

MARTIN KONHEFR

Junior Research Scientist

CONTACTS

email m.konhefr@seznam.cz
website <https://martin.konhefr.com>
LinkedIn <https://www.linkedin.com/in/martin-konhefr/>
telephone (+420) 705 911 854

WORK EXPERIENCE

2022 Research Specialist, Dept. of Chemistry, MU
 2019–2021 Research Specialist, CEITEC MU
 2017–2018 Specialist, Dept. of Biochemistry, MASARYK UNIVERSITY

EDUCATION

<i>Doctoral study</i>	2015–2021	Masaryk University, Brno
	Field of study:	Biochemistry · Faculty of Science
	Training institute:	Petr Skládal Research Group, CEITEC MU, 625 00 Brno, Kamenice 5
	Admission:	26. 6. 2015 · Defence: 27. 1. 2021
	Dissertation thesis:	<i>New potential applications of interactions of boronic acids with emphasis to electrochemically active derivatives</i>
	Supervisor:	Assoc. Prof. RNDr. Petr Skládal, CSc.
<i>Master's study</i>	2013–2015	Masaryk University, Brno
	Field of study:	Analytical biochemistry · Faculty of Science
	Master thesis:	<i>Synthesis and electrochemical properties of derivatives of phenylboronic acid and ferrocene</i>
	Supervisor:	MSc. Karel Lacina, Ph.D.
<i>Bachelor's study</i>	2010–2013	Masaryk University, Brno
	Field of study:	Biochemistry · Faculty of Science
	Bachelor thesis:	<i>Synthesis of 4-(N-ferrocenylaminomethyl)-thiophene-3-boronic acid and stabilization of its SAM on gold</i>
	Supervisor:	MSc. Karel Lacina, Ph.D.

LIST OF PUBLICATIONS

- Jakub VĚŽNÍK, Martin KONHEFR, Zdenka FOHLEROVÁ and Karel LACINA, Redox-dependent cytotoxicity of ferrocene derivatives and ROS-activated prodrugs based on ferrocenyliminoboronates, *Journal of Inorganic Biochemistry*, **2021**, vol. 224, a. 111561. ISSN 0162-0134. Available from: <https://doi.org/10.1016/j.jinorgbio.2021.111561>.

- Martin KONHEFR, Lenka MICHALCOVÁ, Monika SKRUTKOVÁ LANGMAJEROVÁ, Zdeněk GLATZ, Petr SKLÁDAL, Ctibor MAZAL and Karel LACINA, Unexpected reactivity of ferrocenyl-iminoboronates: Breaking *ortho*-imine bonds by oxidation in the presence of non-aqueous sodium chloride, *Tetrahedron Letters*, **2020**, vol. 61, a. 151535. ISSN 0040-4039. Available from: <<https://doi.org/10.1016/j.tetlet.2019.151535>>.
- Jakub VĚŽNÍK, Martin KONHEFR, Libuše TRNKOVÁ, Petr SKLÁDAL and Karel LACINA, Elusive pK_a' of aminoferrocene determined with voltammetric methods in buffered and unbuffered systems and practical aspects of such experiments, *Electrochimica Acta*, **2019**, vol. 318, p. 534–541. ISSN 0013-4686. Available from: <<https://doi.org/10.1016/j.electacta.2019.05.113>>.
- Martin KONHEFR, Adam C. SEDGWICK, Tony D. JAMES, Karel LACINA, Petr SKLÁDAL, Budi Riza PUTRA, Christian HARITO, Dmitry V. BAVYKIN, Frank C. WALSH, Paul R. RAITHBY, Gabriele KOCIOK-KÖHN and Frank MARKEN, Voltammetric characterisation of diferrocenylborinic acid in organic solution and in aqueous media when immobilised into a titanate nanosheet film, *Dalton Transactions*, **2019**, vol. 48, iss. 30, p. 11200–11207. ISSN 1477-9226. Available from: <<http://dx.doi.org/10.1039/C9DT00881K>>.
- Martin KONHEFR, Karel LACINA, Monika SKRUTKOVÁ LANGMAJEROVÁ, Zdeněk GLATZ, Petr SKLÁDAL, Ctibor MAZAL, Electrochemically Facilitated Interaction of O-Nucleophiles with Imine Group in Electroactive *ortho*-((Ferrocenylimino)methyl)phenylboronate and Comparison with Its Regioisomers *ChemistrySelect*, **2018**, vol. 3, iss. 33, p. 9641–9647. ISSN 2365-6549. Available from: <<http://dx.doi.org/10.1002/slct.201802030>>.
- Martin KONHEFR, Karel LACINA, Monika SKRUTKOVÁ LANGMAJEROVÁ, Zdeněk GLATZ, Petr SKLÁDAL, Ctibor MAZAL, The synthesis and comparative characterization of three novel electroactive iminoboronates containing ferrocene, *Monatshefte für Chemie – Chemical Monthly*, **2017**, vol. 148, iss. 11, p. 1953–1958. ISSN 1434-4475. Available from: <<http://dx.doi.org/10.1007/s00706-017-2028-3>>.
- Karel LACINA, Martin KONHEFR, Jan NOVOTNÝ, David POTĚŠIL, Zbyněk ZDRÁHAL, Petr SKLÁDAL, Combining ferrocene, thiophene and a boronic acid: a hybrid ligand for reagentless electrochemical sensing of *cis*-diols *Tetrahedron Letters*, **2014**, vol. 55, iss. 21, p. 3235–3238. ISSN 0040-4039. Available from: <<http://dx.doi.org/10.1016/j.tetlet.2014.04.036>>.

SELECTED INTERNSHIPS, SUMMER SCHOOLS AND COURSES

Internships	2022	Rennes Institute of Chemical Sciences, Rennes, France
		Nanocomposite-based surface modifications of ZnO electrodes · Mobility support – MŠMT TAČR project · Supervisor – Prof. Lubomír Špaňhel · 4. 4.–15. 6. 2022
	2019	Josai University, Department of Pharmaceutical Sciences, Sakado, Japan
		Electrochemistry of Fc-labelled worm-like micelles · Scholarship – Erasmus+ ICM · Supervisor – Assoc. Prof. Yuya Egawa · 5. 3.–5. 6. 2019

<i>Summer schools</i>	2018	University of Bath, Department of Chemistry, Bath, UK Synthesis, structural characterisation and electrochemistry of diferrocenylborinic acid · Scholarship – Freemover · Supervisors – Prof. Frank Marken and Prof. Tony D. James · 15. 3. – 15. 6. 2018
	2019	Institute of Organic Chemistry and Biochemistry, Prague 6th Prague-Weizmann Summer School – Advances in Drug Discovery · 1. – 6. 9. 2019
	2012	Institute of Biophysics of the CAS, v. v. i. Brno, OPVK Summer school of experimental biology; Modern biophysical methods: advanced practical education in experimental biology · 2. – 8. 9. 2012
<i>Courses</i>	2015	Institute of Physiology of the CAS, v. v. i. Praha, Center of biomedical research, OPVK Basics of receptor neurophysiology · 13. – 17. 4. 2015

SELECTED CONFERENCES

<i>Talk</i>	2021	XXI. Workshop of Biophysical Chemists and Electrochemists, Brno, Czech Republic Boronic Acids and Ferrocenes – From Electroactive Molecular Probes to ROS-activated Prodrugs · 30. 9. – 1. 10. 2021
	2020	Graduate Student Symposium on Advantageous Electrochemistry, Warsaw, Poland Sensing Possibilities of Diferrocenylborinic Acid Immobilized in 2D-Titanate Nanosheet Host · 10. – 11. 9. 2020
<i>Online Talk</i>	2020	71st Annual Meeting ISE, Belgrade, Serbia Sensing Possibilities of Diferrocenylborinic Acid Immobilized in 2D-Titanate Nanosheet Host · 31. 8. – 4. 9. 2020
<i>Poster</i>	2019	PhD Retreat IV, Kouty, Czech Republic Indirect B–N Interactions in Boronic Acid–Aminoferrocene System: Point of View of Electrochemistry · 25. – 26. 6. 2019
<i>Talk</i>	2018	XVII. Workshop of Physical Chemists and Electrochemists, Brno, Czech Republic Synthesis, Structural Characterisation and Electrochemistry of Diferrocenylborinic Acid · 12. – 13. 9. 2018
<i>Poster</i>	2018	69th Annual Meeting ISE, Bologna, Italy Indirect B–N Interactions in Boronic Acid–Aminoferrocene System: Point of View of Electrochemistry · 2. – 8. 9. 2018

AWARDS AND ACHIEVEMENTS

Prize for best oral presentation in Young Scientists' Competition
(XXI. Workshop of Biophysical Chemists and Electrochemists, Brno, CZ, 1. 10. 2021)

SCIENTIFIC AND RESEARCH INTERESTS

Electrochemical sensors and their applications
Development of *reagentless* sensors with electrochemical detection
Physicochemical characterisation of compounds
Organic synthesis of electrochemical derivatives with ferrocene and boronic acids; NMR
Advanced stimuli-responsive and switchable smart molecular materials

COMPUTER SKILLS

<i>Basic</i>	GIMP, HTML, php, jQuery, Python and some other coding languages
<i>Advanced</i>	L ^A T _E X, Microsoft Windows, Microsoft Office, ChemSketch, Reaxys, SciFinder, Origin

OTHER INFORMATION

<i>Language skills</i>	ENGLISH · active, level B2 GERMAN · passive
<i>Interests</i>	reading · flying · soaring · sailing · biking · travelling · being in nature · gardening · mushrooming · beer brewing · dancing · coding · photo/video editing

January 26, 2023