Gunay Hajiyeva

Ecologist

gunay.hajiyeva@khazar.org

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

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 asphaltenes 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/GqlWj89q
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 İdea Lab/Dreamers Lab 2 (0ctober 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 naphthalane 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 Россиская конференция «Актуалные проблемы нефтехимии» (с международным участием) Посвящена памяти академика С.Н.Хаджиева.

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 – Elementry