

Proposals for dissertation topics for academic year 2025-2026

		Topic	Supervisor	Guaranteeing workplace	Programme	Language
1	DisP	Assessing changes in the nature of vegetation fires under a changing climate and the potential impact on greenhouse gas emissions	Trnka, M.	ÚAK AF	D-ABKEN	EN
2	DisP	Carbon dynamics in floodplain ecosystems	Pavelka, M.	ÚAK AF	D-ABKEN	EN
3	DisP	Climate change mitigation techniques and methods in agriculture and forestry and their combination with adaptation measures	Trnka, M.	ÚAK AF	D-ABKEN	EN
4	DisP	The relationship between drought parameters and the nature of its impacts at global and regional scales	Trnka, M.	ÚAK AF	D-ABKEN	EN
5	DisP	Agroecological approaches in agriculture	Šťastná, M.	ÚKE AF	D-AKEEN	EN
6	DisP	Paleodiversity versus recent insect diversity on the example of selected Heteroptera and Coleoptera groups	Bezděk, J.	ÚZRHV AF	D-AZOEN	EN
7	DisP	Advanced Packaging Materials Based on Polymeric Nanoparticles	Richtera, L.	ÚCB AF	D-BCHEN	EN
8	DisP	Advancing Plant Protection with Composite Nanomaterials	Richtera, L.	ÚCB AF	D-BCHEN	EN
9	DisP	Advancing Plant Stress Studies with Electrochemical Microelectrodes	Richtera, L.	ÚCB AF	D-BCHEN	EN
10	DisP	Analysis of Ribosomal Peptides in Antarctic Psychrophilic Microorganisms	Šmerková, K.	ÚCB AF	D-BCHEN	EN
11	DisP	Biosensors for Environmental Monitoring	Richtera, L.	ÚCB AF	D-BCHEN	EN
12	DisP	Design and synthesis of cells stable fluorescent reporters for long-term monitoring of bioorthogonal catalytic activity in vivo	Heger, Z.	ÚCB AF	D-BCHEN	EN
13	DisP	Development of Bioelectrochemical Methods for Real-Time Monitoring in Smart Agriculture	Richtera, L.	ÚCB AF	D-BCHEN	EN
14	DisP	Development of Electrochemical Methods for Detection of Per- and Polyfluorinated Alkyl Substances ('Forever Chemicals') in the Environment	Richtera, L.	ÚCB AF	D-BCHEN	EN
15	DisP	Distribution of Selected Pollutants in Relation to Atmospheric Particles Characterized by Elemental Analysis and Electron Microscopy	Richtera, L.	ÚCB AF	D-BCHEN	EN
16	DisP	Electrochemical Immunosensors for Detection of Biomarkers	Richtera, L.	ÚCB AF	D-BCHEN	EN
17	DisP	Chemoresistance in Cancer: Unveiling New Therapeutic Pathways	Mertos Rodrigo, M. Á.	ÚCB AF	D-BCHEN	EN
18	DisP	Innovative Applications of Scanning Electrochemical Microscopy (SECM) in Biological Science	Richtera, L.	ÚCB AF	D-BCHEN	EN
19	DisP	Innovative Label-Free Electrochemical Sensors for Disease Biomarker Detection	Richtera, L.	ÚCB AF	D-BCHEN	EN
20	DisP	Macromolecular nanomedicines: a strategy for advanced multi-modal therapy of solid tumors	Sivák, L.	ÚCB AF	D-BCHEN	EN
21	DisP	Molecular insights into the interactions between microplastics and microalgae: mechanisms, impacts, and biotechnological applications	Koláčková, M.	ÚCB AF	D-BCHEN	EN
22	DisP	New Generation of Nanozymes with Enhanced Selectivity in Electrochemical Sensors	Richtera, L.	ÚCB AF	D-BCHEN	EN
23	DisP	New polymeric palladium nanocatalysts for targeted bioorthogonal prodrug activation in vivo	Heger, Z.	ÚCB AF	D-BCHEN	EN
24	DisP	Next generation lipid nanoparticles for functional delivery of nucleic acids	Heger, Z.	ÚCB AF	D-BCHEN	EN
25	DisP	Polymer-facilitated drug encapsulation into ferritin nanocages	Heger, Z.	ÚCB AF	D-BCHEN	EN
26	DisP	Targeted therapy of chemoresistant tumors with ferritin-based nanotherapeutics	Sivák, L.	ÚCB AF	D-BCHEN	EN
27	DisP	The effect of synthetic steroid hormones with a pronounced anabolic effect on the microscopic structure of selected pig organs	Sládek, Z.	ÚMFGZ AF	D-MBGFZEN	EN
28	DisP	Early Plant Stress Detection with Hyperspectral Imaging and Machine Learning	Novák, J.	ÚMBR AF	D-MFGBREN	EN
29	DisP	Molecular mechanisms of plant-environment interactions	Černý, M.	ÚMBR AF	D-MFGBREN	EN
30	DisP	Plant endomembrane system in stress responses	Zouhar, J.	ÚBFR AF	D-MFGBREN	EN
31	DisP	Optimalisation of laying hens feeding in developing countries	Lichovníková, M.	ÚCHHZ AF	D-OSZEN	EN
32	DisP	Potential use of High Voltage Electrical Discharge to improve barley malting process	Cerkal, R.	ÚPŠRR AF	D-SPREN	EN
33	DisP	Root plasticity and water use efficiency in cereals under heat and water-deficit conditions	Středa, T.	ÚPŠRR AF	D-SPREN	EN
34	DisP	Wheat dwarf virus – pathogen detection and identification, resistance testing in wheat	Smutná, P.	ÚPŠRR AF	D-SPREN	EN