

Portfolio of potential scientific advisors of participants of the international Olympiad Open Doors: Russian Scholarship Project of the Association "Global Universities" on the track of postgraduate studies in 2022-2023.

The university	NSU
English proficiency	Free
The direction of training, on which will be accepted a graduate student	Chemical sciences (Inorganic chemistry)
The code of the direction of training, for which a graduate student will be accepted	04.06.01
List of research projects of a potential supervisor (participation / leadership)	Synthesis of ruthenium nitrosyl complexes with trans NO-Ru-F coordinate and investigation of photo-induced metastable linkage isomers. RFBR – head of the project. Alloy nanoparticles and structures of unmixable metals: synthetic strategy and catalytical properties. RSF – participant.
List of possible research topics	1. Photo-induced isomerization of ruthenium nitrosyl complexes with trans coordinate NO-Ru-F. 2. Metal-organic polymers with pseudo-organic linkers on the base of ruthenium nitrosyl complexes.
	Synthesis and properties of ruthenium nitrosyl complexes.
	Supervisor's research interests: ruthenium, platinum metals,
Research supervisor: Gennadiy A. Kostin, Doctor of chemical sciences.	Supervisor's specific requirements: <ul style="list-style-type: none"> • DFT calculations in ADF • Basics of spectral techniques – NMR, IR, mass- spectroscopy.

- Inorganic and coordination chemistry.

Supervisor's main publications: 22 papers in the last 5 years.

- *Kostin, G.A., Filatov, E.Y., Pischur, D.P., Kuratieva, N.V., Korenev, S.V. Phase transformations in a double complex salt of the ruthenium nitrosyl anion and tetraamine-palladium cation (2020) CrystEngComm, 22 (21), pp. 3692-3700.*
- *2. Mikhailov, A.A., Khantakova, D.V., Nichiporenko, V.A., Glebov, E.M., Grivin, V.P., Plyusnin, V.F., Yanshole, V.V., Petrova, D.V., Kostin, G.A., Grin, I.R. Photoinduced inhibition of DNA repair enzymes and the possible mechanism of photochemical transformations of the ruthenium nitrosyl complex [RuNO(β -Pic)₂(NO₂)₂OH] (2019) Metallomics, 11 (12), pp. 1999- 2009.*
- *3. Mikhailov, A.A., Vorobyev, V.A., Nadolinny, V.A., Patrushev, Y.V., Yudina, Y.S., Kostin, G.A. Primary and secondary photochemical transformations of biologically active precursor - Nitro-Nitrosyl ruthenium complex (2019) Journal of Photochemistry and Photobiology A: Chemistry, 373, pp. 37-44.*
- *4. Mikhailov, A.A., Wenger, E., Kostin, G.A., Schaniel, D. Room-Temperature Photogeneration of Nitrosyl Linkage Isomers in Ruthenium Nitrosyl Complexes (2019) Chemistry - A European Journal, 25 (31), pp. 7569-7574.*
- *5. Vorobyev, V., Kostin, G.A., Kuratieva, N.V., Emelyanov, V.A. Two oxygen-coordinated metastable Ru-ON states for ruthenium mononitrosyl complex (2016) Inorganic Chemistry, 55 (18), pp. 9158-9161.*