

PERSONAL INFORMATION

Michal CIFRA born 19th July 1983, Slovakia

EDUCATION/ACADEMIC DEGREES

2009 **PhD. in Radioelectronics**, Department of Electromagnetic Field, Faculty of Electrical Engineering, Czech Technical University in Prague, Czechia

2006 **M.Sc. (Ing.) in Biomedical Engineering**, Faculty of Electrical Engineering, University of Žilina, Slovakia

POSITIONS

2019 – now **Senior scientist** – Inst. Photonics and Electronics, Czech Acad. of Sci, Czechia

2013 – now **Team leader** – Inst. Photonics and Electronics, Czech Acad. of Sci, Czechia

2014 – 2015 **Visiting professor**, 8 months, University of Chicago, James Franck Institute / Physical Sciences Div. (Dept. of Chemistry), Chicago, USA

2013 Sept. **Visiting researcher**, National Institute for Materials Science, Tsukuba, Japan

2010 – 2012 **Postdoctoral researcher**, Institute of Photonics and Electronics, CAS, Czechia

2010 Sept. **Erasmus Mundus visiting researcher**, State University of Campinas, Brazil

2005 – 2010 3 months total – **Visiting student researcher**, International Institute of Biophysics, Neuss, Germany

2004 – 2005 7 months total - **Student researcher (HiWi) / Socrates Erasmus fellow / Leonardo da Vinci trainee**, ELCAT GmbH & Institut für Hochfrequenztechnik, RWTH Aachen, Germany

PROJECTS

2025 – 2028 Czech Health ResearchCouncil - NW25-08-00274 - *Exposing the role of electrochemical reactions in electroporation*, 250 kEUR, **co-PI**

2025 – 2027 Czech Science Foundation - 25-16700S – *Microwave sensors for unraveling biomolecular effects of pulsed electric field*, 360 kEUR, **PI**

Past (2010-2024): Czech Science Foundation projects - 5 (PI), 1 (co-PI), total share ~3 MEUR, topics:
1) *radiofrequency, microwave, subTHz sensors and devices for electromagnetic analysis and manipulation of cells and cytoskeletal protein structures*, 2) *pulsed electric field biomolecular effects*, 3) *biological autochemiluminescence*

2015 – 2021 2 joint Research Projects Czech & Slovak Academy of Science: 1. *Exploring physical basis of electromagnetic field interactions with biomolecules, cells and tissue*, 2. *Novel integrated approaches for research of biomedical effects of pulsed electric fields*

2014 – 2021 COST Actions BM1309 European network for innovative uses of EMFs in biomedical applications, CA15211 Atmospheric Electricity Network: coupling with the Earth System, climate and biological systems, **management committee member**

INVITED / TRAVEL-COST-COVERED TALKS

2022: 3 *XXVII Int. Symp. on Bioelectrochem. and Bioenergetics*, Antwerpen, Belgium, 4.-7. 4.
ATAP-RASC URSI, Gran Canaria, 29.5.-3.6., *IEEE IMBioC* 16.5.-18.5., 2022

2021: 4 *GASS URSI*, Italy, 28.8.- 4.9.; *XXVI. Ann. Cong. Czech and Slovak Soc. Biochem & Mol. Biol.*, CR, 29.8.-1.9.; *4th Aquaphotonics Int Symp*, Japan, 20-22 Mar; *IEEE Sensors*, AU, 1-4 Nov

2019 *XXV Int. Symp. on Bioelectrochemistry and Bioenergetics*, Limerick, Ireland, 26-30 May,
Int. Winterschool on Bioelectronics, Kirchberg in Tirol, Austria, 16-23 March

2018 *3rd Aquaphotonics International Symposium*, Awaji, Japan, 2-6 December

2017 *Conf. on the Physics, Chemistry and Biology of Water*, Sofia, Bulgaria, 26-29 October, *8th International THz-Bio workshop*, Frascati, Italy, 4-6 October

2016 *International Workshop on Ultra-weak Photon Emission*, Tehran, Iran, 7-9 February

2015 *Cong. Internacional en Tecnología, Innovación y Docencia*, Mexico 20-24 April

2012 *Biophysical Aspects of Complexity in Health and Disease* / Lugano, Switzerland, 18-19 May

2011 *Conf. on the Physics, Chemistry and Biology of Water* / Vermont, USA, 20-23 October

2011 *Electromagnetic fields and Quantum phenomena in the BioSystems* / Poznań, Poland, 20 May

2010 *Summer School on Biophotonics and Applications of Biophotons*, International Institute for Biophysics / Neuss, Germany, 1-6 August

2008 – 2015 10 other invited conference talks / local seminars in Czechia, France, Japan, Mexico, USA, UK

FELLOWSHIPS, AWARDS, HONORS

2022 Justin Teissié Award, ISEBTT

2021 Life member, SPIE

2021 Best Paper Award (2nd place) from IEEE Sensors 2021 Conference

2019 Best Paper award for 2019 from Institute of Photonics and Electronics, CAS

2019 Senior member of Optica (former Optical Society of America)

2016 Otto Wichterle Award from the Czech Academy of Sciences in the field of Mathematics, Physics and Earth Sciences

2015 IEEE, Senior Member

2015 International Travel Award by Biophysical Society *Annual meeting 2015 - to present outstanding achievements in biophysics research*, USA (competition success rate: 39%)

2014 European Molecular Biology Laboratory Advanced Training Centre Corporate Partnership Programme Fellowship / Heidelberg / Germany (success rate in program: 12%)

2008 Young Scientist Award / URSI – International Union of Radio Science, Belgium/USA

ORGANIZATION OF SCIENTIFIC MEETINGS

Co/organized 30+ conferences/workshops/special sessions (+ served in the technical program/scientific committees) with total 10000+ attendees. Organizer of the Bioelectrodynamics webinar series since 2021.

TEACHING, MENTORSHIP OF STUDENTS AND POSTDOCS

Molecular Bioelectromagnetism course founder (Charles Uni in Prague), **co- or supervisor of students: 12 master, 7 doctoral** (6 graduated / 1 ongoing), **8 postdocs** (4 ongoing)

Member of the under-/graduate programs boards: 3 PhD programs - *Radioelectronics, Applied Physics* FEE CTU in Prague, CZ, *Biophysics, Chemical and Macromolecular Physics*, FMP, Charles Uni in Prague, CZ, 1 MSc program: *Biomedical Engineering*, FEEIT University of Zilina, Slovakia

Leadership trainings: EMBO Lab Leadership 2015, Leadership Sculptor 2018, Optica Level-up 2024

MEMBERSHIP IN SCIENTIFIC SOCIETIES, JOURNAL EDITORIAL BOARD

BioEM – member of the communication committee, **Senior Member of IEEE, chair** (2018-2021) & **secretary of CSS IEEE EMB** (societies: Engineering in Biology and Medicine (2015 -), Microwave Theory and Techniques (2015 -2018- member of MTT TC28), Photonics Society (2013 -), Life Sciences Community (2013 -), Czechoslovakia section (2007 -), **associate editor** Scientific Reports (2019-), IEEE JERM (2018-2024)

URSI (Int. Union of Radio Science): **Com K TAC member, secretary of the national committee**

Senior member (Optica), **Member** (ISEBTT, Bioelectrochemical Society, European Microwave Association, International Society for Bioelectromagnetism, Czechoslovak Biological Society, SPIE)

APPLIED RESEARCH AND COMMERCIALIZATION

2024 patent *The method of determining the complex permittivity*, CZ 309946

2007 – 2012 MetaVia, s.r.o. co-founder and CTO (generated products w/ final market value of ~ 0.3 MEUR)

BIBLIOGRAPHY

120 documents (>80 journal papers) in Web of Science, guest editor for 2 special issues of different journals, 3x book editor. **Citations** >1600 (WoS), >3300 (Google Scholar), **Hirsch index** 21 (WoS), 28 (Google Scholar). **Publications:** see ORCID: [0000-0002-8853-9523](https://orcid.org/0000-0002-8853-9523) / Researcher ID: [D-4416-2013](https://reid.elsevier.com/D-4416-2013) [Google Scholar](https://scholar.google.com/citations?user=000000288539523&hl=en)