

Gunay Hajiyeva

Ecologist

✉ gunayhyeva8@gmail.com

🌐 <https://www.linkedin.com/in/gunay-hajiyeva-797515308>

☎ +994516239931

📍 Azerbaijan, Baku



Professional Summary

As a scientific researcher with over 5 years of experience, I specialize in assessing the environmental impact of petroleum products. I demonstrate accuracy and a results-oriented approach in conducting UV, IR, and luminescence analyses. My goal is to apply my scientific knowledge in the field of environmental protection in practice.

Professional Experience

Scientific researcher at Institute of Petrochemical Processes of Ministry of Science and Education Republic of Azerbaijan (2020-present)

- Investigated the photodegradation process of oil and oil products under the influence of sunlight, as well as the environmental impact of substances formed during the process.
- Analyzed organic substances through FTIR, UV, and luminescence techniques.
- Conducted scientific research to prevent the aggregation of asphaltene in oils.
- Published more than 25 articles and theses in local and international journals based on scientific research results.

Lecturer in the course “Determination of Harmful Substances in Water, Air, and Soil” at Institute of Petrochemical Processes of Azerbaijan National Academy of Science (09.2022-12.2022)

Education

Master degree

Azerbaijan National Academy of Science

Environmental chemistry 2020-2022

Bachelor degree

Baku State University

Ecology 2015-2019

Courses & Trainings

“Environmental Specialist” Development and Training course (12 June- 14 July 2025)

AZGREEN Engineering and Environmental Service

Renewable Energy Projects (10 May 2025) Verify at: <https://coursera.org/verify/IBLJP8KC6T34>

University of Colorado Boulder

Google Project Management (1 May 2025) Verify at: <https://www.credly.com/go/GqIWj89q>

Google

21st century energy transition: how do we make it work? (21 April 2025) Verify at:

<https://coursera.org/verify/A96LXJOD0VDM>

University of Alberta

Introduction to solar cells (9 April 2025) Verify at: <https://coursera.org/verify/C6LI8RXP5XBP>

Technical University of Denmark

Solar energy systems

Azerbaijan Engineering Training Center

Microsoft Excel

Data Prime Academy

Project of " Organization of trainings in the direction of environmental protection"

- Introduction to Environmental Management (21 July 2023)
- Water Resources Management (22 July 2023)
- Air Quality Management (28 July 2023)
- Ecosystems and Biodiversity (29 July 2023)

Azerbaijan Engineers Union

Oil Refining Masterclass (30 April - 20 May 2023)

Azerbaijan Engineers Union

ShEngineer project "PetroChem" course (15 April - 7 May 2023)

Azerbaijan Engineers Union

Baku Idea Lab/Dreamers Lab 2 (October 2019 - February 2020)

Canada Fund for Local Initiatives

Projects

Articles:

N-Octylaminopropan-2-ol surfactant for crude-oil asphaltene dispersion: Integrated experimental and modeling insights. *Fuel*. <https://doi.org/10.1016/j.fuel.2025.136286>

A study of asphaltene solubility and aggregation due to sulfur heteroatoms: molecular dynamics simulation. *Journal of Molecular Modeling*. <https://doi.org/10.1007/s00894-025-06358-z>

Investigation and study of thermo-oxidation processes in petroleum and petroleum products. Processes of Petrochemistry and Oil Refining. <https://doi.org/10.62972/1726-4685.2025.1.240>

Synthesis of Aliphatic Aldehydes and Oxy Acids by Liquid-Phase Oxidation of Cyclohexene with Hydrogen Peroxide. Proceedings Of Azerbaijan High Technical Educational Institutions

Investigation of Polycyclic Aromatic Hydrocarbons in Heavy Surakhany Crude Oil by Luminescence Method. Journal of Young Researchers.

Process of chemical transformations in heavy aromatic hydrocarbons of the Surakhan oil under the action of UV rays. Journal of Physics. <https://doi:10.1088/1742-6596/2064/1/012108>

Theses:

Study of biologically active hydrocarbons contained in naphthalene oil and their application in medicine. VI International conference of natural sciences and technologies.

Study of the chemical composition of Azerbaijani crude oil using infrared spectroscopy and nuclear magnetic resonance methods. Saint-Petersburg State University 21th International School-Conference/ Magnetic resonance and its applications proceedings.

Physicochemical and vacuum pyrolysis studies of bitumen extracted from east Azerbaijan oil sands: the first attempt to obtain naphtha and distillate. International Conference on Natural Science and Technologies.

Spectroscopic Study of heavy oil residues and their effective use. XII Российская конференция «Актуальные проблемы нефтехимии» (с международным участием) Посвящена памяти академика С.Н.Хаджиева.

Grants:

Grant project of the Science Development Foundation under the President of the Republic of Azerbaijan:

“Development and implementation of a technology for producing complex fertilizers based on local raw materials (volcanic mud, oil shale) and household and industrial waste”, **EIF/MQM/ETS-2020-1(35)**, 2021–2023, Participant.

Grant project of the Science Fund of the State Oil Company of Azerbaijan Republic (SOCAR): “Distribution characteristics, mineralogical and geochemical investigations of organic matter–rich shale sedimentary complexes in Eastern Azerbaijan: assessment of shale oil potential and possible exploitation methods”, 2024–2025, Participant.

Patent:

Hajiyeva G. A., et al. *Dispersing Reagent Against Asphaltene Aggregation*, **Patent No.: A 2025 0037**, Date: 13 March 2025.

International Patent Classification (IPC): C10M 101/02 (2006.01); C09K 3/32 (2006.01); C09K 23/22 (2006.01); C09K 23/38 (2006.01); C09K 8/524 (2006.01).

Status: Granted.

Granting Authority: Intellectual Property Agency of the Republic of Azerbaijan.

Key Skills

UV, IR, and Luminescence analysis

Laboratory research & Data interpretation

Petroleum product analysis & Photodegradation studies

Scientific writing & Publication

OPUS Software (FTIR Analysis)

Prism Software (UV Analysis)

Cary Eclipse (Luminescence Spectroscopy)

Microsoft Office Suite (Word, Excel, PowerPoint)

Data analysis & Reporting

Critical thinking & Problem solving

Attention to Detail

Languages

Azerbaijani – Native

English – Upper-Intermediate

Spanish – Elementary