

Research/art/teacher profile of a person

Name and surname	Ing. Jakub Míšek, PhD.
Document type:	Research/art/teacher profile of a person
The name of the university	Comenius University Bratislava
The seat of the university	Šafárikovo námestie 6, 818 06 Bratislava
The name of the faculty	Jessenius Faculty of Medicine in Martin
The seat of the faculty	Malá Hora 10701/4A, 03601 Martin

I. - Basic information

I.1 - Surname	Míšek
I.2 - Name	Jakub
I.3 - Degrees	Ing., PhD.
I.4 - Year of birth	1986
I.5 - Name of the workplace	Department of Medical Biophysics, Jessenius Faculty of Medicine in Martin, Comenius University in Bratislava
I.6 - Address of the workplace	Mala hora 4, 03601 Martin, Slovak Republic
I.7 - Position	researcher
I.8 - E-mail address	misek3@uniba.sk
I.9 - Hyperlink to the entry of a person in the Register of university staff	www.portalvs.sk/regzam/detail/25036
I.10 - Name of the study field in which a person works at the university	General medicine
I.11 - ORCID iD	0000-0001-8598-7008

II. - Higher education and further qualification growth

II.1 - First degree of higher education

II.a - Name of the university or institution	Faculty of Electrical Engineering and Information Technology, University of Žilina
II.b - Year	2012
II.c - Study field and programme	Biomedical Engineering

II.2 - Second degree of higher education

II.a - Name of the university or institution	Faculty of Electrical Engineering and Information Technology, University of Žilina
II.b - Year	2014
II.c - Study field and programme	Biomedical Engineering

II.3 - Third degree of higher education

II.a - Name of the university or institution	Jessenius Faculty of Medicine in Martin, Comenius University in Bratislava
II.b - Year	2018
II.c - Study field and programme	Medical biophysics

II.4 - Associate professor

II.5 - Professor

II.6 - Doctor of Science (DrSc.)

III. - Current and previous employment

III.a - Occupation-position	III.b - Institution	III.c - Duration
researcher	Department of Medical Biophysics, Jessenius Faculty of Medicine in Martin, Comenius University in Bratislava	2018 to present

IV. - Development of pedagogical, professional, language, digital and other skills

IV.a - Activity description, course name, other	IV.b - Name of the institution	IV.c - Year
Course of Medical education	Jessenius Faculty of Medicine in Martin, Comenius University in Bratislava	2020
Accredited further education program: Protection of animals used for scientific or educational purposes	Institute of postgraduate education of veterinary surgeons	2015
English certificate level B1	Academy of Education in Martin	2014

V. - Overview of activities within the teaching career at the university

V.1 - Overview of the profile courses taught in the current academic year according to study programmes

V.1.a - Name of the profile course	V.1.b - Study programme	V.1.c - Degree	V.1.d - Field of study
Medical Biophysics	General medicine	II.	General medicine
Medical Biophysics	Dental Medicine	II.	Dental Medicine
Biophysics and Radiology	Public Health	I.	Public Health
Biophysics and Radiology	Midwifery	I.	Midwifery
Biophysics and Radiology	Nursing	I.	Nursing

V.3 - Overview of the responsibility for the development and quality of the field of habilitation procedure and inaugural procedure in the current academic year

V.3.a - Name of the field of habilitation procedure and inaugural procedure	V.3.b - Study field to which it is assigned
Medical Biophysics	General medicine

V.4 - Overview of supervised final theses

V.4.1 - Number of currently supervised theses

V.4.a - Bachelor's (first degree)	0
V.4.b - Diploma (second degree)	0
V.4.c - Dissertation (third degree)	0

V.4.2 - Number of defended theses

V.4.a - Bachelor's (first degree)	0
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V.4.b - Diploma (second degree)	2
V.4.c - Dissertation (third degree)	0
V.5 - Overview of other courses taught in the current academic year according to study programmes	

V.5.a - Name of the course	V.5.b - Study programme	V.5.c - Degree	V.5.d - Field of study
Medical Biophysics	Biomedical Engineering	I.	Electrical and Electronics Engineering

VI. - Overview of the research/artistic/other outputs

VI.1 - Overview of the research/artistic/other outputs and the corresponding citations

VI.1.1 - Number of the research/artistic/other outputs

VI.1.a - Overall	71
VI.1.b - Over the last six years	31

VI.1.2 - Number of the research/artistic/other outputs registered in the Web of Science or Scopus databases

VI.1.a - Overall	18
VI.1.b - Over the last six years	10

VI.1.3 - Number of citations corresponding to the research/artistic/other outputs

VI.1.a - Overall	108
VI.1.b - Over the last six years	90

VI.1.4 - Number of citations registered in the Web of Science or Scopus databases

VI.1.a - Overall	85
VI.1.b - Over the last six years	69

VI.1.5 - Number of invited lectures at the international, national level

VI.1.a - Overall	0
VI.1.b - Over the last six years	0

VI.2 - The most significant research/artistic/other outputs

1	Misek, J., Belyaev, I., Jakusova, V., Tonhajzerova, I., Barabas, J., Jakus, J. Heart rate variability affected by radio frequency electro-magnetic field in adolescent students, Bioelectromagnetics 2018, 39(4): 277-288.
2	Misek J., Veternik M., Tonhajzerova I., Jakusova V., Janousek L., Jakus J. Radiofrequency electromagnetic field affects heart rate variability in rabbits. Physiological Research. 2020, 69(4): 633-643.
3	Zastko L., Rackova A., Petrovicova P., Durdik M., Misek J., Markova E., Belyaev I. Evaluation of calyculin a effect on γ h2ax/53bp1 focus formation and apoptosis in human umbilical cord blood lymphocytes. International Journal of Molecular Sciences, 2021, 22(11): 5470.
4	Misek J., Jakus J., Hamza Sladicekova K., Zastko L., Veternik M., Jakusova V., Belyaev I. Extremely low frequency magnetic fields emitted by cell phones. Frontiers in Physics, 2023, 11 (1094921): 1-8.
5	Parizek D., Visnovcova N., Hamza Sladicekova K., Misek J., Jakus J., Jakusova J., Kohan M., Visnovcova Z., Ferencova N., Tonhajzerova I. Electromagnetic fields - do they pose a cardiovascular risk? Physiological Research, 2023, 72(2): 199-208.

VI.3 - The most significant research/artistic/other outputs over the last six years

1	Misek J., Jakus J., Hamza Sladicekova K., Zastko L., Veternik M., Jakusova V., Belyaev I. Extremely low frequency magnetic fields emitted by cell phones. Frontiers in Physics, 2023, 11 (1094921): 1-8.
2	Parizek D., Visnovcova N., Hamza Sladicekova K., Misek J., Jakus J., Jakusova J., Kohan M., Visnovcova Z., Ferencova N., Tonhajzerova I. Electromagnetic fields - do they pose a cardiovascular risk? Physiological Research, 2023, 72(2): 199-208.
3	Zastko L., Rackova A., Petrovicova P., Durdik M., Misek J., Markova E., Belyaev I. Evaluation of calyculin a effect on γ h2ax/53bp1 focus formation and apoptosis in human umbilical cord blood lymphocytes. International Journal of Molecular Sciences, 2021, 22(11): 5470.

4	Kopani M, Panik J, Filova B, Bujdos M, Misek J, Kohan M, Jakus J, Povinec P. PIXE analysis of iron in rabbit cerebellum after exposure to radiofrequency electromagnetic fields. Bratisl Med J, 2022, 123(12):864-871.
5	Misek J., Veternik M., Tonhajzerova I., Jakusova V., Janousek L., Jakus J. Radiofrequency electromagnetic field affects heart rate variability in rabbits. Physiological Research. 2020, 69(4): 633-643.

VI.4 - The most significant citations corresponding to the research/artistic/other outputs

1	Misek, J., Belyaev, I., Jakusova, V., Tonhajzerova, I., Barabas, J., Jakus, J. Heart rate variability affected by radio frequency electro-magnetic field in adolescent students, Bioelectromagnetics, 2018, 39(4): 277-288. citation: Lai Y.F., Wang H.Y., Peng R.Y. Establishment of injury models in studies of biological effects induced by microwave radiation. Military Medical Research, 2021, 8(1): 1-18.
2	Misek, J., Belyaev, I., Jakusova, V., Tonhajzerova, I., Barabas, J., Jakus, J. Heart rate variability affected by radio frequency electro-magnetic field in adolescent students, Bioelectromagnetics, 2018, 39(4): 277-288. citation: Wallace J., Andrianome S., Ghosn R., Blanchard E.S., Telliez F., Selmaoui B. Heart rate variability in healthy young adults exposed to global system for mobile communication (GSM) 900-MHz radiofrequency signal from mobile phones. Environmental Research, 2020, 191: 110097.
3	Misek, J., Belyaev, I., Jakusova, V., Tonhajzerova, I., Barabas, J., Jakus, J. Heart rate variability affected by radio frequency electro-magnetic field in adolescent students. Bioelectromagnetics, 2018, 39(4): 277-288. citation: Viti A., Panconi G., Guarducci S., Garfagnini S., Mondonico M., Bravi R., Minciocchi D. Modulation of Heart Rate Variability following PAP Ion Magnetic Induction Intervention in Subjects with Chronic Musculoskeletal Pain: A Pilot Randomized Controlled Study. In: International Journal of Environmental Research and Public Health, 2023, 20(5): 1-14.
4	Misek J., Veternik M., Tonhajzerova I., Jakusova V., Janousek L., Jakus J. Radiofrequency electromagnetic field affects heart rate variability in rabbits. Physiological Research. 2020, 69(4): 633-643. citation: Vraka A., Bertomeu-González V., Fácila L., Moreno-Arribas J., Alcaraz R., Rieta J.J. The Dissimilar Impact in Atrial Substrate Modification of Left and Right Pulmonary Veins Isolation after Catheter Ablation of Paroxysmal Atrial Fibrillation. Journal of Personalized Medicine, 2022, 12(3): 1-18.
5	Kopani M, Filova B, Sevcik P, Kosnac D, Misek J, Polak S, Kohan M, Major J, Zdimalova M, Jakus J. Iron deposition in rabbit cerebellum after exposure to generated and mobile GSM electromagnetic fields. Bratisl Med J 2017; 118 (10): 575 – 579. citation: Yahyazadeh A., Altunkaynak B.Z. Neuroprotective efficacy of luteolin on a 900-MHz electromagnetic field-induced cerebellar alteration in adult male rat. Brain Research, 2020, 1744(146919): 1-8.

VI.5 - Participation in conducting (leading) the most important research projects or art projects over the last six years

1	Project VEGA1 / 0173/20: Iron and other biogenic elements in the CNS as markers of exposure to electromagnetic fields. The main subject of research is the evaluation of the non - thermal effects of EMP on experimental animals (rabbit, rat), accumulation of iron (ferritin) as well as other biogenic elements in the CNS and other organs examined by Magnetic Resonance Spectroscopy (MRS). Measurement of the amount and distribution of non-heme iron in the body will allow a better understanding of the EMF biological effects and may also be important for understanding the emergence and treatment of the neurodegenerative diseases of a brain and spinal cord. Principal investigator. In Slovak.
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2	Project APVV-19-0214: Biocompatibility and objectification of the grid Frequency Electromagnetic field in densely populated areas. Implementation of this multidisciplinary project expressively contributes to the realisation of the EU policies at national level. The activities are focused on: 1) objectification of the 50 Hz EM background levels in select, densely populated areas, also extending beyond the designated protection zones; 2) a qualitative and quantitative analysis of potential bio-effects of grid frequency EM field and 3) suggestion of effective preventive measures for decreasing the effects. The main project outcome is a unique web portal that will provide information pertaining to the levels of artificial EM low-frequency background in selected densely populated areas, to the related potential health risks and recommendations for appropriate preventive measures. Investigator. In Slovak.
3	Project KEGA 057UK-4/2021: Preparation of university textbook in english language for medical Biophysics with innovation of teaching processes for distance education using e-learning. The presented project is focused on updating the educational texts of theoretical and practical section of the mandatory subject Medical Biophysics of the first-year students at the Faculty of Medicine and Faculty of Engineering of both Medical and Non-medical faculties. In order to improve the educational process, it is necessary to issue new university textbook for foreign students in program general medicine in English, which would reflect the modern practical tasks and completely include the necessary curriculum. The updated textbook will also include the implementation of interactive content and e-learning processes applicable during the standard as well as distance learning process upon the emergency situations. Principal investigator. In Slovak.
4	Project VEGA 1/0275/19: Coordination of respiratory tract defense mechanisms and cardiorespiratory functions in experimental animals. Results of the project will significantly improve our knowledge of regulatory mechanisms of cardiovascular and respiratory system, respiratory tract defensive reflexes with their activation through peripheral inputs as well as with modified functions of central brainstem structures. Stimulations and changes in afferent activities and reflex responses, including their modifications, will allow us to analyse their interactions when altered, e.g. under pathological conditions. We assume the application of different stimulation and signal reduction modalities in afferent pathways. Investigator. In Slovak.

VII. - Overview of organizational experience related to higher education and research/artistic/other activities

VII.a - Activity, position	VII.b - Name of the institution, board	VII.c - Duration
Full member	Slovak Biophysical Society	2014 - present
Full member	The Bioelectromagnetics Society (BEMS)	2019 - present
Full member	European Bioelectromagnetics Association (EBEA)	2019 - present

VIII. - Overview of international mobilities and visits oriented on education and research/artistic/other activities in the given field of study

VIII.a - Name of the institution	VIII.b - Address of the institution	VIII.c - Duration (indicate the duration of stay)	VIII.d - Mobility scheme, employment contract, other (describe)
Linköping University	Linköping, Sweden	11 of Jan. 2013 - 26 of May 2013	ERASMUS

IX. - Other relevant facts

IX.a - If relevant, other activities related to higher education or research/artistic/other activities are mentioned

Diploma for II. place in the competition for the best scientific lecture in the category of doctoral students awarded by the scientific committee of the conference with international participation "41st days of medical biophysics 2018".

Slovak Biophysical Society award for a young researcher under the age of 35 for excellent scientific results and significant publishing activities in the field of risk assessment studies related to the electromagnetic fields. 2020.

Date of last update

24.04.2024