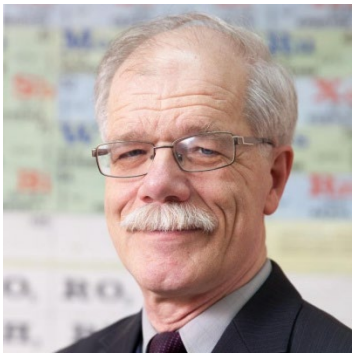
SERGEY V. ZELENTSOV

University	National Research Lobachevsky State University of Nizhny Novgorod
Level of English proficiency	Advanced
Educational program and field of the educational program for which the applicant will be accepted	1.4. Chemical Sciences 1.4.4. Physical chemistry
List of research projects of the potential supervisor (participation/leadership)	Russian Foundation for Basic Research, project No. 01-03-33113 — research team leader. Russian Science Foundation, project No. 23-19-00763 - research team participant.
List of the topics offered for the prospective scientific research	• Study of photochemical reactions of nitro compounds by quantum chemistry methods. • Application of quantum chemistry to study potential energy surfaces of molecules in excited states.
 Research supervisor: Sergey V. Zelentsov, Doctor of Sciences (Chemistry) (Russia) (Lobachevsky State University of Nizhny Novgorod)	**Physical chemistry**
	Supervisor's research interests Quantum chemistry, photochemistry, plasma chemistry, potential energy surface, reaction mechanisms in the high energy chemistry, photolithography, photochemistry of nitro compounds, mathematical methods in chemistry.
	Research highlights • Knowledge of basic principles and methods of quantum chemistry. • Proficiency in the Python language. • Good command of English • Computer skills in Windows
	Supervisor's main publications *Total number of publications in journals in 2021-2025 indexed by Web of Science: 8* *Scopus: 8* *RSCI: 5* 1. S. V. Zelentsov, D. V. Ovsyannikov, A. Pyslaru, Photochemical Oxidation of Dimethyl Sulfide with Triplet Nitro Compounds, High Energy Chemistry, 2023, 57(4), 309-312. DOI:10.1134/S0018143923040161 2. Plekhovich, S.V. Zelentsov, Yu.V. Minasyan, and I.T. Grimova Modeling of the Reaction of Nitrobenzene with Olefins: Influence of Electron-Donating and Electron-Withdrawing Substituents, High Energy Chemistry, 2022, Vol. 56, No. 1, pp. 32–37. 3. Mochalov L., Logunov A., Prokhorov I., Sazanova T., Kudrin A., Yunin P., Zelentsov S.V., Letnianchik A., Starostin N.V., Boremann G., Vorotyntsev V. Plasma-Chemical Synthesis of Lead Sulphide Thin Films for Near-IR Photodetectors, Plasma Chemistry and Plasma Processing. No. 41. 2021. P. 493-506. 4. A.Alyeva, S. Ananicheva, M. Glyavin, A. N. Denisenko, S. V. Zelentsov, T. O. Krapivnitskaia, N. Yu. Peskov, A. A. Sachkova, Production of Low-Molecular-Weight Organic Components by the Microwave Pyrolysis of Peat, High Energy Chemistry, 2023, 57(4), 384-389. DOI:10.1134/S0018143923040033 5. Krapivnitskaya T.O., Ananicheva S.A., Alyeva A.B., Denisenko A.N., Peskov N.Yu., Glyavin M.Yu., Vikharev A.A., Sachkova

	A.A., Zelentsov S.V., Shunailov N.S. Theoretical and experimental demonstration of advantages of microwave peat processing in comparison with thermal exposure during pyrolysis // Processes. № 1. V. 12. 2024. P. 92.
	Results of intellectual activity Sum – more than 30. - The use of an atomic force microscope and photolithography to obtain resistive masks with a combination of very different sizes of pattern elements. A.V. Kruglov, V.E. Kotomina, S.V. Zelentsov, I.N. Antonov, O.N. Gorshkov, A method of manufacturing a resistive mask with an extended range of image resolution, Pat. RF № 2 610 782. Publ. 02/15/2017. Bull. Number 5. - Modification of the composition of the photoresist based on cresol-formaldehyde resin and a derivative of orthonaphthoquinone diazide in order to increase the maximum temperature at which it is possible to apply an “exploding” layer. A.F. Lambakshev, V.E. Kotomina, S.V. Zelentsov, I. N. Antonov, O. N. Gorshkov, Method of explosive photolithography, Pat. RF number 2610843. Publ. 02.16.2017. - V.I. Lebedev, V.E. Kotomina, S.V. Zelentsov, E.S. Leonov, The method of forming a photoresist mask of a positive type (options), Pat. RF № 2552461. Publ. 06.10.2015. Bull. No. 16, etc.