling and data management: <a href="mailto:hynek.bachraty@fri.uniza.sk">hynek.bachraty@fri.uniza.sk</a></p> <p>Optimal and reliable service system design: <a href="mailto:jaroslav.janacek@fri.uniza.sk">jaroslav.janacek@fri.uniza.sk</a></p> <p>Electric Mobility Data Analysis &amp; Infrastructure Planning: <a href="mailto:lubos.buzna@fri.uniza.sk">lubos.buzna@fri.uniza.sk</a></p> <p>Agent-based simulation of transportation terminals: <a href="mailto:norbert.adamko@fri.uniza.sk">norbert.adamko@fri.uniza.sk</a></p> <p>Computer Vision Deep Learning, Artificial Intelligence: <a href="mailto:peter.tarabek@fri.uniza.sk">peter.tarabek@fri.uniza.sk</a></p> <p>Cell-in-fluid Research Group: <a href="mailto:ivan.cimrak@fri.uniza.sk">ivan.cimrak@fri.uniza.sk</a></p> <p>Memristive Implementation of Fuzzy Logic for Cognitive Computing: <a href="mailto:martin.klimo@fri.uniza.sk">martin.klimo@fri.uniza.sk</a></p> <p>Mobile robots and their integration into the IoT world: <a href="mailto:peter.sevcik@fri.uniza.sk">peter.sevcik@fri.uniza.sk</a></p> <p>Reliability Analysis of complex Multi-State System: <a href="mailto:elena.zaitseva@fri.uniza.sk">elena.zaitseva@fri.uniza.sk</a></p> <p>Complex database management system: <a href="mailto:karol.matiasko@fri.uniza.sk">karol.matiasko@fri.uniza.sk</a></p> <p>Innovative Management, Economics and Business: <a href="mailto:research@fri.uniza.sk">research@fri.uniza.sk</a></p>		
Required documents: general expression of interest		

Field: <b>Molecular Biology</b>		
Comenius University in Bratislava, Faculty of Natural Sciences	Organization type: University Website: <a href="https://fns.uniba.sk/kmb/">https://fns.uniba.sk/kmb/</a>	Contact: <a href="mailto:stanislav.stuchlik@uniba.sk">stanislav.stuchlik@uniba.sk</a>
<p>Research at Dept Mol Biol (Genomics and Proteomics labs) is focused to Biomed and Molecular Biotech research:</p> <ul style="list-style-type: none"> <li>• Genomics studies – Study of gene expression regulation in prokaryotes, identification of microorganisms, phages and viruses based on DNA analysis methods, DNA based analysis of human genome focused to severe genetic diseases in Slovak population (cystic fibrosis, hemophilia A, phenylketonury, alkaptonury, spinal muscle atrophy, Duchenne and Becker muscle atrophy, Huntington chorea, non-syndrome deafness, Wilson disease, etc.), identification and diagnostics of SARS2-Cov2 genome (Dr. Szemes lab)</li> <li>• Proteomics studies - construction of novel cloning and expression systems for production and</li> </ul>		

purification of recombinant proteins/biologically active agents/recombinant enzymes for pharmaceutical, biomed and food biotech.

Required documents: Certificate of PhD degree

Field: **Development of strategic therapeutics against selected vector-borne neuroinfections**

University of Veterinary Medicine and Pharmacy, Laboratory of Biomedical Microbiology and Immunology

Organization type: University  
Website:  
<http://lbmi.uvlf.sk/>

Contact:  
[kulkarni.adm@gmail.com](mailto:kulkarni.adm@gmail.com)

Post-doctoral position is available at The Laboratory of Biomedical Microbiology and Immunology (LBMI), University of Veterinary medicine and pharmacy in Kosice, Slovakia. The position is linked to the project - "Development of strategic therapeutics against selected vector-borne neuroinfections".

The goals of post-doctoral research will focus on (1) Enhancing the existing insights on molecular crosstalk occurring between neuroinvasive pathogens (eg. Neisseria meningitidis, Borrelia burgdorferi, West Nile virus, and Tick-borne encephalitis virus) and cells of neurovascular unit forming the human blood-brain barrier. (2) Development of nanotechnology-based therapeutics against neuroinvasive pathogens.

The project aims to foster nanotherapeutics engaging Mass spectrometry based mapping of ligand-receptor interactions, RNA sequencing, synthesis of single-domain antibodies (nanobodies), anti-microbial peptides, and elucidating the host-pathogen interactions on in vitro 3D blood-brain organoids.

Desirable profile

We look forward to highly motivated and ambitious candidates who wish to flourish their research carrier in neurosciences. You should have

1. PhD in biology, biomedical sciences, biochemistry, neuroscience or related disciplines.
2. Strong knowledge (theoretical and working expertise) on microbiology, cell culture, proteomics, and molecular biology techniques
3. Strong scientific communication skills: oral and written

What we offer

Researchers will be trained on cutting-edge technologies within the scientifically stimulating working environment at LBMI. Opportunity to participate in the procurement of EU projects and disseminate their research in various international conferences.

Required documents: Please send your curriculum vitae, list of publications, and a reference letter with contact details in a single email before 30.07.2021

Field: **Biological remains as proxies for reconstruction of the environmental changes in alpine lakes**

Matej Bel University, Faculty of Natural Sciences

Organization type: University  
Website:  
[www.fpv.umb.sk](http://www.fpv.umb.sk)

Contact:  
[peter.bitusik@umb.sk](mailto:peter.bitusik@umb.sk)

METHODS AND OUTPUTS:

- 1) Drilling and analysis of lake sediments situated at high altitudes in Slovakia/ Poland/Ukraine

- 2) Determination of the fossil remains (diatoms/ chironomids/ pollen, cladocerans) across the Holocene with special attention to the major climate events  
 3) Timing and reconstruction of the paleoecological changes in Central/Eastern Europe.

SCIENTIFIC OBJECTIVES: Effect and timing of short but severe events, such as the 8.2 ky cooling, the 4.2 ky aridification event or the Little Ice Age (LIA) are well mapped globally but very poorly known in the Central European region. The climatic phenomenon of LIA lasting from the 14th to 19th century influencing a modern European culture is identified in Central Europe, however, there is very little information about the magnitude, variations and timing of it in Slovakia. Thus, the future postdoc will study the timing and manifestation of these rapid climatic changes by analyzing high-resolution lake sediment records in mountain areas in Slovakia, Poland and Ukraine.

Required documents: CV including a list of publications, Statement of motivation with a short description of recently solved scientific problems, Names of at least two references (and their email addresses)

Field: **Systems Neuroscience**

Slovak Academy of Sciences,  
 Institute of Neuroimmunology

Organization type: Public  
 Research Institution  
 Website:  
[www.niu.sav.sk/research-groups/systems-neuroscience/](http://www.niu.sav.sk/research-groups/systems-neuroscience/)

Contact:  
[tomas.hromadka@savba.sk](mailto:tomas.hromadka@savba.sk)

Postdoctoral position is available at the Department of Systems Neuroscience, Institute of Neuroimmunology, Slovak Academy of Sciences in Bratislava, Slovakia. Our research focuses on dissecting the functional architecture of neuronal circuits in neurodegenerative disorders. We use two-photon imaging and electrophysiology approaches in-vivo to relate directly the detailed structure and function of cortical circuits to perception and behavior in Alzheimer's disease. We are seeking highly-motivated and curiosity driven individuals, preferably with some experience with two photon imaging, patch-clamp recordings, or mouse behavior. Our institute offers a highly collaborative and friendly environment for people interested in working on various aspects of neurodegenerative disorders.

Required documents: general expression of interest

Field: **Experimental Psychology**

Slovak Academy of Sciences,  
 Centre of Social and  
 Psychological Sciences

Organization type: University  
 Website:  
<https://psychologia.sav.sk/en/>

Contact:  
[jakub.srol@savba.sk](mailto:jakub.srol@savba.sk)

The candidate would become a member of our research team which focuses on epistemically suspect beliefs (paranormal, conspiracy, and pseudoscientific beliefs) - their predictors, social consequences, and possibilities for reduction of those beliefs. Our team has a long tradition of research in this domain, we would be glad to provide more information to applicants upon request.

Required documents: CV & Publication track record

Field: <b>Romance Studies</b>		
Matej Bel University in Banská Bystrica, Department of Romance Studies	Organization type: University Website: <a href="http://www.umb.sk">www.umb.sk</a>	Contact: <a href="mailto:katarina.chovancova@umb.sk">katarina.chovancova@umb.sk</a> <a href="mailto:monika.korgova@umb.sk">monika.korgova@umb.sk</a>
<p>Under the Horizon Europe framework program, Department of Romance Studies at the Faculty of Arts of Matej Bel University (UMB) is available to be your host institution in selected fields of social science and humanities, Arts, Languages and Sports Sciences at the Marie Skłodowska-Curie Actions Postdoctoral Fellowships.</p> <p>UMB is a public university, member of eMERGE European university alliance*. It unites 7000 students and 530 teachers and researchers including university professors, researchers, post-doctoral and doctoral fellows. A predominantly SSH-based focus allows UMB to create a unique and comprehensive environment, having the resources and facilities to support research and teaching at both national and international levels.</p> <p>UMB's Department of Romance Studies focuses on following fields of research:</p> <ol style="list-style-type: none"> <li>1) Marginalisation and related discursive practices,</li> <li>2) Sociopragmatics of exolingual communication,</li> <li>3) Conception and testing innovative methodologies for culture-based L3 acquisition,</li> <li>4) European languages, literatures, cultures and heritage(s),</li> <li>5) Management of cultural institutions,</li> <li>6) Contrastive terminologies and terminographies,</li> <li>7) Identity maps of Global South in Europe.</li> </ol> <p>For thematic areas 1, 2, 4, 6, 7, working languages are Spanish, Italian, French. For thematic areas 4, 5, English is also accepted as a working language. For thematic area 3, the working language is French and Spanish.</p> <p>*eMERGE is a consortium of 6 European public universities: University Rennes 2, France; University of Limerick, Ireland; University of South Brittany, France; Inland Norway University of Applied Sciences, Norway; Europa-Universität Flensburg, Germany; Matej Bel University in Banská Bystrica, Slovakia.</p>		
<p>Required documents: If you wish to have UMB's Department of Romance Studies as your host institution please send us your proposal by June 30th, 2021 (12:00, CET). Please identify your e-mail on subject with MSCA-PF-2021   NAME SURNAME. The proposal must include:</p> <ol style="list-style-type: none"> <li>1. Full name and e-mail; 2. CV (max. 5 pages); 3. Motivation letter (in English, max. 1 page);</li> <li>4. Short research project (in English, maximum 3 pages). Please organize your project with objective, scope and expected impact as described on MSCA work plan; 5. Short career development plan (in English, maximum 3 pages). In addition to research or innovation objectives, this plan comprises the researcher's training and career needs, including training on transferable skills, teaching, planning for publications and participation in conferences; 6. Copy of a relevant publication. Incomplete proposals will not be accepted.</li> </ol>		