

**Список студентов, привлеченных к работе по грантам РФФ и РФФИ под руководством
Толстого Петра Михайловича**

ID Pure	Название НИР	ФИО обучающегося	Список публикаций
9566100	«Спектральная диагностика невалентных взаимодействий» (РНФ, 2018-2020)	И.С. Гиба В.В. Муллоярова М.А. Костин А.С. Острась Д.О. Устимчук	<ol style="list-style-type: none"> 1. V.V. Mulloyarova, I.S. Giba, M.A. Kostin, G.S. Denisov, I.G. Shenderovich, P.M. Tolstoy, “Cyclic Trimers of Phosphinic Acids in Polar Aprotic Solvent: Symmetry, Chirality and H/D Isotope Effects on NMR Chemical Shifts”, <i>Phys. Chem. Chem. Phys.</i> 2018, <i>20</i>, 4901-4910. DOI: 10.1039/C7CP08130H. 2. I.S. Giba, V.V. Mulloyarova, G.S. Denisov, P.M. Tolstoy, “Influence of Hydrogen Bonds in 1:1 Complexes of Phosphinic Acids with Substituted Pyridines on ¹H and ³¹P NMR Chemical Shifts”, <i>J. Phys. Chem. A</i> 2019, <i>123</i>, 2252-2260. DOI: 10.1021/acs.jpca.9b00625. 3. E.Yu. Tupikina, M. Sigalov, I.G. Shenderovich, V.V. Mulloyarova, G.S. Denisov, P.M. Tolstoy, “Correlations of NHN hydrogen bond energy with geometry and ¹H NMR chemical shift difference of NH protons for aniline complexes”, <i>J. Chem. Phys.</i> 2019, <i>150</i>, 114305. DOI: 10.1063/1.5090180. 4. V.V. Mulloyarova, I.S. Giba, G.S. Denisov, P.M. Tolstoy, “Conformational mobility and proton transfer in hydrogen-bonded dimers and trimers of phosphinic and phosphoric acids”, <i>J. Phys. Chem A</i> 2019, <i>123</i>, 6761-6771. DOI: 10.1021/acs.jpca.9b05184. 5. A.S. Ostras*, D.M. Ivanov, A.S. Novikov, P.M. Tolstoy, “Phosphine oxides as spectroscopic halogen bond descriptors: IR and NMR correlations with interatomic distances and complexation energy”, <i>Molecules</i> 2020, <i>25</i>, 1406. DOI: 10.3390/molecules25061406. 6. V.V. Mulloyarova, D.O. Ustimchuk, A. Filarowski, P.M. Tolstoy, «H/D Isotope Effects on ¹H NMR Chemical Shifts in Cyclic Heterodimers and Heterotrimers of Phosphinic and Phosphoric Acids», <i>Molecules</i> 2020, <i>25</i>, 1907. DOI: 10.3390/molecules25081907.
71836823	«Спектральная диагностика невалентных взаимодействий» (РНФ, 2021-2022)	И.С. Гиба М.А. Костин Э.Р. Чакалов	<ol style="list-style-type: none"> 1. I.S. Giba, P.M. Tolstoy, “Self-assembly of tetrahedral hydrogen-bonded cage tetramers of phosphonic acid”, <i>Symmetry</i> 2021, <i>13</i>, 258. DOI: 10.3390/sym13020258. 2. M.A. Kostin, S.A. Pylaeva, P.M. Tolstoy, “Phosphine oxides as NMR and IR spectroscopic probes for the estimation of the geometry and energy of hydrogen bonds: PO...H-A hydrogen bonds”, <i>Phys. Chem. Chem. Phys.</i> 2022, <i>24</i>, 7121-7133. DOI: 10.1039/D1CP05939D. 3. I.S. Giba, P.M. Tolstoy, V.V. Mulloyarova, “Phosphonic acid anion and acid dimer dianion stabilized by proton transfer in OHN hydrogen bonds – models of structural motifs in blend polymer membranes”, <i>Phys. Chem. Chem. Phys.</i> 2022, <i>24</i>, 11362-11369. DOI: 10.1039/D2CP00551D. 4. E.R. Chakalov, E.Yu. Tupikina, E.V. Bartashevich, D.M. Ivanov, P.M. Tolstoy, “The distance between minima of electron density and electrostatic potential as a measure of halogen bond strength”, <i>Molecules</i> 2022, <i>27</i>, 4848. DOI: 10.3390/molecules27154848.

50666901	«Влияние окружения» (РФФИ, 2020-2022)	А.М. Пузык А.А. Ефимова А.С. Якубенко В.О. Коростелев	<ol style="list-style-type: none"> 1. V.V. Mulloyarova, A.M. Puzyk, A.A. Efimova, A.S. Antonov, R.A. Evarestov, I.S. Aliyarova, R.E. Asfin, P.M. Tolstoy, “Solid-State and Solution-State Self-Association of Dimethylarsinic Acid: IR, NMR and Theoretical Study”, <i>J. Mol. Struct.</i> 2021, <i>1234</i>, 130176. DOI: 10.1016/j.molstruc.2021.130176. 2. A. Yakubenko, A. Puzyk, V. Korostelev, V. Mulloyarova, E. Tupikina, P. Tolstoy, A. Antonov, “Self-association of diphenylpnictogenic acids in solution and solid state: covalent vs. hydrogen bonding”, <i>Phys. Chem. Chem. Phys.</i> 2022, <i>24</i>, 7882-7892. DOI: 10.1039/D2CP00286H.
105280079	«Зарядовая кооперативность» (РНФ, 2023-2025)	Э.Р. Чакалов М.А. Костин О. Алкхудер Д.В. Крутин А.А. Титова	<ol style="list-style-type: none"> 1. E.R. Chakalov, R.P. Shekurov, V.A. Miluykov, P.M. Tolstoy, “Evidence of extremely short hydrogen bond in homoconjugated anion of ferrocene-1,1'-diyl-bisphosphinic acid: sign change of H/D isotope effect on the ³¹P NMR chemical shift”, <i>Phys. Chem. Chem. Phys.</i> 2023, <i>submitted</i>, <i>1st round of corrections</i>. 2. M.A. Kostin, O. Alkhuder, R.E. Asfin, P.M. Tolstoy, “Hydrogen bond cooperativity in 2:1 complexes of phosphine oxide with phenols”, <i>in preparation</i>. 3. Д.В. Крутин и А.А. Титова – официальные исполнители, но их публикации еще не готовы.