Albina Mikhraliieva

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Last updated: 12/01/2026

PhD in Chemistry (2020) - Pontifical Catholic University of Rio de Janeiro (Department of Chemistry, Brazil).Master's degree (2014) and Bachelor's degree in Chemistry (2013) - Kharkiv National University V.N. Karazin (Department of Chemistry, Ukraine).Master in Administrative Management (2015) - Kharkiv National University V.N. Karazin (Department of Economics and Management, Ukraine).He has experience in the area of Chemistry with an emphasis on Analytical Chemistry, Physical Chemistry and Material Chemistry.Topics of interest: preparation of carbon nanomaterials such as graphene oxide, porous graphene oxide, graphene oxide quantum nanodots. Surface modification of silica gel using organosilanes by the "surface mount" approach. Development of adsorbents for heavy metals, dyes and PAHs. Experience and knowledge in analyzing liquid and solid samples by fluorescence spectroscopy, cyclic voltammetry/DPV, SWV, UV-Vis, XPS, FTIR, SEM, TEM, AFM, ICP-OES, HPLC-FLD, GC-MS. **(Text informed by the author)**

Personal Information

Name

Albina Mikhraliieva

Bibliographic Citation

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Nationality

Ucrânia

Address

Professional Address

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12618 - Tallinn, - Estônia
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Homepage URL: https://taltech.ee/en

Formal Education/Degree

2015 - 2020

Ph.D. in Química.
Pontifícia Universidade Católica do Rio de Janeiro, PUC-Rio, Brasil. , Year of degree: 2020.
Advisor: Volodymyr Zaitsev.
Scholarship holder of: Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ,

FAPERJ, Brasil.
Major Area: Exact and Earth Sciences
Major Area: Exact and Earth Sciences / Area: Química / Subarea: Química Analítica.
Major Area: Exact and Earth Sciences / Area: Química / Subarea: Química de matérias híbridos.

2013 - 2015

Master in Gestão Administrativa.
iNV. N. Karazin Kharkiv National University, KHARKOV, Ucrânia. Year of degree: 2015.
Advisor: Vladimir B. Rodchenko.

2013 - 2014

Master in Química.
iNV. N. Karazin Kharkiv National University, KHARKOV, Ucrânia. Year of degree: 2014.
Advisor: Yuriy V. Kholin.
Scholarship holder of: KhNU, KHNU, Ucrânia.

2009 - 2013

Graduation in Química.
iNV. N. Karazin Kharkiv National University, KHARKOV, Ucrânia.
Scholarship holder of: KhNU, KHNU, Ucrânia.

Postdoctorate

2021 - 2023

Postdoctorate.
Universidade Federal Fluminense, UFF, Brasil.
Scholarship holder of: Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ, FAPERJ, Brasil.

2020 - 2021

Postdoctorate.
Pontifícia Universidade Católica do Rio de Janeiro, PUC-Rio, Brasil.

Complementary Education

2024 - 2024

e Basic course in Transmission Electron Microscopy (TEM). (Credit hours: 6h).
Centro Nacional de Pesquisa em Energia e Materiais, CNPEM, Brasil.

2022 - 2022

Segurança em Laboratórios: Aspectos Ambientais e Ocupacionais. (Credit hours: 60h).
Universidade Federal de São Paulo, UNIFESP, Brasil.

2022 - 2022

Treinamento. (Credit hours: 2h).
Buchi, BUCHI, Brasil.

2021 - 2021

Applications of magnetic iron oxide nanoparticles for cancer hyperthermia a. (Credit hours: 3h).
Universidade Federal de Goiás, UFG, Brasil.

2021 - 2021

Curso de Introdução ? Nanotecnologia & Nanotoxicologia. (Credit hours: 8h).
Centro Nacional de Pesquisa em Energia e Materiais, CNPEM, Brasil.

2021 - 2021

Magnetic Particle Imaging: Tracer Design and Applications. (Credit hours: 3h).
Universidade Federal de Goiás, UFG, Brasil.

2021 - 2021

Combining photothermal nanoparticles with immunotherapies for cancer. (Credit hours: 3h).
Universidade Federal de Goiás, UFG, Brasil.

2021 - 2021

Escola Ricardo Rodrigues de Luz Síncrotron (ER2LS). (Credit hours: 72h).
Centro Nacional de Pesquisa em Energia e Materiais, CNPEM, Brasil.

2018 - 2018

Técnicas Avançadas de Caracterização de Materiais: microscopia MEV. (Credit hours: 5h).
Universidade Federal do Rio de Janeiro, UFRJ, Brasil.

Professional Experience

Pontifícia Universidade Católica do Rio de Janeiro, PUC-Rio, Brasil.

Contract

2025 - 2025

Type of contract: Bolsista, Functional Placement: Pesquisador de pós-doutorado, Credit Hours: 40

Contract

2023 - 2025

Type of contract: Bolsista, Functional Placement: TCT5-FAPERJ, Credit Hours: 40, Regime: Exclusive Dedication.

Contract

2021 - 2023

Type of contract: Bolsista, Functional Placement: Pós-doutorado, Credit Hours: 40

Contract

2020 - 2021

Type of contract: Bolsista, Functional Placement: Pos-Doutorado, Credit Hours: 40

Contract

2018 - 2020

Type of contract: Bolsista, Functional Placement: Estudante de Doutorado, Credit Hours: 40, Regime: Exclusive Dedication.

Contract

2015 - 2018

Type of contract: Bolsista, Functional Placement: Estudante de Doutorado, Credit Hours: 40, Regime: Exclusive Dedication.

Activities

03/2019 - 03/2020

Teaching, Química, Degree: Pos-Graduation

Disciplines Taught
QUI 2222 Laboratório de Química Avançada

Universidade Federal de Santa Catarina, UFSC, Brasil.

Contract

2022 - 2022

Type of contract: Estagio e Pesquisa Acadêmica, Functional Placement: Pesquisador visitante, Credit Hours: 40

Activities

11/2022 - Atual

Trainee Activities , UNIVERSIDADE FEDERAL DE SANTA CATARINA - UFSC.

Trainee Activities
Treinamento em eletroquímica utilizando potenciostato PalmSens.

12/2022 - 12/2022

Teaching, Química, Degree: Graduation

Disciplines Taught
Foi ministrada aula prática de Voltametria aos alunos da 7a fase do curso de graduação em Química da UFSC, em um período de 2h aula, semestre 2022/2.

iNV. N. Karazin Kharkiv National University, KHARKOV, Ucrânia.

Contract

2021 - 2021

Type of contract: Estágio, Functional Placement: Scientific training, Credit Hours: 40

Contract

2014 - 2015

Type of contract: , Functional Placement: Pesquisador júnior no Dep. de Química

Contract

2013 - 2014

Type of contract: Government Employee, Functional Placement: Auxiliar de Laboratório no Dep. de Química

Centro Nacional de Pesquisa em Energia e Materiais, CNPEM, Brasil.

Contract

2017 - 2017

Type of contract: , Functional Placement:

Tallinn University of Technology, TALTECH, Estônia.

Contract

2025 - Present

Type of contract: Bolsista, Functional Placement: Pesquisador de pós-doutorado

Research projects

2021 - Current

DESENVOLVIMENTO DE MATERIAIS ADSORVENTES PARA RECUPERAÇÃO SELETIVA DE CONTAMINANTES DE HIDROCARBONETOS AROMÁTICOS POLICÍCLICOS E REMEDIAÇÃO DE ÁREAS CONTAMINADAS POR ÓLEO

Description: Edital FAPERJ PROGRAMA DE APOIO A ?REDES DE MONITORAMENTO DE DERRAMAMENTO DE ÓLEOS EM AMBIENTES MARINHOS: PREVENÇÃO E CONTROLE? 06/2020 Os hidrocarbonetos policíclicos aromáticos (PAHs) são poluentes orgânicos persistentes. Devido à sua natureza lipofílica, os PAHs podem contaminar facilmente óleos, mamíferos e organismos marinhos. Os adsorventes hidrofóbicos são amplamente usados para descontaminar fontes de água com PAHs. Esse efeito pode levar a um novo tipo de adsorvente seletivo de PAHs, que é capaz de descontaminar soluções lipídicas. O adsorvente também pode ser usado para simplificar os procedimentos analíticos, para a determinação de PAHs em objetos contendo lipídios, como óleos e organismos marinhos. Um conjunto de materiais híbridos organo-minerais será obtido por imobilização covalente de nanomateriais de carbono em carreadores inorgânicos. Dois tipos principais de nanomateriais de carbono serão investigados: nanopartículas de carbono (CNDs) e pontos quânticos de óxido de grafeno (GOQDs). As partículas serão imobilizadas em suportes como sílica gel, bentonita (BNT), diatomita (DTM) e carreadores magnéticos. Adsorventes magnéticos e à base de SiO2 serão explorados para análise química de PAHs em soluções lipídicas. Adsorventes à base de BNT e DTM para purificação industrial de óleos, combustíveis e outras soluções lipídicas também serão estudadas. É importante que tanto a bentonita quanto a diatomita são minerais não tóxicos, bem como é nanopartículas de carbono, que podem ser obtidos a partir de resíduos alimentare.
Situation: In progress; Nature: Research.

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator.

2020 - 2022

Tecidos Hidrofóbicos e Ativos para substituição do TNT Hospitalar

Description: Edital: AÇÃO EMERGENCIAL COVID-19 - Chamada B - Apoio a Projetos já concedidos em Editais da FAPERJ..
Situation: Completed; Nature: Research.
Participant students: Graduation: (2) / Academic master's degree: (1) / Doctorate: (2) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Member / Carlos Alberto Achete - Coordinator / Braulio Soares Archanjo - Member / Joyce Rodrigues de Araujo - Member / Maíra do Prado - Member / Renata Antoun Simão - Member / GISELE BIRMAN TONIETTO - Member.
Financier(s): Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ - Grant.

2019 - Current

PQ-2018 Compósitos com nanodiamantes e quantum pontos de carbono como novos candidatos para tratamento fotodinâmico e psicodinâmico invasivo de tumores e portadores de entrega de drogas

Description: Nanopartículas têm sido utilizados em vastas aplicações, desde o armazenamento de energia até a biotecnologia. No entanto, sua aplicação biotecnológica é bastante limitada. Devido à eventual citotoxicidade e baixa estabilidade coloidal, a importância do desenvolvimento de novas nanopartículas é geralmente reconhecida. Entre estas partículas, as estruturas baseadas em carbono chamam a atenção de diversos grupos de pesquisas devido à biocompatibilidade, alta área de superfície e estabilidade. Entre eles, os nanodiamantes (NDs) e pontos quânticos de carbono (ou óxido de grafeno) (GOQDs) são reconhecidos como uns novos candidatos a aplicações nanobiotecnológicas. Entre as estratégias não penetrantes do tratamento antineoplásico, as terapias fotodinâmica (PDT) e fototérmica (PTT) são consideradas as mais eficazes para o futuro. Até agora, o desenvolvimento de PDT e PTT é limitado pela capacidade da penetração da luz no tecido. Esta pesquisa está focada na elaboração e investigação de novos nanomateriais híbridos que podem ser usados na terapia invasiva estabelecida mais recentemente, com base no tratamento ultrassonográfico (Sonodinâmica) e de raios-X moles (Fotodinâmica) do câncer. Duas abordagens relacionadas serão investigadas. Um enfocará a preparação de nanocompósitos de NDs/TiO2 com GOQDs imobilizados (NDs/TiO2@GONDs). O outro é nanocompósito poroso à base de sílica com nanocristais de TiO2 e GOQDs imobilizados (SiO2/TiO2@GOQDs). A ideia do projeto é baseada na capacidade do TiO2 de produzir espécies bioativas sob tratamento com ultrassom. A integração de TiO2 em nanocompósitos pode melhorar a estabilidade coloidal (NDs), estrutura cristalina necessária (SiO2) e biocompatibilidade (GOQDs, NDs); garantir alta área de superfície e nanotamanho de partícula (SiO2, NDS), fornece fotoluminescência das partículas (GOQDs). Adicionalmente, a imobilização covalente de foto-sensibilizadores e componentes bioativos na superfície de nanocompósitos via linker foto-clivável é planejada para garantir sua liberação controlada..
Situation: In progress; Nature: Research.
Participant students: Graduation: (1) / Doctorate: (2) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator / MYKHAILO NAZARKOVSKYI - Member.
Financier(s): Conselho Nacional de Desenvolvimento Científico e Tecnológico - Scholarship.

2019 - Current

Universal 2018 Nanodiamantes com pontos quânticos de carbono imobilizados, como novos nanomateriais para theranostics

Description: Entre as aplicações mais promissoras de nanopartículas estão a medicina e a biotecnologia. Nessas áreas, os nanomateriais têm sido usados para administração demedicamentos, terapia fotodinâmica e fototérmica, para teranóstica. Até hoje, os nanomateriais mais utilizados para aplicação biomédica são: metais (Au, Ag, Pt), óxidos metálicos (Si02, Ti02) e materiais à base de carbono (nanotubos de carbono, fulerenos, grafeno). No entanto, a aplicação biomédica de nanomateriais conhecidos é bastante limitada devido à eventual citotoxicidade e baixa estabilidade coloidal. Portanto, a importância do desenvolvimento de novas nanopaftículas é geralmente reconhecida. Entre os novos candidatos, as estruturas baseadas em carbono atraem muita atenção devido à sua

biocompatibilidade, alta área de superfície e estabilidade. Entre eles, anodiamonds (NDs) e quantum pontos de carbono (CQDs) são reconhecidos como uns novos candidatos a aplicações nanobiotecnológicas. A ideia da pesquisa é combinar propriedades atrativas de NDs para biotecnologia e medicina (baixa citotoxicidade, fácil metabolização, capacidade de pene r nas células e sair da célula sem danificar a membrana) com propriedades atrativas de CQDs para diagnóstico médico (forte e estável fotoluminescência). A combinação destes dois nanomateriais pode também dar um efeito sinérgico da estabilização dos objetos híbridos em solução fisiológica (devido à forte carboxilação da superfície dos CQDs que carregam negativamente as partículas em meios básicos). A imobilização dos CQDs na superfície de NDs também pode aumentar a área de perficie das partículas e sua capacidade de maior funcionalização química. Esta pesquisa está focada na elaboração e investigação de novos nanomateriais híbridos baseados em NDs, com CQDs covalentemente imobilizados (NDs@CQ)..
Situation: In progress; Nature: Research.
Participant students: Graduation: (1) / Academic master's degree: (1) / Doctorate: (2) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator / MYKHAILO NAZARKOVSKYI - Member.
Financier(s): Conselho Nacional de Desenvolvimento Científico e Tecnológico - Grant.

2019 - Current

Rede Fluminense para a Pesquisa e Desenvolvimento de Nanomateriais Nanobiosistemas

Description: Programa Redes de Pesquisa em Nanotecnologia no Estado do RJ. This proposal aims to create a strongly interconnected research network between six institutions (UFRJ, UFF, Inmetro, PUC, Fiocruz and LNCC) recognized for the quality of their researchers and students education, their quality scientific production and their vocation for interaction with the industrial environment. A number of teams from these institutions will pool their expertise and knowledge for the development of nanomaterials and nanobiosystems that have the potential for manufacturing nanodevices and nanoproducts in healthcare, for information storage and processing technologies and for clean energy generation and environmental preservation. Creativity resulting from the synergy between researchers working in Materials Science, Biological and Pharmaceutical Sciences, Physics, Chemistry, Medicine. Computational and Bioinformatics Modeling and various levels of experience (consolidated researchers, mid-career and promising young people) will undoubtedly allow the generation of frontier research with a high scientific-technological level. It is important to emphasize that, besides knowledge generation, our proposal has a strong vocation for innovation, since the laboratories of practically all teams involved have official programs to support the generation of companies and products. This project will also contribute to the consolidation of the new nanobiosystems graduate program that involves four institutions forming this network (UFRJ, INMETRO, LNCC and FIOCRUZ) and which aims to train qualified researchers able to propose sustainable solutions using nanoscience and nanotechnology for the challenges. current and future health and environmental issues that are critical for the country..
Situation: In progress; Nature: Research.
Participant students: Graduation: (1) / Academic

master's degree: (2) / Doctorate: (1) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Member / Carlos Alberto Achete - Coordinator.

2014 - 2019

ORGANO-MINERAL MULTIFUNCIONAL MATERIAIS PARA MICROEXTRAÇÃO EM FASE SÓLIDA E CROMATOGRAFIA

Description: Free radicals in the human body damage the cell membrane, causing many pathologies such as: atherosclerosis, diabetes, rheumatism, inflammation, diseases of the musculoskeletal system affect the eyes, causing pulmonary disease, premature aging, cancer. It is generally believed that the effective "hijackers" of free radicals are phenolic compounds containing aromatic ring associated with one or more OH ? groups, and particularly polyphenolic compounds class of phenolic acids, stilbenes, flavonoids, including anthocyanidins, flavanones, flavones, isoflavones, flavonols, flavanon. Most of these compounds are present in some fruits and herbs (including extracts and juices), honey. Recently it was demonstrated that in addition to antioxidant activity many of polyphenolic compounds poses immuno-stimulating, anti-viral, anti-inflammatory, anticarcinogenic, and even anti-aging activity. Because of different biological activity and toxicity of polyphenolic compounds, there is strong demand for identification and quantification of individual biologically active phenolic compounds in food and herbs. State-of-art analytical technic that used for such task is HPLC-MS. Because of low selectivity for such complex matrices HPLC-MS analysis, require adequate sample preparation. Until now no acceptable universal approach for sample, preparation is proposed. In the project new adsorbents for selective solid phase, extraction will be investigated. Selectivity of the proposed adsorbents towards polyphenolic compounds arises from: a) π-π interaction between analyte and immobilized ligand, b) strong chelating properties of phenolic compounds to some metal ion immobilized on organosilica surface, c) selective interaction of ? C=C- bond of analyte with immobilized Ag ions, and d) ion-pair interactions with immobilized surfactants. The project goal is to develop a technology (procedure) of natural product (such as fruits, herbs and extracts from them) analysis for identification and quantitative determination of polyphenolic compounds that combines UPLC-Q-TOF chromatographic technique with new procedures for sample preparation and particularly with solid-phase extraction of biologically active polyphenolic compounds on selective silica-based SPE cartridges.
Situation: Completed; Nature: Research.
Participant students: Academic master's degree: (2) Doctorate: (3) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator / MYKHAILO NAZARKOVSKYI - Member / Sergei Alekseev - Member / Kobylinska Natalia - Member / Olena Artiushenko - Member / Didukh Iryna - Member / Oleksandr Syrotchuk - Member / Andrii Moskalenko - Member / Eloah Pereira Avila - Member.
Financier(s): The European Union Control Association - Cooperation.

2014 - 2015

CNPq- PVE: Fabrication of hybrid SiC and nanodiamond particles with immobilised

photoreceptors and their bio-analytical application for controlled drug delivery

Description: Preparation of new nanoparticles having no or less cytotoxicity then known one is one of the major direction in development of novel systems for drug-delivery. Among carbon-based materials nanodiamond particles (NDs) have started to emerge as novel candidate for promising applications in the field of nano-biotechnology as imaging probes and drug carriers. NDs do not show the toxicity of other nanoparticles, notably gold, making them ideal nanoscale drug delivery platforms. Furthermore, NDs can exhibit intrinsic fluorescence from point defects making them candidates for biomedical imaging applications. It seems silicon carbide nanoparticles (nSiC) also possess low cytotoxicity and high fluorescence, as well as surface-modified silicon nanoparticles (nSi). Due to known surface chemistry, all these particles can be functionalised and thus hybrid organo-mineral carriers specific bio-analytical application and particularly for drug delivery can by developed. There are two important aspects in such application of nanoparticles: 1) selectivity to certain drug and 2) triggered drug release. The first aspects will be achieved by: a) covalent immobilisation of target drug on the carrier surface, b) non-covalent immobilisation of the drug due to its multi-valent interaction with surface immobilised long-chain surfactants such as Triton X100. Triggered drug release will be achieved by immobilisation of photoactive functional groups (such as o-nitrophenol derivatives) and because of high photoactivity of the selected particles. Model compounds such as: horse radish peroxidase (HRP), lectin and mannose (targeting of urinary E.coli infections), as well as target biologically-important compounds: insulin, cephalosporin and amphotericin B (tuberculosis), Doxorubicin and Paxlitaxel (as anticancer drug) will be studied in the project. It is important for the project realisation that the immobilisation of the drugs and their triggered release will be controlled by nanofluid UPLC-Q-Tof (from Waters) available at PUC-Rio.
Situation: Completed; Nature: Research.
Participant students: Graduation: (1) / Academic master's degree: (1) / Doctorate: (4) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator / MYKHAILO NAZARKOVSKYI - Member / Sergei Alekseev - Member / Olena Artiushenko - Member / RABAH BOUKHERROUB - Member / KOSTIANTYN TURCHENIUK - Member / Sabine SZUNERITS - Member / DMYTRO KORYTKO - Member / Eloah Pereira Avila - Member.
Financier(s): Conselho Nacional de Desenvolvimento Científico e Tecnológico - Scholarship.

Other Projects

2024 - Current

XPS analysis of doped graphene oxide quantum dots

Situation: In progress; Nature: Other.

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator.

2022 - Current

New adsorbents for selective recovery of polycyclic aromatic hydrocarbon contaminants in lipid samples

Description: XPS-20221071.
Situation: In progress; Nature: Other.

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator.

2019 - 2019

AFM-Carbon nanodots prepared in silica nanoreactor

Situation: Completed; Nature: Other.
Participant students: Graduation: (1) / Academic master's degree: (1) / Doctorate: (2) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator.
Financier(s): Centro Nacional de Pesquisa em Energia e Materiais - Cooperation.

2019 - 2019

XPS-Nanodiamonds with immobilized carbon quantum dots as new nanomaterials for theranostics

Description: We learn how to limit size of the carbon nanodots (CNDs) and so receive nanoparticles with less distribution in diameter. Such narrow-distributed CNDs can have excitation-independent light emission. To do so we prepare CNDs using mesoporous silica gel as nanoreactors. By changing size of the pores in silica matrix we suppose to change size of CNDs and so their luminescent properties. To increase affinity of the starting compounds for CNDs synthesis (commonly it is citric acid) we modified the silica surface with different amino-moieties (propyl-amine (N1), ethylenediamine (N2), diethylenetriamine (N3) groups. Thermochemical treatment will be used to produce CNDs. Finally solids SiO2-N(1-3)/CNDs will be studied with XPS to learn chemistry of the CNDs formation process. Secondly, individual CNDs will be washed out from matrix (H2O /solution of NaHCO3 /HF). CNDs can incorporate to the structure not only fragments of citric acid but immobilized molecules of amines N(1-3). This will change the CNDs affinity to silica and photoluminescent properties. Using different elution method, we expected separate N-containing CNDs from only C-containing and study their composition by high resolution C1s, N1s and O1s XPS. We expect to identify correlation between CNDs composition, size and optical properties...
Situation: Completed; Nature: Other.
Participant students: Graduation: (1) / Doctorate: (1) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator.
Financier(s): Centro Nacional de Pesquisa em Energia e Materiais - Cooperation.

2018 - 2018

HIGH RESOLUTION PHOTOELECTRON SPECTROSCOPY OF HYBRID ORGANO-MINERAL

COMPOSITE MATERIALS FOR ANTICANCER TREATMENT

Description: Investigation of materials that can generate Reactive Oxygen Species (ROS) under X-ray and/or ultrasound treatment: Immobilized on silica matrix nanocrystals of TiO2 doped with lanthanides. Porous structure of nanocomposite allows further immobilization of ROS promoters (methylene blue (MB), carbon quantum dots (CQDs). To identify immobilized organic fragments (MB, CQDs, immobilized ligands) and the processes that occurs during such interaction (radical oxidation) high resolution XPS (for light atoms) is needed...
Situation: Completed; Nature: Other.
Participant students: Graduation: (1) / Doctorate: (2) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Coordinator / JIANG KAI - Member.
Financier(s): Centro Nacional de Pesquisa em Energia e Materiais - Cooperation.

2018 - 2018

Photoluminescence Characterization of Lanthanide-Functionalized SiO2- or SiCnanoparticles

Description: Different Lanthanide complexes, such as beta-diketonates and carboxylates, will be functionalized on two types of nanostructured matrices: TiO2 and SiC. The photoluminescent properties of the resulting materials will be investigated..
Situation: Completed; Nature: Other.
Participant students: Graduation: (1) / Academic master's degree: (1) / Doctorate: (3) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Member / JIANG KAI - Coordinator / BIANCA ALMEIDA DA SILVA - Member / HELMUT ISAAC PADILLA CHAVARRIA - Member / Michael Nazarkovsky - Member / GABRIEL ALONSO FREITAS - Member.
Financier(s): Centro Nacional de Pesquisa em Energia e Materiais - Cooperation.

2017 - 2017

Photoluminescence Characterization of Lanthanide-Functionalized SiO2- or SiCnanoparticles

Description: Different Lanthanide complexes, such as beta-diketonates and carboxylates, will be functionalized on two types of nanostructured matrices: TiO2 and SiC. The photoluminescent properties of the resulting materials will be investigated..
Situation: Completed; Nature: Other.
Participant students: Doctorate: (3) .

Members: Albina Mikhraliieva - Member / Volodymyr Zaitsev - Member / JIANG KAI - Coordinator / HELMUT ISAAC PADILLA CHAVARRIA - Member / NAZARKOVSKY, MICHAEL - Member / Olena Artiushenko - Member / CÁSSIO CARDOSO SANTOS PEDROSO - Member.
Financier(s): Centro Nacional de Pesquisa em Energia e Materiais - Cooperation.

Scientific journal referee

2025 - Present

Journal: Methods and Applications in Fluorescence

2024 - Present

Journal: RSC Advances

2023 - Present

Journal: Biomedical Materials

2020 - Present

Journal: Nano express

2020 - Present

Journal: NANOTECHNOLOGY

Areas of Expertise

1.

Major Area: Exact and Earth Sciences / Área: Química.

Languages

Ucraniâno

Comprehends Well, Speaks Well, Reads Well, Writes Well.

Russo

Comprehends Well, Speaks Well, Reads Well, Writes Well.

Inglês

Comprehends Reasonably, Speaks Well, Reads Well, Writes Reasonably.

Português

Comprehends Well, Speaks Well, Reads Well, Writes Well.

Awards and Titles

2024

2º lugar na categoria melhor apresentação oral flash na VIII Jornada de Pós-Graduação e Pesquisa em Química, Departamento de Química da PUC-Rio.

2022

Membership of RSC, RSC.

2022

2° lugar na categoria melhor apresentação FLASH de trabalho na VI Jornada de Pós-Graduação e Pesquisa em Química - "Do natural ao sintético: A química está em tudo!, Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio).

2022

Premiado na sessão coordenada de Química de Materiais, XVIII Encontro Regional da SBQ-Rio.

2021

Outstanding Reviewer for Nano Express for 2020, IOP Publishing.

2020

IOP trusted reviewer, IOP Publishing.

2020

Certificate of Recognition from ACS, ACS Publications.

2019

Premiada nas sessões orais de SBQ Regional RJ 2019, XVII Encontro Regional da Sociedade Brasileira de Química - Regional Rio de Janeiro (XVIIERSBQ-Rio).

2017

Um dos melhores trabalhos da área de Físico-Química, I Jornada de Pós-Graduação e Pesquisa ? DQ PUC-Rio.

Scientific, Technological, Artistic and Cultural Production

Bibliographical Production

Citations

Web of Science

Total of articles: 14 Total of citations: 46 Date: 11/08/2024

Albina Mikhraliieva

SCOPUS

Total of articles: 9 Total of citations: 50 Date: 11/08/2024

Mikhraliieva, Albina

Google Scholar

Total of articles: 15 Total of citations: 95 Date: 09/01/2026

https://scholar.google.com.br/citations?user=PbwSao0AAAAJ&hl=pt-BR

Full articles published in journals

Sort by

Chronological Order

1.

LIMA, ADRIANO ROGÉRIO SILVA ; **MIKHRALIIEVA, ALBINA** ; VANONI, CAIO RAPHAEL ; NAZARKOVSKY, MICHAEL ; XING, YUTAO ; COUTO, MARCOS TADEU ; ZAITSEV, VOLODYMYR ; JOST, CRISTIANE LUISA . 2D-network of boron-functionalized N-doped graphene quantum dots for electrochemical sensing of dopamine. DIAMOND AND RELATED MATERIALS JCR, v. 146, p. 111259, 2024. **Citações:** WEB OF SCIENCE ℠ 4

2.

MIKHRALIIEVA, ALBINA; LIMA, ADRIANO R. S. ; JOST, CRISTIANE L. ; NAZARKOVSKY, MICHAEL ; XING, YUTAO ; ZAITSEV, VOLODYMYR . Mesoporous Nitrogen-Doped Holey Reduced Graphene Oxide: Preparation, Purification, and Application for Metal-Free Electrochemical Sensing of Dopamine. Small JCR, v. -, p. 2400650, 2024. **Citações:** WEB OF SCIENCE ℠ 10 | SCOPUS 5

3.

MIKHRALIIEVA, ALBINA; NAZARKOVSKY, MICHAEL ; QUEIROZ, RICARDO AUCÉLIO DE ; XING, YUTAO ; ZAITSEV, VOLODYMYR . Highly luminescent graphene core N-doped carbon nanodots prepared under spatial nanoconfinement. MATERIALS CHEMISTRY AND PHYSICS JCR, v. 307, p. 128151, 2023. **Citações:** WEB OF SCIENCE ℠ 1

4.

NAZARKOVSKY, MICHAEL ; **MIKHRALIIEVA, ALBINA** ; ACHETE, CARLOS A. ; ALVES, LUIZ ANASTACIO ; ARAUJO, JOYCE ; ARCHANJO, BRAULIO S. ; BARROS, JOSE JUNIOR FRANÇA DE ; CARDOSO, LIANA MONTEIRO DA FONSECA ; COUCEIRO, JOSE NELSON S. S. ; MARQUES, FERNANDA DAVI ; OLIVEIRA, BRUNO S. ; SOUZA, RAFAEL NASCIMENTO DIAS DE ; TEIXEIRA, AYLA JOSMA ; VASCONCELOS, THIAGO L. ; ZAITSEV, VLADIMIR . Rational design of large flat nitrogen-doped graphene oxide quantum dots with green-luminescence suitable for biomedical applications. RSC Advances JCR, v. 12, p. 14342-14355, 2022. **Citações:** WEB OF SCIENCE ℠ 10 | SCOPUS 9

5.

☆ **MIKHRALIIEVA, ALBINA**; TKACHENKO, OLEG ; FREIRE, RAPHAEL ; ZAITSEV, VOLODYMYR ; XING, YUTAO ; PANTELEIMONOV, ANTON ; STRØMME, MARIA ; BUDNYAK, TETYANA M. . Carbon Nanodots with Solvatochromic Photoluminescence for the Electrochemical Determination of Estrogenic Steroids. Acs Applied Nano Materials JCR, v. 5, p. 10962-10972, 2022. **Citações:** WEB OF SCIENCE ℠ 8 | SCOPUS 5

6.

☆ **MIKHRALIIEVA, A.**; GONCALVES, R. A. ; ZAITSEV, VLADIMIR . Mesoporous Silica with Covalently Immobilized Anthracene as Adsorbent for SPE Recovery of PAHs Pollutants from Highly Lipidic Solutions.

METHODS AND OBJECTS OF CHEMICAL ANALYSIS JCR, v. 16, p. 5-14, 2021. **Citações:** WEB OF SCIENCE ℠ 1

7.

MIKHRALIIEVA, ALBINA; ZAITSEV, VLADIMIR ; AUCÉLIO, RICARDO Q ; DA MOTTA, HENRIQUE B ; NAZARKOVSKY, MICHAEL . Benefit of porous silica nanoreactor in preparation of fluorescence carbon dots from citric acid. Nano Express JCR, v. 1, p. 010011, 2020. **Citações:** WEB OF SCIENCE ℠ 11 | SCOPUS 11

8.

MIKHRALIIEVA, ALBINA; ZAITSEV, VLADIMIR ; XING, YUTAO ; COELHO-JÚNIOR, HORÁCIO ; SOMMER, RUBEM LUÍS . Excitation-Independent Blue-Emitting Carbon Dots from Mesoporous Aminosilica Nanoreactor for Bioanalytical Application. Acs Applied Nano Materials JCR, v. 3, p. 3652-3664, 2020. **Citações:** WEB OF SCIENCE ℠ 22 | SCOPUS 23

9.

MIKHRALIIEVA, ALBINA; ZAITSEV, VLADIMIR ; TKACHENKO, O. ; NAZARKOVSKY, MICHAEL ; XING, YUTAO ; BENVENUTTI, E. . Graphene Oxide Quantum Dots Immobilized on Mesoporous Silica: preparation, characterization and electroanalytical application. RSC Advances JCR, v. 10, p. 31305-31315, 2020. **Citações:** WEB OF SCIENCE ℠ 15 | SCOPUS 13

10.

TKACHENKO, O.S. ; **'IKHRALIIEVA, '.'.** ; PANTELEIMONOV, '.V. ; SUKHOV, R.V. ; KHOLIN, YU.V. . Adsorption equilibria of anionic dyes eosin yellow and reactive blue 4 on amino-containing ormosils. Himia, Fizika ta Tehnologia Poverhni, v. 6, p. 504-519, 2015.

11.

TKACHENKO, O. ; KHRISTENKO, I. ; **MIKHRALIIEVA, A.** ; PANTELEIMONOV, A. ; KHOLIN, Y. . The influence of surfactant nature on the structural, morphological and sorption properties of ormosils with immobilized aminogroups. V. N. Karazin Kharkiv National University Bulletin. Chemical Series, v. 1085, p. 167-178, 2013.

Summary published in proceedings of conferences

1.

MIKHRALIIEVA, ALBINA; Lima, A. ; JOST, C. ; XING, YUTAO ; ZAITSEV, VOLODYMYR . , 2023, Ilhéus-BA. Anais do 10º Congresso Brasileiro de Carbono. Ilhéus: Associação Brasileira de Carbono ? ABCarb, 2023. v. 1. p. 107.

2.

MIKHRALIIEVA, ALBINA; CARVALHO, N. ; GUTIERREZ-BELENO, L. ; AUCELIO, R. ; MASSONE, C. ; ZAITSEV, V. . , 2023, Geneva. Abstract Book, 2023. p. 362.

3.

NAZARKOVSKY, MICHAEL ; **MIKHRALIIEVA, ALBINA** ; , ZAITSEV, VOLODYMYR ; VASCONCELOS, THIAGO L. ; BARROS, JOSÉ JÚNIOR FRANÇA DE . , 2022, Maceió. Anais 45a Reunião Anual da Sociedade Brasileira de Química: Química para o Desenvolvimento Sustentável e Soberano. Maceió: Fernando de Carvaljo de Silva, 2022. p. 845.

4.

MIKHRALIIEVA, A.; KAI, J. ; ZAITSEV, V. . , 2019, Rio de Janeiro. Livro de Resumos ? XVII Encontro Regional da SBQ-Rio - 1ª Edição. Rio de Janeiro: Sabrina Baptista Ferreira (Secretária Regional da SBQ-Rio (IQ-UFRJ)) David Rodrigues da Rocha (Vice-, 2019.

5.

MIKHRALIIEVA, A.; MOTTA, H. B. ; ZAITSEV, V. . , 2018, Foz do Iguaçu. 41a Reunião Anual da Sociedade Brasileira de Química, 2018. p. 633-633.

6.

MIKHRALIIEVA, A.; ZAITSEV, V. . , 2017, Gramado. Proceedings of XVI Brazilian MRS meeting, 2017. p. 1569-1569.

Presentations of Work

1.

MIKHRALIIEVA, ALBINA; ZAITSEV, VOLODYMYR . Comparative electrochemical study of graphene-based nanomaterials toward dopamine. 2025. (Presentation/Congress).

2.

MIKHRALIIEVA, ALBINA. Evolution of Carbon Nanoparticles and their nanocomposites with polymers to improve coatings properties. 2025. (Presentation/Seminar).

3.

MIKHRALIIEVA, ALBINA; Lima, A. ; JOST, CRISTIANE L. ; NAZARKOVSKY, MICHAEL ; XING, YUTAO ; ZAITSEV, V. . Mesoporous Nitrogen-Doped Holey Reduced Graphene Oxide: Preparation, Purification, and Application for Metal-Free Electrochemical Sensing of Dopamine. 2024. (Presentation/Congress).

4.

MIKHRALIIEVA, A.; ZAITSEV, VOLODYMYR . Hierarchical architectures of graphene as sensitive membranes for electrochemical sensors. 2023. (Presentation/Congress).

5.

MIKHRALIIEVA, ALBINA; CARVALHO, N. ; GUTIERREZ-BELENO, L. ; AUCÉLIO, RICARDO Q ; MASSONE, C. ; ZAITSEV, V. . DEVELOPMENT OF MATERIALS AS ADSORBENT FOR RECOVERY OF HIGH-MOLECULAR WEIGHT POLYCYCLIC AROMATIC HYDROCARBONS FROM NON-AQUEOUS MEDIUM. 2023. (Presentation/Congress).

6.

MIKHRALIIEVA, ALBINA; Lima, A. ; JOST, C. ; XING, YUTAO ; ZAITSEV, V. . Desenvolvimento de um sensor eletroquímico modificado com rede de óxido de grafeno poroso para detecção de dopamina. 2023. (Presentation/Congress).

7.

CARVALHO, N. ; **MIKHRALIIEVA, A.** ; MASSONE, C. ; ZAITSEV, V. . PREPARAÇÃO, CARACTERIZAÇÃO E ESTUDOS DE ADSORÇÃO DA SÍLICA MODIFICADA COM NANOPARTÍCULAS DE CARBONO COMO UM POTENCIAL ADSORVENTE PARA A REMOÇÃO DE POLIAROMÁTICOS. 2023. (Presentation/Congress).

8.

MIKHRALIIEVA, A.; TKACHENKO, OLEG ; FREIRE, RAPHAEL ; XING, YUTAO ; PANTELEIMONOV, A. ; STRØMME, MARIA ; BUDNYAK, TETYANA M. ; ZAITSEV, VOLODYMYR . Carbon nanodots from 2-aminophenol with solvatochromic photoluminescence and their application for electrochemical determination of estrogenic steroids in water. 2022. (Presentation/Congress).

9.

MIKHRALIIEVA, A.. Síntese, caracterização e propriedades de fluorescência superficial de materiais à base de sílica gel com fragmentos de antracen. 2019. (Presentation/Congress).

10.

MIKHRALIIEVA, A.. Preparação de nanopontos de carbono fluorescentes utilizando aminosilica como nanoreator. 2018. (Presentation/Seminar).

11.

MIKHRALIIEVA, A.. Adsorvente seletivo a base de sílica-antraceno para remoção de compostos aromáticos. 2017. (Presentation/Conference or Colloquium).

12.

MIKHRALIIEVA, A.. Protolytic properties of silica materials modified with aminophosphonic groups. 2015. (Presentation/Congress).

13.

MIKHRALIIEVA, A.. Probing by small ions the surface of aminoxerogel obtained using the sol-gel method with CTAB as template. 2013. (Presentation/Congress).

Technical Production

Social networks, websites and blogs

1.

MIKHRALIIEVA, ALBINA; ZAITSEV, VLADIMIR . Instagram. 2021; Theme: LAQAPAB. (Social Media).

Boards

Participation in course completion works examination boards

Master's

1.

ZAITSEV, V.; **MIKHRALIIEVA, A.**; Saint'Pierre, T. D.; Barra, C. M.. Participation in board of Raphael Freire da Silva. 2021. Dissertation (Master's in Química) - Pontifícia Universidade Católica do Rio de Janeiro.

Events

Participation in events, congresses, exhibitions and fairs

1.

Chemical strategies for metal doping, anchoring, and perforation of graphene derivatives. 2025. (Congresses).

2.

Internacional 23rd Baltic Polymer Symposium.Direct conversion of lignin into antibacterial carbon nanomaterials without organofunctionalization. 2025. (Symposium).

3.

Comparative electrochemical study of graphene-based nanomaterials toward dopamine. 2025. (Congresses).

4.

XXIII B-MRS Meeting. 2025. (Meetings).

5.

Mesoporous Nitrogen-Doped Holey Reduced Graphene Oxide: Preparation, Purification, and Application for Metal-Free Electrochemical Sensing of Dopamine. 2024. (Congresses).

6.

PREPARAÇÃO, CARACTERIZAÇÃO E ESTUDOS DE ADSORÇÃO DA SÍLICA MODIFICADA COM NANOPARTÍCULAS DE CARBONO COMO UM POTENCIAL ADSORVENTE PARA A REMOÇÃO DE POLIAROMÁTICOS. 2023. (Congresses).

7.

DESENVOLVIMENTO DE UM SENSOR ELETROQUÍMICO MODIFICADO COM REDE DE ÓXIDO DE GRAFENO POROSO PARA DETECÇÃO DE DOPAMINA. 2023. (Congresses).

8.

46ª Reunião Anual da Sociedade Brasileira de Química. 2023. (Meetings).

9.

Development Of Materials As Adsorbent For Recovery Of High-Molecular Weight Polycyclic Aromatic Hydrocarbons From Non-Aqueous Medium. 2023. (Congresses).

10.

I Workshop de Ciências Forenses PUC-Rio. 2023. (Outra).

11.

DOPED CARBON NANOPARTICLES AS AGENTS FOR ANTI-CANCER THERAPY. 2023. (Congresses).

12.

XXIV SIMPÓSIO BRASILEIRO DE ELETROQUÍMICA E ELETROANALÍTICA.Employment of graphene oxide-based nanomaterials for the electrochemical determination of dopamine. 2023. (Symposium).

13.

Estudo de extração em fase sólida de Hidrocarbonetos Policíclicos Aromáticos (HPAs) utilizando sílica modificada com nanopontos de carbono como adsorvente. 2022. (Congresses).

14.

45ª Reunião Anual da Sociedade Brasileira de Química. 2022. (Meetings).

15.

XVIII Encontro Regional da SBQ-Rio. 2022. (Meetings).

16.

XX B-MRS Meeting. 2022. (Meetings).

17.

Escola Ricardo Rodrigues de Luz Síncrotron (ER2LS). 2021. (Outra).

18.

II Advanced School on Nanomedicine. 2021. (Outra).

19.

Workshop Rede Fluminense para a Pesquisa e Desenvolvimento de Nanomateriais e Nanobiosistemas. 2021. (Meetings).

20.

43ª Reunião Anual Virtual da SBQ. 2020. (Meetings).

21.

RSC Desktop Seminars with Brazilian Chemical Society Organic Chemistry Division. 2020. (Outra).

22.

Scanning Electron Microscopy - Assistant Technique In The Preparation Of Fluorescence Carbon Dots On Silica Gel. 2019. (Congresses).

23.

CHEMISTRY & WATER AMERICAN CHEMICAL SOCIETY FALL 2019 NATIONAL MEETING & EXPO. 2019. (Meetings).

24.

III Jornada de Pós-Graduação e Pesquisa dos Programas de Pós-graduação em Química da PUC-Rio e do Instituto Militar de Engenharia (IME),Quantum Confinement of Strongly Fluorescent Carbon Dots in Silica-Based Nanoreactors. 2019. (Outra).

25.

XVII Encontro Regional da Sociedade Brasileira de Química - Regional Rio de Janeiro (XVIIERSBQ-Rio). 2019. (Meetings).

26.

XVII Encontro Regional da Sociedade Brasileira de Química-Rio de Janeiro. 2019. (Meetings).

27.

17th Annual Meeting of the Brazilian Materials Research Society. 2018. (Meetings).

28.

. Effect of functionalization of porous silica as nanoreactor for preparation of fluorescent Carbon Dots. 2018. (Congresses).

29.

II Jornada de Pós-Graduação e Pesquisa ? DQ PUC-Rio. .Preparação de nanopontos de carbono fluorescentes utilizando aminosilica como nanoreator. 2018. (Seminary).

30.

INFLUENCE OF THERMAL-RESISTANT TEMPLATE ON SIZE AND FLUORESCENCE PROPERTIES OF CARBON DOTS. 2018. (Congresses).

31.

I Jornada de Pós-Graduação e Pesquisa ? DQ PUC-RioAdsorvente seletivo a base de sílica-antraceno para remoção de compostos aromáticos. 2017. (Outra).

32.

Graphene@silica for removal of polyaromatic compounds. 2017. (Congresses).

33.

XVI Encontro Regional da Sociedade Brasileira de Química. 2017. (Meetings).

34.

Protolytic properties of silica materials modified with aminophosphonic groups. 2015. (Congresses).

35.

Electrochemical determination of dopamine using carbon composite electrode with modified ormosil. 2014. (Congresses).

36.

Probing by small ions the surface of aminoxerogel obtained using the sol-gel method with CTAB as template. 2013. (Congresses).

Organization of events

1.

ZAITSEV, V. ; ACHETE, C. A. ; Moraes, M.C. ; **MIKHRALIIEVA, A.** . Workshop Rede Fluminense para a Pesquisa e Desenvolvimento de Nanomateriais e Nanobiosistemas. 2021. (Event Production/ Other).

Academic Advisory

Academic advisory - current

Ph.D. thesis

1.

Nathália Carvalho da Silva. Begin: 2022. Thesis (Ph.D. in Química) - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. (Co-advisor).

Scientific initiation

1.

Gabriel Bustamante. Begin: 2025. Scientific Initiation (Undergraduate Student in Química) - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. (Advisor).

2.

Julia Vivian S. Silva. Begin: 2025. Scientific Initiation (Undergraduate Student in Química) - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. (Advisor).

3.

PAMELA TARANTO BARBOSA AZEVEDO. Begin: 2024. Scientific Initiation (Undergraduate Student in Química) - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. (Advisor).

4.

ANA STERN DA FONSECA KRUEL. Begin: 2024. Scientific Initiation (Undergraduate Student in Química) - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. (Advisor).

Academic Advisory - concluded

Master's thesis

1.

Raphael Freire da Silva. 2021. Dissertation Masters' in Chemistry) - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. Co-advisor: Albina Mikhraliieva.

Scientific initiation

1.

Renan Grangeiro dos Santos. 2021. Scientific Initiation - Pontifícia Universidade Católica do Rio de Janeiro, Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ. Advisor: Albina Mikhraliieva.

2.

Renan Grangeiro dos Santos. 2021. Scientific Initiation - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. Advisor: Albina Mikhraliieva.

3.

Daniel Zanatta. 2018. Scientific Initiation - Universidade do Estado do Rio de Janeiro. Advisor: Albina Mikhraliieva.

4.

Henrique Botelho da Motta. 2018. Scientific Initiation - Pontifícia Universidade Católica do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. Advisor: Albina Mikhraliieva.

Other academic advisory

1.

Luis Miguel Gutiérrez Beleño. 2023. Other Academic Advisory - Pontifícia Universidade Católica do Rio de Janeiro, Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ. Advisor: Albina Mikhraliieva.

2.

Nathália Carvalho da Silva. 2021. Other Academic Advisory - Pontifícia Universidade Católica do Rio de Janeiro, Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do RJ. Advisor: Albina Mikhraliieva.

Education and Popularization of C & T

Social networks, websites and blogs

1.

MIKHRALIIEVA, ALBINA; ZAITSEV, VLADIMIR . Instagram. 2021; Theme: LAQAPAB. (Social Media).