Tatjana Charkova

CONTACT INFORMATION

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EDUCATION AND ACADEMIC DEGREE

2008 – 2015	PhD studies, in chemistry (Physical Sciences, 03P) at the Center for Physical Sciences and Technology and Vilnius University - "Synthesis and investigation of functionalized alkyl oligo(ethylene oxides)", successfully defended on 23 November of 2015.
2006 – 2008	Master's studies in chemistry at Vilnius Pedagogical University (currently VDU Academy of Education), Master's degree in chemistry and teacher qualification.
2002 – 2006	Bachelor's studies in chemistry at Vilnius Pedagogical University (currently VDU Academy of Education), Bachelor's degree in Natural Sciences and qualification as a general education school chemistry teacher.

PROFESSIONAL EXPERIENCE

2026 09 21 – present	**Researcher** Laboratory of Biodeterioration Research, Nature Research Centre, Vilnius
2018 – present	**Researcher** Department of Organic Chemistry, Center for Physical Sciences and Technology, Vilnius
2016 – 2023	**Lecturer** SMK University of Applied Sciences, Vilnius
2016 – 2018	**Junior Researcher** Department of Organic Chemistry, Center for Physical Sciences and Technology, Vilnius
2010 – 2016	**Engineer** Department of Organic Chemistry, Center for Physical Sciences and Technology, Vilnius
2006 – 2010	**Laboratory Assistant** Department of Chemistry, Faculty of Natural Sciences, Vilnius Pedagogical University (currently VDU Academy of Education), Vilnius

RESEARCH INTERESTS

Synthesis of nanoparticles, their surface modification, and application in the study of yeast cells and other microorganisms.

PUBLICATIONS

Published in journals, indexed in „Clarivate Analytics Web of Science“ database:

1. Zdaniauskienė, Agnė; **Charkova, Tatjana**; Būdienė, Jurga; Knašienė, Birutė; Drabavičius, Audrius; Labanauskas, Linas. Concentration-dependent SERS study of adsorption and molecular orientation of Matricaria chamomilla L. hydrolate constituents on Au@Ag core-shell nanoparticles // Spectrochimica acta part A: Molecular and biomolecular spectroscopy: Elsevier BV. ISSN 1386-1425. eISSN 1873-3557. 2026, vol. 363, iss. Part 2, art. no. 128451, p. 1-10. DOI: 10.1016/j.saa.2026.128451. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 4,800; Q1 (2025, Clarivate JCR SCIE)]

2. Judžentienė, Asta; Kundrotaitė, Aistė; **Charkova, Tatjana**; Nedveckytė, Irena. Phytochemistry and allelopathic properties of invasive heracleum sosnowskyi aqueous extracts against lettuce (Lactuca sativa L.), perennial ryegrass (Lolium perenne L.), timothy (Phleum pratense L.) and white clover (Trifolium repens L.) // Plants: Special Issue Extraction, Isolation and Characterization of Bioactive Compounds from Plants. Basel: Basel. eISSN 2223-7747. 2026, vol. 15, iss. 3, art. no. 346, p. 1-21. DOI: 10.3390/plants15030346. [Science Citation Index Expanded (Web of Science); Scopus; Dimensions] [IF: 4,700; Q1 (2025, Clarivate JCR SCIE)]

3. **Charkova, Tatjana**; Ignatjev, Ilja. Silver core-tin oxide nanoparticles: Stability in water/organic solvents and application in Raman spectroscopy // Materials letters: Elsevier. ISSN 0167-577X. eISSN 1873-4979. 2026, vol. 402, art. no. 139299, p. 1-4. DOI: 10.1016/j.matlet.2025.139299. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 2,600; Q3 (2025, Clarivate JCR SCIE)]

4. Klimovich, Aliona; **Charkova, Tatjana**; Matulaitienė, Ieva. Characterization of the urotensin II peptide by SERS using silver nanoparticles // Journal of Raman spectroscopy: John Wiley & Sons Ltd. ISSN 0377-0486. eISSN 1097-4555. 2025, vol. 56, iss. 6, p. 464-471. DOI: 10.1002/jrs.6800. [Science Citation Index Expanded (Web of Science); Scopus; Chimica Database] [IF: 2,200; Q2 (2025, Clarivate JCR SCIE)]

5. **Charkova, Tatjana**; Bolgova, Kristina. Functionalisation of silver nanoparticles with 4-mercaptophenylacetic acid for iron ions detection using surface-enhanced Raman spectroscopy = Sidabro nanodalelių funkcionalizavimas 4-merkaptofenilacto rūgštimi geležies jonams aptikti, naudojant paviršiaus sustiprintą Ramano spektroskopiją // Chemija. Vilnius: Lithuanian academy of sciences. ISSN 0235-7216. eISSN 2424-4538. 2025, vol. 36, no. 1, p. 1-7. DOI: 10.6001/chemija.2025.36.1.1. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 1,000; Q4 (2025, Clarivate JCR SCIE)]

6. **Charkova, Tatjana**; Taurelė, Vytautas. Synthesis of silver core-Tin oxide shell nanoparticles for shell-isolated nanoparticle-enhanced Raman spectroscopy // Journal of nano research. Baech : Trans tech publications, Ltd. eISSN 1661-9897. 2024, vol. 84, p. 1-12. DOI: 10.4028/www.scientific.net/JNanoR. [Science Citation Index Expanded (Web of Science)] [IF: 1,000; Q4 (2024, Clarivate JCR SCIE)]

7. Charniakova, Katsiaryna; Matulaitienė, Ieva; **Charkova, Tatjana**; Grincienė, Giedrė; Jurevičiūtė, Meda; Kopūstas, Aurimas; Jagminas, Arūnas; Karpič, Renata. Anodic alumina/carbon composite films: extraction and characterization of the carbon-containing component // Journal of physics: materials. Bristol: IOP Publishing. ISSN 2515-7639. eISSN 2515-7639. 2024, vol. 7, iss. 2, art. no. 025011, p. 1-14. DOI: 10.1088/2515-7639/ad3b6f. [Science Citation Index Expanded (Web of Science); Scopus; DOAJ] [IF: 4,300; Q2 (2024, Clarivate JCR SCIE)]

8. **Charkova, Tatjana**; Ignatjev, Ilja. Optimization of shell-isolated nanoparticle-enhanced Raman spectroscopy experiments with silver core-silica shell nanoparticles // Vibrational spectroscopy. Amsterdam: Elsevier BV. ISSN 0924-2031. 2024, vol. 131, art. no. 103666, p. 1-7. DOI: 10.1016/j.vibspec.2024.103666. [Science Citation Index Expanded (Web of Science); Scopus; Embase] [IF: 3,100; Q1 (2024, Clarivate JCR SCIE)]

9. Daublytė, Edita; Zdaniauskienė, Agnė; Talaikis, Martynas; **Charkova, Tatjana**. Synthesis and functionalization of silver nanoparticles for divalent metal ion detection using surface-enhanced Raman spectroscopy // Journal of nanoparticle research. Dordrecht: Springer Science and Business Media LLC. ISSN 1388-0764. eISSN 1572-896X. 2024, vol. 26, iss. 1, art. no. 6, p. 1-8. DOI: 10.1007/s11051-023-05917-w. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 2,600; Q2 (2024, Clarivate JCR SCIE)]

10. Daublytė, Edita; Kalnaitytė, Marija; Klimovich, Aliona; Drabavičius, Audrius; **Charkova, Tatjana**. Synthesis of silver nanoparticles with polyols under reflux and microwave irradiation conditions = Sidabro nanodalelių sintezė su polioliais virinant ir mikrobangų poveikio sąlygomis // Chemija. Vilnius: Lithuanian Academy of Sciences. ISSN 0235-7216. eISSN 2424-4538. 2023, vol. 34, no. 3, p. 113-122. DOI: 10.6001/chemija.2023.34.3.1. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 0,500; Q4 (2023, Clarivate JCR SCIE)]

11. Zdaniauskienė, Agnė; Talaikis, Martynas; **Charkova, Tatjana**; Sadzevičienė, Rita; Labanauskas, Linas; Niaura, Gediminas. Electrochemical shell-isolated nanoparticle-enhanced Raman spectroscopy of imidazole ring functionalized monolayer on smooth gold electrode // Molecules. Basel: MDPI AG. eISSN 1420-3049. 2022, vol. 27, iss. 19, art. no. 6531, p. 1-16. DOI: 10.3390/molecules27196531. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 4,600; Q2 (2022, Clarivate JCR SCIE)]

12. Zdaniauskienė, Agnė; Ignatjev, Ilja; **Charkova, Tatjana**; Talaikis, Martynas; Lukša, Algimantas; Šetkus, Arūnas; Niaura, Gediminas. Shell-isolated nanoparticle-enhanced Raman spectroscopy for probing riboflavin on graphene // Materials. Basel: MDPI AG. eISSN 1996-1944. 2022, vol. 15, iss. 5, art. no. 1636, p. 1-14. DOI: 10.3390/ma15051636. [Science Citation Index Expanded (Web of Science); Scopus; DOAJ] [IF: 3,400; Q2 (2022, Clarivate JCR SCIE)]

13. Daublytė, Edita; Zdaniauskienė, Agnė; **Charkova, Tatjana**. Microwave synthesis of silver core-silica decorated nanoparticles = Silicio dioksidu dekoruotų sidabro nanodalelių mikrobangų sintezė // Chemija. Vilnius: Lietuvos Mokslų Akademija. ISSN 0235-7216. eISSN 2424-4538. 2022, vol. 33, iss. 1, p. 1-6. [Science Citation Index Expanded (Web of Science); Scopus; Academic Search Complete] [IF: 0,600; Q4 (2022, Clarivate JCR SCIE)]

14. Daublytė, Edita; Zdaniauskienė, Agnė; Talaikis, Martynas; Drabavičius, Audrius; **Charkova, Tatjana**. A facile microwave-assisted synthesis of Ag@SiO2nanoparticles for Raman spectroscopy // New journal of chemistry. Cambridge: Royal Society of Chemistry. ISSN 1144-0546. eISSN 1369-9261. 2021, vol. 45, iss. 24, p. 10952-10958. DOI: 10.1039/D1NJ01439K. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 3,925; Q2 (2021, Clarivate JCR SCIE)]

15. **Charkova, Tatjana**; Zdaniauskienė, Agnė. Synthesis and comparison of gold nanoparticles coated with silicon, manganese and titanium dioxides = Dengtų silicio, mangano ir titano dioksidais aukso nanodalelių sintezė ir palyginimas // Chemija. Vilnius: Lietuvos Mokslų Akademija. ISSN 0235-7216. eISSN 2424-4538. 2020, vol. 31, no. 4, p. 197-202. DOI: 10.6001/chemija.v31i4.4316. [Science Citation Index Expanded (Web of Science); Scopus; Chemical abstracts] [IF: 0,636; Q4 (2020, Clarivate JCR SCIE)]

16. Zdaniauskienė, Agnė; **Charkova, Tatjana**; Ignatjev, Ilja; Melvydas, Vytautas Boleslovas; Garjonytė, Rasa; Matulaitienė, Ieva; Talaikis, Martynas; Niaura, Gediminas. Shell-isolated nanoparticle-enhanced Raman spectroscopy for characterization of living yeast cells // Spectrochimica acta. Part A: Molecular and biomolecular spectroscopy. Oxford: Pergamon-Elsevier Science Ltd. ISSN 1386-1425. eISSN 1873-3557. 2020, vol. 240, art. no. 118560, p. 1-8. DOI: 10.1016/j.saa.2020.118560. [Science Citation Index Expanded (Web of Science); Scopus; MEDLINE] [IF: 4,098; Q1 (2020, Clarivate JCR SCIE)]

17. Judžentienė, Asta; **Charkova, Tatjana**; Misiūnas, Audrius. Chemical composition of the essential oils from Helichrysum arenarium (L.) plants growing in Lithuanian forests // Journal of essential oil research. Philadelphia, PA: Taylor & Francis. ISSN 1041-2905. 2019, vol. 31, iss. 4, p. 305-311. DOI: 10.1080/10412905.2019.1572550. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 1,148; Q3 (2019, Clarivate JCR SCIE)]

18. Zdaniauskienė, Agnė; **Charkova, Tatjana**; Matulaitienė, Ieva; Eicher-Lorka, Olegas; Matijoška, Algirdas; Skapas, Martynas; Selskis, Algirdas; Niaura, Gediminas. Electrochemical shell-isolated nanoparticle-enhanced Raman spectroscopy: bonding, structure, and ion-pairing of the positive charge bearing pyridinium ring

terminated monolayer at smooth gold electrode // Journal of physical chemistry C. Washington, NW: American Chemical Society. ISSN 1932-7447. eISSN 1932-7455. 2018, vol. 122, iss. 2, p. 1234-1242. DOI: 10.1021/acs.jpcc.7b09970. [Science Citation Index Expanded (Web of Science); Scopus] [IF: 4,309; Q1 (2018, Clarivate JCR SCIE)]

19. Eicher-Lorka, Olegas; **Charkova, Tatjana**; Matijoška, Algirdas; Kuodis, Zenonas; Urbelis, Gintaras; Penkauskas, Tadas; Mickevičius, Mindaugas; Bulovas, Arūnas; Valinčius, Gintaras. Cholesterol-based tethers and markers for model membranes investigation // Chemistry and physics of lipids. Clare: Elsevier Ireland Ltd. ISSN 0009-3084. 2016, Vol. 195, p. 71-86. DOI: 10.1016/j.chemphyslip.2015.12.006. [Science Citation Index Expanded (Web of Science); ScienceDirect; Compendex] [IF: 3,361; Q2 (2016, Clarivate JCR SCIE)]

20. **Charkova, Tatjana**; Kuodis, Zenonas; Matijoška, Algirdas; Eicher-Lorka, Olegas. Glycerol-based thiolipids for model membranes // Chemija. ISSN 0235-7216. 2014, Vol. 25, no. 4, p. 224-228. [Science Citation Index Expanded (Web of Science); Academic Search Complete; Chemical abstracts] [IF: 0,472; Q4 (2014, Clarivate JCR SCIE)]

21. Matijoška, Algirdas; **Charkova, Tatjana**; Kuodis, Zenonas; Voiciuk, Vladislava; Eicher-Lorka, Olegas. Synthesis and properties of new biotin compounds containing hexyltriethylene glycol chain // Central European journal of chemistry. Warsaw: Versita, co-published with Springer-Verlag GmbH. ISSN 1895-1066. 2012, vol. 10, no. 1, p. 113-120. DOI: 10.2478/s11532-011-0113-8. [Science Citation Index Expanded (Web of Science); Current Abstracts; SpringerLink] [IF: 1,167; Q3 (2012, Clarivate JCR SCIE)]

Published in other international databases:

1. **Charkova, Tatjana**. Determination of barium ions by SERS using silver nanoparticles // Nano-structures & nano-objects: Elsevier B.V. ISSN 2352-507X. 2025, vol. 43, art. no. 101511, p. 1-7. DOI: 10.1016/j.nanoso.2025.101511. [Scopus]

2. **Charkova, Tatjana**; Zdaniauskienė, Agnė; Ignatjev, Ilja. Silica shell-isolated gold nanospheres: Synthesis, investigation of stability in organic solvents, and application in shell-isolated nanoparticle-enhanced Raman spectroscopy // Chemical Data Collections: Elsevier B.V. ISSN 2405-8300. 2020, vol. 29, art. no. 100497, p. 1-9. DOI: 10.1016/j.cdc.2020.100497. [Scopus; Chemical abstracts]

PARTICIPATION IN INTERNATIONAL AND NATIONAL SCIENTIFIC PROGRAMMES AND PROJECTS

2020 – 2023 "Magneto-plasmonic nanoparticles for SERS analysis of biological surfaces" (SM-ARTSERS), project No. 01.2.2-LMT-K-718-03-0078, funded by the Research Council of Lithuania (LMT). The project was implemented from July 2020 to August 2023 at the Center for Physical Sciences and Technology (FTMC) as the host institution, in collaboration with Vilnius University (VU), Faculty of Physics, Institute of Chemical Physics as the partner institution.