

# Nazli Mehdiyeva

Chemist

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## Professional Summary

As a scientific researcher with over five years of experience, I specialize in evaluating the environmental impact of petroleum products. I apply a precise and results-oriented approach in conducting UV, IR, NMR, and luminescence analyses. My objective is to effectively implement my scientific expertise in practical applications related to environmental protection.

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## 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, NMR, UV, and luminescence techniques.
- Conducted scientific research to prevent the aggregation of asphaltenes in oils.
- Published more than 18 articles and theses in local and international journals based on scientific research results.

## Education

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### Master degree

Azerbaijan National Academy of Science

Nanomaterials chemistry 2020-2022

### Bachelor degree

Baku State University

Chemistry teacher 2015-2019

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## Projects

### Articles:

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>

Phototransformation Processes of Oil Sands Bitumen Under the Influence of Ultraviolet Radiation. Coke and Chemistry, 68(1), 45-51.

Olefinlərin oliqomerləşməsi üçün yeni Al<sub>2</sub>O<sub>3</sub>-B<sub>2</sub>O<sub>3</sub> əsaslı katalizatorun sintezi. Müasir təbiət və iqtisad elmlərinin aktual problemləri”, Beynəlxalq elmi konfrans, I Hissə, Gəncə, s.149-151.

Alüminium əsaslı karbon tipli katalizatorların yeni sintez üsullarının araşdırılması. International scientific and technical conference on “Innovative perspectives on development of technical and natural sciences” held by the department of Applied Mechanics at Azerbaijan State Marine Academy, p.105-108

### Theses:

Neftlə çirklənmiş torpaqların təmizlənməsində günəş şüalarının rolu. Bakı Dövlət Universitetinin 105 və Ekoloji kimya kafedrasının 20 illiyinə həsr olunmuş “Ekoloji kimya və ətraf mühitin mühafizəsinin müasir problemləri” mövzusunda Respublika Elmi Konfransı

Günəş enerjisinin neft lüminoforlarında toplanması üzrə aparılan elmi tədqiqatlar. Bakı Dövlət Universitetinin 105 və Ekoloji kimya kafedrasının 20 illiyinə həsr olunmuş “Ekoloji kimya və ətraf mühitin mühafizəsinin müasir problemləri” mövzusunda Respublika Elmi Konfransı, s.100-103

Synthesis of TiO<sub>2</sub> nanoparticles in the liquid phase. BANM, The fifth international student research and science conference dedicated to the 101st anniversary of the national leader of Azerbaijan Heydar Aliyev

Synthesis of a new Al<sub>2</sub>O<sub>3</sub>-B<sub>2</sub>O<sub>3</sub> based catalyst for oligomerization of olefins. 10 th Rostocker International Conference: “Thermophysical Properties for Technical Thermodynamics”, Rostock, GERMANY, p.112

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## **Key Skills**

UV, IR, and Luminescence analysis  
Laboratory research & Data interpretation  
Petroleum product analysis & Photodegradation studies  
Scientific writing & Publication  
OPUS Software (FTIR Analysis)  
TopSpin (NMR 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

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## **Languages**

Azerbaijani – Native

English – Intermediate