

Сведения об оппонентах:

1) Лисичкин Георгий Васильевич, доктор химических наук (02.00.04 «Физическая химия»), профессор, , заведующий лаборатории химии поверхности, главный научный сотрудник кафедры физической химии. Химический факультет МГУ имени М.В. Ломоносова.

Публикации:

1. Ehrlich, H.; Shcherba, T.; Zhilenko, M.; Lisichkin, G. Peculiarities of Formation and Luminescence of ZnS Nanoparticles Modified with Amino Acids. *Mater. Lett.* **2011**, *65* (1), 107–109.
2. Fedotcheva, T. A.; Olenin, A. Y.; Starostin, K. M.; Lisichkin, G. V.; Banin, V. V.; Shimanovskii, N. L. Prospects for Using Gold, Silver, and Iron Oxide Nanoparticles for Increasing the Efficacy of Chemotherapy. *Pharm. Chem. J.* **2015**, *49* (4), 220–230.
3. Mingalev, P. G.; Kolyagin, Y. G.; Lisichkin, G. V. Reactivity of a Phosphonate Layer Grafted onto a Surface of Dispersed Hydroxyapatite. *Colloid J.* **2012**, *74* (4), 495–501.
4. Rodina, E. V.; Valueva, A. V.; Yakovlev, R. Y.; Vorobyeva, N. N.; Kulakova, I. I.; Lisichkin, G. V.; Leonidov, N. B. Immobilization of Inorganic Pyrophosphatase on Nanodiamond Particles Retaining Its High Enzymatic Activity. *Biointerphases* **2015**, *10* (4), 41005.
5. Safronikhin, A.; Ehrlich, H.; Shcherba, T.; Kuzmina, N.; Lisichkin, G. Formation of Complexes on the Surface of Nanosized Europium Fluoride. *Colloids Surfaces A Physicochem. Eng. Asp.* **2011**, *377* (1–3), 367–373.
6. Safronikhin, A.; Ehrlich, H.; Kuzmina, N.; Lisichkin, G. The Effect of Surface Modification on Eu³⁺ Luminescence in EuF₃ Nanoparticles. *Appl. Surf. Sci.* **2014**, *307*, 482–488.
7. Safronikhin, A. V.; Ehrlich, H. V.; Lisichkin, G. V. Chemical Modification of the Surface of Highly Dispersed Metal Salt Crystals. *Prot. Met. Phys. Chem. Surfaces* **2014**, *50* (5), 578–586.
8. Safronikhin, A.; Ehrlich, H.; Lisichkin, G. Double-Jet Precipitation Synthesis of CaF₂ Nanoparticles: The Effect of Temperature, Solvent, and Stabilizer on Size and Morphology. *J. Alloys Compd.* **2017**, *694*, 1182–1188.

2) Стужин Павел Анатольевич, доктор химических наук (02.00.03 «Органическая химия» и 02.00.04 «Физическая химия»), профессор кафедры органической химии/Ивановский Государственный Химико-технологический Университет,.

Публикации:

1. Donzello, M. P.; Ercolani, C.; Novakova, V.; Zimcik, P.; Stuzhin, P. A. Tetrapyrizinoporphyrazines and Their Metal Derivatives. Part I: Synthesis and Basic Structural Information. *Coord. Chem. Rev.* **2016**, *309*, 107–179.
2. Hamdoush, M.; Ivanova, S. S.; Koifman, O. I.; Kos'kina, M.; Pakhomov, G. L.; Stuzhin, P. A. Synthesis, Spectral and Electrochemical Study of Perchlorinated Tetrapyrizinoporphyrazine and Its Al(III), Ga(III) and In(III) Complexes. *Inorganica Chim. Acta* **2016**, *444*, 81–86.
3. Ivanova, S. S.; Stuzhin, P. A. Indium(III) Complexes of Octaphenylporphyrzine: Effect of Halide Coordination on the Basic Properties and Stability in Acid Media. *J. Porphyr. Phthalocyanines* **2011**, *15* (11-12), 1299–1309.
4. Ivanova, S. S.; Moryganova, Y.; Hamdoush, M.; Koifman, O. I.; Sal'nikov, D. S.; Stuzhin, P. A. Phosphorus(V) Tetrapyrzinocorrolazines — First Corrolazine Derivatives with Fused Heterocyclic Rings. *J. Porphyr. Phthalocyanines* **2014**, *18* (10-11), 875–883.
5. Knyukshto, V. N.; Volkovich, D. I.; Gladkov, L. L.; Kuzmitsky, V. a.; Ul-Haque, A.; Popkova, I. A.; Stuzhin, P. A.; Solovyov, K. N. Phenyl Substituted Mg Porphyrzines: The Effect of Annulation of a Chalcogen-Containing Heterocycle on the Spectral-Luminescent Properties. *Opt. Spectrosc.* **2012**, *113* (4), 359–375.
6. Stuzhin, P. A.; Goryachev, M. Y.; Ivanova, S. S.; Nazarova, A.; Pimkov, I.; Koifman, O. I. Perfluorinated Porphyrzines 1: Synthesis and UV-Vis Spectral Study of Perfluorinated Octaphenylporphyrzine and Its indium(III) Complex, [MPA(F₅Ph)₈](M = 2H, InIII(OH)). *J. Porphyr. Phthalocyanines* **2013**, *17* (08-09), 905–912.
7. Stuzhin, P. A.; Ivanova, S. S.; Koifman, O. I.; Petrov, O. A.; Nazarova, A. On the Synthesis and Properties of the Mg(II) Complex of Perfluorinated Octaphenylporphyrzine. *Inorg. Chem. Commun.* **2014**, *49*, 72–75.
8. Svec, J.; Zimcik, P.; Novakova, L.; Rakitin, O. A.; Amelichev, S. A.; Stuzhin, P. A.; Novakova, V. 1,2,5-Chalcogenadiazole-Annulated Tripyrazinoporphyrazines: Synthesis, Spectral Characteristics, and Influence of the Heavy Atom Effect on Their Photophysical Properties. *European J. Org. Chem.* **2015**, *2015* (3), 596–604.

Сведения о ведущей организации:

Федеральное государственное бюджетное учреждение науки Институт органической и физической химии имени А. Е. Арбузова Казанского научного центра Российской академии наук

Сокращенное название

ИОФХ им. А.Е. Арбузова КазНЦ РАН

Тел.: 8(843) 273-93-65

Факс: 8(843) 273-18-72, 273-22-53

Россия, Республика Татарстан, 420088, г. Казань, ул. Академика Арбузова, дом 8

[e-mail: arbuzov@iopc.ru](mailto:arbuzov@iopc.ru)

Директор Синяшин Олег Герольдович, академик РАН, д.х.н., профессор.

тел. +7 (843) 273-93-65

факс: +7 (843) 273-18-72

e-mail: oleg@iopc.ru

Публикации:

1. Khrizanforov, M. N.; Strekalova, S. O.; Grinenko, V. V.; Khrizanforova, V. V.; Gryaznova, T. V.; Budnikova, Y. H. Various Ways of C-P Bonds Formation via Selective Electrochemical Phosphorylation of Aromatic C-H Bonds. *Phosphorus. Sulfur. Silicon Relat. Elem.* **2016**, *191* (11–12), 1491–1493.
2. Khrizanforova, V. V.; Musina, E. I.; Khrizanforov, M. N.; Gerasimova, T. P.; Katsyuba, S. A.; Spiridonova, Y. S.; Islamov, D. R.; Kataeva, O. N.; Karasik, A. A.; Sinyashin, O. G.; Budnikova, Y. H. Unexpected Ligand Effect on the Catalytic Reaction Rate Acceleration for Hydrogen Production Using Biomimetic Nickel Electrocatalysts with 1,5-Diaza-3,7-Diphosphaocyclooctanes. *J. Organomet. Chem.* **2015**, *789–790*, 14–21.
3. Kornev, A. N.; Sushev, V. V.; Panova, Y. S.; Lukoyanova, O. V.; Ketkov, S. Y.; Baranov, E. V.; Fukin, G. K.; Lopatin, M. A.; Budnikova, Y. G.; Abakumov, G. A. N,N'-Fused Bisphosphole: Heteroaromatic Molecule with Two-Coordinate and Formally Divalent Phosphorus. Synthesis, Electronic Structure, and Chemical Properties. *Inorg. Chem.* **2014**, *53* (6), 3243–3252.
4. Mikhaylov, D. Y.; Gryaznova, T. V.; Dudkina, Y. B.; Polyancev, F. M.; Latypov, S. K.; Sinyashin, O. G.; Budnikova, Y. H. Novel Electrochemical Pathway to Fluoroalkyl Phosphines and Phosphine Oxides. *J. Fluor. Chem.* **2013**, *153*, 178–182.
5. Musina, E. I.; Khrizanforova, V. V.; Strel'nik, I. D.; Valitov, M. I.; Spiridonova, Y. S.; Krivolapov, D. B.; Litvinov, I. A.; Kadirov, M. K.; Lönnecke, P.; Hey-Hawkins, E.; Budnikova, Y. H.; Karasik, A. A.; Sinyashin, O. G. New Functional Cyclic Aminomethylphosphine Ligands for the Construction of Catalysts for Electrochemical Hydrogen Transformations. *Chem. - A Eur. J.* **2014**, *20* (11), 3169–3182.