

	<p>SKORB, Ekaterina V. DSc, Chemical Science (N.D. Zelinsky Institute of Organic Chemistry)</p>
<p>Research interests</p>	<ul style="list-style-type: none"> <li>✓ Infochemistry and self-organization for chemical systems</li> <li>✓ Development of interdisciplinary approaches of chemistry with IT with study and modeling of chemical systems at interfaces for programmable, smart materials for medicine, diagnostics, energy, etc.</li> </ul>
<p>Features of the PhD program</p>	<p>There is possibility of interdisciplinary projects of chemistry and IT, work together with TOP-10 Universities, unique equipment including one for robotization of chemical technologies</p>
<p>List of the supervisor's research projects (participation/supervision)</p>	<ul style="list-style-type: none"> <li>✓ Russian Science Foundation No. 21-13-00403 Programmable soft electronics for bionic devices, head of the project, 2021-2023</li> <li>✓ Russian Foundation for Basic Research No. 20-04-60495 The universal electrochemical sensing platform for the enzyme-linked immunosorbent assay of SARS-CoV-2 virus in biological fluids, had of the project, 2020-2023</li> <li>✓ Russian Foundation for Basic Research No. 20-53-00043 New pH-sensitive self-assembled nanocontainer structures based on inorganic polymers and molecular complexes, head of the project, 2020-2021</li> </ul>
<p>List of potential thesis topics</p>	<ul style="list-style-type: none"> <li>✓ Study of the fundamental transport of charges through self-organized nanostructured polyelectrolyte assemblies at interfaces with inorganic materials</li> <li>✓ Study of interaction of polyelectrolyte complexes with protein molecules for the development of sensors for virus</li> <li>✓ Study of pH-sensitive self-assembled capsules: the synthetic cell aspects</li> <li>✓ Hydrogel structures for flexible electronics and bionic devices</li> </ul>
<p>Publications in the last five years</p>	<p>37 (Scopus / Web of Science / RSCI)</p>
<p>Key publications</p>	<p>1. Ivanov, A. S., Nikolaev, K. G., Novikov, A. S., Yurchenko, S. O., Novoselov, K. S., Andreeva, D. V., Skorb, E. V. (2021): Programmable Soft-matter Electronics, J. Phys. Chem. Lett. 2021, 12, 2017-2022 DOI:10.1021/acs.jpcllett.1c00007</p>

	<p>2. Nenashkina, A., Koltsov, S., Orlova, O. Yu., Nikitina, A. A., Kirilenko, D. A. Andreeva, D. V., Blanco-Formoso, M., Pazos-Perez, N., Alvarez-Puebla, R., Skorb, E. V. (2021): Silver melamine thin film as a flexible platform for SERS analysis, <i>Nanoscale</i> – 2021, 13, 7375-7380</p> <p>3. Ryzhkov, N. V., Nikitina, A. A., Fratzl, P., Bidan, C. M., Skorb, E. V. (2021): Polyelectrolyte Substrate Coating for Controlling Biofilm Growth at Solid-Air Interface, <i>Advanced Mater. Interfaces</i> - 2001807 - DOI: 10.1002/admi.202001807</p> <p>4. Nikitina, A. A., Milichko, V. A., Larin, A. O., Nandi, P., Mirsaidov, U., Andreeva, D. V., Kivshar, Y. S., Skorb, E. V. (2021): Mie-resonant Dielectric Nanostructures with Thermoresponsible Reversible Tunability, <i>Angew. Chem. Int. Ed.</i> DOI: 10.1002/anie.202101188</p> <p>5. Ulasevich, S. A.; Brezesinski, G.; Mohwald, H.; Fratzl, P.; Schacher, F. H.; Poznyak, S. K.; Andreeva, D. V.; Skorb, E. V. (2016): Light-Induced Water Splitting Causes High-Amplitude Oscillation of pH-Sensitive Layer-by-Layer Assemblies on TiO<sub>2</sub>. <i>Angew. Chem. Int. Ed.</i>, 55, 13001–13004</p>
Key IPs	<ul style="list-style-type: none"> <li>✓ Skorb, E.V., Andreeva, D.V., Mohwald, H., Fratzl, P. (2016): Light triggered pH changes in inorganic / organic interfaces for light-induced actuation of pH-sensitive assemblies. Application for Patent, No: 16000989.0 dated 02.05.2016</li> <li>✓ Skorb, E.V., Mohwald, H. (2010): Method for modifying the structural properties of silicon by ultrasonication. Patent Number: EP2446961-A1 WO2012055569-A1 dated 28.10.2012</li> <li>✓ Skorb, E.V., Shchukin, D.G., Skirtach, A., Mohwald, H. (2009): e. European Patent, No. 08020394 dated 28.01.2009</li> </ul>
Supervisor’s specific requirements	<ul style="list-style-type: none"> <li>✓ Physical chemistry knowledge</li> <li>✓ Programming skills</li> </ul>
Code of the subject area of the PhD program	1.4.4 Physical Chemistry