

KONSTANTIN MOTOVILOV

PERSONAL INFORMATION

March 24th, 1984 Born in Arkhangelsk, Russia, 34 years old
Website motovilov.space
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EXPERIENCE

2014-present **Laboratory of Terahertz Spectroscopy, Moscow Institute of Physics and Technology**
senior researcher, team builder, system architect
Successful organization from a scratch of multidisciplinary international team of scientists and engineers aiming to study the mechanisms of electron and ion transportation in biological materials and synthetic supramolecular complexes by means of modern techniques of solid state physics. Responsibility for setting tasks and planning of team work flow, staff motivation, data analysis, negotiations with partners, writing scientific articles, making conference presentations and giving an interview and comments to the mass media.

Summer 2015 **Summer biological field practice of MIPT in the White Sea**
head of quatermasters team
Planning, construction and setting of the base camp, managing of quatermasters team, navigation of the motorboats, negotiations with volunteer organizations and local officials.

2010-2013 **Laboratory of Biophysics of Excitable Systems, Moscow Institute of Physics and Technology**
senior researcher, deputy head of laboratory, team builder
The complete management of a big laboratory (about 40 employees and 1.5 mln US dollars budget per year): search for the new employees, purchase and launch of equipment, formulation and detailing of a new tasks, organization and maintenance of laboratory seminars, preparation of grant proposals and reports, writing of scientific articles and press releases, organization of a joint research projects with the other laboratories, making conference reports and interaction with mass media and government officials.

2009-present **Department of General and Applied Physics, Moscow Institute of Physics and Technology**
assistant professor, teaching assistant
Lecturing on two courses: inorganic and coordination chemistry, biophysics of membrane and mitochondrial processes.

2006-2009 **Department of Bioenergetics, Moscow State University.**
junior researcher
Synthesis of new uncouplers of oxidative phosphorylation. Studies of biochemical kinetics of the newly synthesized CoQ-based antioxidants.

SKILLS

Management skills

COMMUNICATION · Professional speaker and presenter
· Able to explain complex data to unprepared audience
· Skilful negotiator
· Emotionally intelligent

ORGANIZATION · Effective coordinator of multidimensional workflows
· Experienced creator of adaptive development plans

	LEADERSHIP	<ul style="list-style-type: none"> · Builder of relationships in team · Experienced coach and mentor · Intrinsically calm, open and optimistic
Scientific skills	STATISTICS AND REPRODUCIBILITY	<ul style="list-style-type: none"> · Knowledge of methods of hypotheses verification · Simulation modeling · Understanding of approaches to planning of experiments
	PHYSICS	<ul style="list-style-type: none"> · Wide-range spectroscopy · Atomic-force microscopy · Electron and ion kinetics measurements
	CHEMISTRY	<ul style="list-style-type: none"> · Various methods of synthesis, extraction, purification and structural analysis of compounds and phases · Computational chemistry packages and techniques: LAMMPS, VASP, Gaussian etc.
Computer skills	DATA ANALYSIS	<ul style="list-style-type: none"> · Python IPython/Jupyter Notebook (pandas/scipy/numpy) · R (stringr/dplyr/data.table) · PostgreSQL
	VISUALIZATION	<ul style="list-style-type: none"> · R (ggplot2/plotly) · Python(matplotlib/Bokeh/Seaborn) · MS Powerpoint, Prezi
	TEXT PROCESSING	<ul style="list-style-type: none"> · \LaTeX, MS Word, Libre Office Writer, Mendeley
	WEB SITE SUPPORT	<ul style="list-style-type: none"> · HTML, CSS, JS
Languages	RUSSIAN	<ul style="list-style-type: none"> · Native speaker
	ENGLISH	<ul style="list-style-type: none"> · Professional working proficiency
	FRENCH	<ul style="list-style-type: none"> · Elementary proficiency

EDUCATION

2006-2009 <i>Ph.D. student</i>	<p>Moscow State University, Department of Chemistry</p> <p>Ph.D. thesis title: <i>Reactions of hydrophilic analogues of coenzyme Q in the mitochondrial respiratory chain.</i></p> <p>Advisor: Prof. Lev YAGUZHINSKY</p>
06-08.2005 <i>summer undergraduate student</i>	<p>University of Minnesota Duluth</p> <p>Synthesis of organic oxidants based on hypervalent iodine compounds and synthesis of "multi-deck" derivatives of porphyrins and phthalocyanines with various <i>d</i>-elements.</p> <p>Advisor: Prof. Viktor ZHDANKIN</p>
2001-2006 <i>student</i>	<p>Moscow State University, Department of Chemistry</p> <p>Theoretical and practical studies in Laboratory of gas catalysis and electrochemistry, Laboratory of the structure and function of membranes, Laboratory of organic synthesis.</p> <p>Advisors: Prof. Lev YAGUZHINSKY, Assist. Prof. Nadezhda AVERINA, Assist. Prof. Sergei SAVILOV</p>
1991-2001 <i>pupil</i>	<p>Studies in schools of St. Petersburg and Dubna</p> <p>School 411, School 415, School 8, Lyceum <i>Dubna</i>.</p>

KEY PUBLICATIONS

1. Redox chemistry in the pigment eumelanin as a function of temperature using broadband dielectric spectroscopy, *RSC Advances*, 9 (2019), 3857-3867
2. Impedance spectroscopy of single bacterial nanofilament reveals water-mediated charge transfer, *PLOS ONE*, 13 (2018), e0191289
3. Observation of dielectric universalities in albumin, cytochrome C and *Shewanella oneidensis* MR-1 extracellular matrix, *Scientific Reports*, 7 (2017), 15731
4. Properties and new methods of non-equilibrium membrane bound proton fraction research under conditions of proton pump activation, *Biochemistry (Moscow) Supplement Series A: Membrane and Cell Biology*, 3 (2009), 478-487
5. Restoration of contractile activity of rat cardiomyocyte cell culture, suppressed by mitochondrial NADH-dehydrogenase inhibitors, by means of hydrophilic quinones, *Proceedings of MIPT*, 5 (2013), 129-139. (Russian)

INTERVIEWS AND COMMENTS

<i>nanowerk.com</i>	Solid-state physics offers insights into dielectric properties of biomaterials
<i>ria.ru</i>	Physicists from Russia studied how different "molecules of life" conduct electric current (Russian)
<i>forbes.ru</i>	Hydrogen cleaning: Russian startup wants to accustom oilmen to clean pipes with peroxide (Russian)
<i>echo.msk.ru</i>	Science in focus. The Nobel Prize in chemistry (Russian)

OTHER INFORMATION

<i>Marital status</i>	· Married, two children
<i>Driver's licenses</i>	· Russian driver's license, category B, issued on September 15 th , 2010 · Russian skipper's license, motorboat/launch, issued on October 16 th , 2014
<i>Interests</i>	· Connection of art, science and archeology: nondestructive methods of structural analysis of objects (NMR, μ SR, neutron scattering, etc.) · Restoration of ancient artifacts · Mathematical methods in music and linguistics · The origin, evolution and death of myths in human societies · Long-term traveling by car, by foot, by boat · Cognitive games on lumosity.com (best performance index achieved 1606)

January 31, 2019