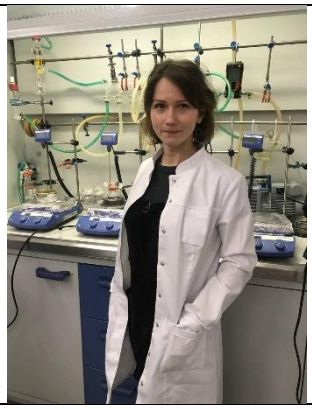	USHAKOVA, Elena V. Doctor of Science
Research interests	✓ Synthesis and functionalization of carbon nanoparticles by solvothermal and microwave methods ✓ Hybrid materials based on carbon nanoparticles and metal, semiconductor and magnetic nanoparticles ✓ Carbon nanoparticles emitting in the red and near infrared region of the spectrum ✓ Chiral carbon nanoparticles for theranostics ✓ Sensors based on carbon nanoparticles
Features of the PhD program	✓ Training and work on modern spectral equipment, including microscopy methods ✓ Collaborations with foreign research groups (Australia, Hong Kong, Germany, Ireland) ✓ Financial support for a PhD student in completing kpi.
List of the supervisor's research projects (participation/supervision)	✓ RSF «Chiral carbon nanoparticles with optical transitions in the red and near-infrared regions for theranostics» (2022-2024), PI ✓ Priority 2030 «Functionalized carbon nanoparticles» (2022-2024), PI
List of potential thesis topics	✓ Self-assembly of (non)metallic nanoparticles at soft interfaces and their implementation for optics, catalytic and electrocatalytic applications ✓ Self-assembly of 2D materials (graphene, graphene oxide, MXene) at soft interfaces and investigation of their properties (optical, catalytic and electrocatalytic) ✓ Sensing elements based on in-situ generation of reagents (in particular, ELISA sensors with H2O2 in-situ generation)
Publications in the last five years	51 (Scopus / Web of Science)
Key publications	1. Kuznetsova V., Coogan Á., Botov D., Gromova Y., Ushakova E. V., Gun'ko Y. K. Expanding the horizons of machine learning in nanomaterials to chiral nanostructures // Advanced Materials. – 2024. V. 36. No. 18. p. 2308912. Nature Index. IF=30.849 2. Vedernikova A., Miruschenko M.D., Arefina I.A., Xie J., Huang H., Koroleva A.V., Zhizhin E.V., Cherevkov S.A., Timin A.S., Mitusova K.A., Shipilovskikh S.A., Ushakova E.V. Green and Red Emissive N,O-Doped Chiral Carbon Dots Functionalized with l-Cysteine // Journal of Physical Chemistry Letters - 2024, Vol. 15, No. 1, pp. 113-120. Nature Index. IF=5.258

	3. Zhu D. Tang B., Wu Y., Portniagin A. S., Liu H., Liu Q., Ushakova E. V., Rogach A. L. Blue Circularly Polarized Luminescence from Quantum-Confined CsPbBr3 Nanocrystals with a Different Degree of Shape Anisotropy // The Journal of Physical Chemistry C. – 2024. IF=3.574 4. Cherevkov S.A., Stepanidenko E.A., Miruschenko M.D., Zverkov A.M., Mitroshin A.M., Margaryan I.V., Spiridonov I.G., Danilov D., Koroleva A.V., Zhizhin E.V., Baidakova M.V., Sokolov R.V., Sandzhieva M.A., Ushakova E.V.*, Rogach A.L. Amphiphilic Acetylacetone-Based Carbon Dots // Journal of Materials Chemistry C - 2024, Vol. 12, No. 11, pp. 3943-3952. IF=6.146 5. Tuchin V.S., Stepanidenko E.A., Vedernikova A., Cherevkov S.A., Li D., Li L., Doring A., Otyepka M., Ushakova E.V., Rogach A.L. Optical Properties Prediction for Red and Near-Infrared Emitting Carbon Dots Using Machine Learning // Small - 2024, pp. 2310402. IF=13.263
Key IPs	Kurshanov D.A., Cherevkov S.A., Baranov A.V., Dubavik A.Yu., Ushakova E.V., Bogdanov K.V., Baranov M.A. Luminescent sensor for the concentration of heavy metal ions (mainly cobalt) in water based on quantum dots of ternary composition – 2020
Supervisor's specific requirements	✓ English ✓ Basic knowledge in optics/organic chemistry ✓ Learnability
Code of the subject area of the PhD program	1.3.6 Optics 1.3.17 Chemical Physics, Burning and Combustion, Physics of Extreme States of Matter