Michal Ptáček

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∗ 1997 in Pilsen, Czechia

Education

since 2023	**PhD in Biophysics, Chemical and Macromolecular Physics** Faculty of Mathematics and Physics, Charles University, Prague, Czechia

	Topic:	Nonlinear optical spectroscopy of electron-phonon coupling in small molecules
	Supervisor:	Tomáš Mančal

2020–2023	**MSc in Theoretical Biophysics and Chemical Physics** transcript Faculty of Mathematics and Physics, Charles University, Prague, Czechia

	Thesis:	Theory of ultrafast relaxation and internal conversion in chlorophyll molecules
	Supervisor:	Tomáš Mančal

2017–2020	**BSc in Molecular Biology and Biochemistry of Organisms** transcript Faculty of Science, Charles University, Prague, Czechia

	Thesis:	Excitation energy transfer in photosynthetic reaction centres
	Supervisor:	Tomáš Mančal

2009–2017	**Grammar School** Gymnasium, Pilsen, Mikulášské náměstí 23, Czechia

IT Skills & Programming Experience

- Programming: Python (development of packages and apps with GUI); TeX (typesetting, customisation of packages and BibTeX styles); Bash; Astro framework, HTML, JavaScript, TypeScript (web development, scripting); Visual Basic (MS Excel macros); R (statistics); beginner with C++, C#
- Computer graphics: Blender, Inkscape, DaVinci Resolve, Gimp, CAD, etc.

Language Skills

	listening	reading	speaking	writing
Czech	native language			
English	C1	C1	C1	C1
French	A2	B1	A1	A2
German	A1	A1	A1	A1

Certificates

- **Cambridge C1 Advanced (CAE)**
 grade C, overall score of 187
 exam date: October 26, 2019

Work Experience

since 2022	Charles University; Researcher at the Molecular Open Quantum Systems group of Dr. T. Mančal *Programmer in Python, editor of study materials (especially educational videos)*
since 2017	Charles University (since 2021), Czech University of Life Sciences (2017–2021); Member of the Biology Olympiad organising team for the Czech Republic (international competition for secondary school students) *Chief typesetter and graphics editor, author of educational and examination texts*

2025   Web development: research group website (mama-group.cz)
        A development of a new website for our research group. Created using Astro JavaScript framework. ⦿

2023   Overleaf–ReadCube Papers integration
        A TamperMonkey script for integrating ReadCube Papers citation software support into Overleaf (online TeX editor) UI. ⦿

2023   Python package `track_vis`
        Easy-to-use set of tools for graphical processing of GPS data from e.g. sport trackers, supporting custom maps via MapBox API. ⦿

2022   Exam project: Hermitian and non-Hermitian theory of scattering and resonances
        Derivation, implementation of equations from scratch, and benchmarking using Python language and various accelerators. 📄 ⦿

2022   Exam project: CI method for solving He atom using iterative approach
        Derivation and implementation of equations from scratch using Python language. ⦿

2022   Exam project: *Ab initio* molecular dynamics
        Implementation of equations using Python language and various quantum chemical libraries. 📄 ⦿

2021   Python package `colour_of_molecule`
        A tool-set for analysing excited states' calculations from quantum chemical software. ⦿ 🐍

2021   Exam project: Classical molecular dynamics from scratch
        Implementation of equations from scratch using Python language and various accelerators. 📄 ⦿

2016   Algological survey
        A three year study of seasonal dynamics of alga in a freshwater natural reserve. A student project cooperated with the University of West Bohemia. (in Czech) 📄

Interest & Hobbies

- Computers and technology, programming
- Art and architecture, photography, graphic arts & printmaking, music
- History & historic vehicles
- Botany and algology

References

Dr Tomáš Mančal, *Associate Professor*
  e-mail: mancal@karlov.mff.cuni.cz
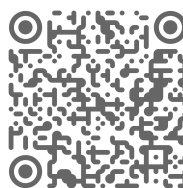 *personal web:* mama-group.cz/mancal
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