

# Ilia Degtev



## Education

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|-----------|--|
| 2008-2010 | <b>M.Sc in Physics, Department of Physics, Lomonosov Moscow State University</b><br>Major: Physics<br>Specialization: Physics and management of science-intensive technologies<br><i>Thesis: "Titanium dioxide particles as a basis for container fabrication for delivery of compounds"</i> |
| 2004-2008 | <b>B.Sc in Physics, Department of Physics, Lomonosov Moscow State University</b><br>Major: Physics<br>Specialization: Physics of nanostructures<br><i>Thesis: "Investigation of properties of polyelectrolyte microcapsules with fluorescent dyes in the shell"</i>                          |
| 1997-2004 | High school №11, Vologda, gold medal honour roll student   |

## Research experience

|           |   |
|-----------|---|
| 2008-2011 | <b>Engineer, Laboratory of Bioorganic Structures,</b><br>Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russia<br><i>Research in the area of nanobiotechnologies and targeted drug delivery</i>   |
|           | Key responsibilities and topics of research: <ul style="list-style-type: none"><li>- Synthesis, investigation of properties and structure research of polyelectrolyte multilayer capsules functionalized by fluorescent dyes and silver, gold, magnetite nanoparticles</li><li>- Synthesis and applications of micro- and nanocontainers for drug delivery systems, based on porous CaCO<sub>3</sub> and TiO<sub>2</sub> particles: from chemical synthesis to in vivo tests</li><li>- Joint research with Institute of Higher Nervous Activity and Neurophysiology, Russian Academy of Sciences: "Intranasal delivery of drugs into central nervous system".</li><li>- Supervising bachelor's projects</li></ul> |

## Working experience

|              |   |
|--------------|---|
| 2012-present | <b>Construction Engineer, self-employed, Vologda, Russia</b><br><i>Hands-on experience in the area of wood country houses construction and engineering</i>  |
|              | Key responsibilities and skills: <ul style="list-style-type: none"><li>- Development and implementation of engineering projects</li><li>- Preparation and execution of work plans for construction activities</li><li>- Quality control and supervision of construction works</li><li>- Vast hands-on experience and profound expertise in all fields of individual wood civil construction (including carpentry, electrical works, construction of foundations, interior finishing and all house life-support systems)</li><li>- Restoration projects of cultural and historical objects</li></ul> |

## Internships and volunteer job practices

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|-----------------|---|
| 07/2011-02/2012 | <b>Risk analyst, Home Credit and Finance Bank, Moscow, Russia</b><br>Internship in the retail-bank, Department of risk analyses<br><i>Development of risks predictive models</i> <ul style="list-style-type: none"> <li>- Improvement in predictive analytics algorithms</li> <li>- Monitoring of key indicators for approval processes</li> <li>- Data warehouse improvements: data analyses, formation requirements for developers</li> <li>- Ad-hoc reporting</li> </ul>     |
| 11/2010-04/2011 | <b>Marketing analyst, Vimpelcom, Moscow, Russia</b><br>Internship in the telecommunication company, Department of target marketing and sales<br><i>Applying machine learning technologies to target marketing</i> <ul style="list-style-type: none"> <li>- Development of predictive models for prevention of customer's churn</li> <li>- Evaluation of marketing campaigns efficiency</li> <li>- Preparation of target proposals and segmentation of customers base</li> </ul> |
| 2005, 2006      | <b>Construction worker, Building team of Department of Physics, Lomonosov Moscow State University, Moscow, Russia</b><br><i>Summer voluntary job practice</i> <ul style="list-style-type: none"> <li>- Restoration works of Russian cultural heritage objects</li> </ul>  |

## Skills and qualifications

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|---|---|
| Self-assembly structures synthesis        | Polyelectrolyte multilayer (PEM) capsules   |
| Inorganic synthesis and functionalization | Microparticles ( $\text{CaCO}_3$ , $\text{TiO}_2$ )<br>Nanoparticles (Gold, Silver, Magnetite)  |
| Technical skills                          | Optical /Fluorescence Microscopy. Confocal Laser Scanning Microscopy (CLSM).<br>Uv-Vis Spectroscopy. Scanning/Transmission Electron Microscopy (SEM/TEM).<br>Dynamic Light Scattering (DLS). Electrophoretic Mobility (EPM). X-ray Diffraction (XRD). |
| Data analysis and programming             | Matlab, basic level of C++<br>Large databases (Oracle), PL/SQL, Data mining (IBM SPSS Modeler)  |
| PC skills                                 | MS Office, Adobe Photoshop  |

## Awards

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|------|---|
| 2010 | Special prize for the best student work in young scientist's competition of Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russia |
| 2007 | Scholarship for the Master program with additional specialization in "Management of science-intensive technologies"   |
| 2004 | The winner of the regional stage of all-Russian school physics Olympiad, special prize for the best experimental work, Vologda, Russia                          |

Date: 02.06.2021

Signature *Ilya Degterev*

## List of publications

T.V. Bukreeva, I.V. Marchenko, T.N. Borodina, **I.V. Degtev**, S.L. Sitnikov, Y.V. Moiseeva, N.V. Gulyaeva, M.V. Kovalchuk "Calcium carbonate and titanium dioxide particles as a basis for container fabrication for brain delivery of compounds" (2011) *Doklady Physical Chemistry*, Vol. 440, Part 1, pp. 165–167

T.V. Bukreeva, A.V. Gusev, **I.V. Degtev**, I.V. Marchenko "Microcontainers based on porous TiO<sub>2</sub> particles" (2009) *XVI all-Russian conference "Structure and dynamics of molecular systems», Yalchik, Russia*

T.V. Bukreeva, I.V. Marchenko, T.N. Borodina, **I.V. Degtev**, Y.V. Moiseeva, N.V. Gulyaeva, M.V. Kovalchuk "Pharmaceutical composition for intranasal delivery of an active component to the brain and methods of its producing" (2010) *Russian patent for discovery RU 2010 149 002*

Date: 02.06.2021

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