

**Dr Elshan (El) Abdullayev**  
Researcher, Nanaomineralogy  
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## Education

2011 – 2015	<b>Dr. rer. nat.</b> Institute for Geophysics and Geology Leipzig University, Federal Republic of Germany
2008 – 2010	<b>M.Sc.</b> Geological exploration faculty/Sedimentology Azerbaijan State Oil Academy, Republic of Azerbaijan
2001 – 2005	<b>B.Sc.</b> Geological exploration faculty/Hydrogeology and engineering geology Azerbaijan State Oil Academy, Republic of Azerbaijan

## Employment

1 <sup>st</sup> May 2025 – 30 <sup>th</sup> April 2026	<b>Visiting Scholar</b> Department of Geology, University of Georgia, USA
1 <sup>st</sup> November 2024 – 30 <sup>th</sup> April 2025	<b>Fulbright Scholar</b> Department of Geology, University of Georgia, USA
15 <sup>th</sup> November 2023 – 21 <sup>st</sup> October 2024	<b>Associate Professor (Nanomineralogy)</b> School of Science and Engineering, Khazar University, Republic of Azerbaijan
1 <sup>st</sup> July – 26 <sup>th</sup> September 2024	<b>DAAD Fellow</b> Department of Soil Science, Trier University, Federal Republic of Germany
15 <sup>th</sup> February 2022 – 21 <sup>st</sup> October 2024	<b>Head of Department</b> Department of Petroleum Engineering, School of Science and Engineering, Khazar University, Republic of Azerbaijan
15 <sup>th</sup> February 2022 – 15 <sup>th</sup> November 2023	<b>Lecturer in geoscience</b> School of Science and Engineering, Khazar University, Republic of Azerbaijan
1 <sup>st</sup> July – 30 <sup>th</sup> August 2021	<b>DAAD Fellow</b> Institute of Geography and Geology, University of Greifswald, Federal Republic of Germany
2020/2021 & 2021/2022 (autumn semester), part time	<b>Lecturer in geoscience</b> Department of Petroleum Engineering, Khazar University, Republic of Azerbaijan
4 <sup>th</sup> January 2020-current	<b>Adjunct researcher</b> Department of Life Sciences, Khazar University, Azerbaijan
1 <sup>st</sup> October – 20 <sup>th</sup> December 2019	<b>Institute of Advanced Study Fellow</b>

15 <sup>th</sup> April 2019 – 15 <sup>th</sup> February 2022	Durham University, United Kingdom <b>Geoscience programme coordinator</b> French-Azerbaijani University (UFAZ), Republic of Azerbaijan
1 <sup>st</sup> June – 31 <sup>st</sup> December 2019	<b>Distant researcher</b> Division for Geology, Tomsk Polytechnical University, Russian Federation
15 <sup>th</sup> June 2018- 15 <sup>th</sup> September 2018	<b>DAAD Fellow</b> Institute of Geography and Geology, University of Greifswald, Federal Republic of Germany
1 <sup>st</sup> June 2016 – 30 May 2017	<b>Postdoctoral researcher</b> Department of Geological Engineering, Mugla Sitki Kochman University, Republic of Türkiye
2016 (autumn semester), part time	<b>Lecturer in sedimentology</b> Azerbaijan State Oil and Industrial University, Republic of Azerbaijan
1 <sup>st</sup> July 2015 – 15 <sup>th</sup> April 2019	<b>Researcher</b> Institute of Geography at Azerbaijan National Academy of Science, Republic of Azerbaijan
20 <sup>th</sup> September 2006 – 26 September 2011	<b>Geologist</b> Department of Geophysics and Geology, State Oil Company of Azerbaijan Republic (SOCAR), Republic of Azerbaijan

## Grants/Awards

November 2024 – April 2025	Fulbright, USA
Jul.-Sep. 2024	German Academic Exchange Service (DAAD fellow), Germany
Jul.-Aug. 2021	German Academic Exchange Service (DAAD fellow), Germany
Oct.-Dec. 2019	Institute of Advanced Study, Durham University (fellow), United Kingdom
Jun.-Aug. 2018	German Academic Exchange Service (DAAD fellow), Germany
2017	Institute of Geography, Azerbaijani National Academy of Science (researcher/applicant), Azerbaijan
2017	Scientific Research Project (BAP) of Mugla Sitki Kochman University (researcher/co-applicant), Turkey
2016-2017	Scientific and Technological Research Council of Türkiye (TÜBİTAK), 2216-Research Fellowship Programme for International Researchers, (postdoctoral researcher/applicant), Turkey
2011-2015	State Scholarship Program on Education of Azerbaijani Youth Abroad (PhD student/applicant), Azerbaijan

## Teaching

2002-2024 (spring term)	General geology, Geoscience, Mineralogy
2021-current	Co-supervisor of a PhD project

2021-2022	Supervisor of a master thesis
2020-2022 (autumn term)	Petroleum geoscience; Supervisor of two master research projects; co-supervisor of master research projects
2020-2022 (spring term)	Supervisor of interdisciplinary bachelor projects
2019 – 2021	Induction fieldwork (4 <sup>th</sup> year) in French-Azerbaijan University (UFAZ), Azerbaijan
2019	Scientific advisor of the contemporary art project on "Art meets Science – Ground evaluation."
2016 (spring term)	Lecturer in Sedimentology (3 <sup>rd</sup> year) in Azerbaijan State Oil and Industrial University, Azerbaijan

## Lectures

Departmental:	2021, Clay minerals and their perspectives. <u>French-Azerbaijani University (UFAZ)</u>
Public lecture:	2019, Origin of clay minerals and their perspectives. St Cuthbert's Society, <u>Durham University, United Kingdom</u>
Seminar:	2019, What make clays in mud volcanoes antibacterial? Institute of Advanced Study, <u>Durham University, United Kingdom</u>
Invited:	2017, Characterization of the clay minerals in the Lower Pliocene of the western South Caspian Basin. <u>Ege University, Turkey</u>
Departmental:	2016, Reconstruction of the palaeoclimate based on clay minerals of the Lower Pliocene sediments from the western South Caspian Basin. <u>Institute of Geography, Azerbaijan National Academy of Science, Azerbaijan</u>
Departmental:	2015, The Origin of clay minerals of the Lower Pliocene sediments from the western South Caspian Basin. <u>Institute of Geography, Azerbaijan National Academy of Science, Azerbaijan</u>
Invited:	2015, Reconstruction of provenance based on clay minerals from the Pliocene Productive Series, western South Caspian Basin. <u>BP Exploration Caspian Sea, Azerbaijan</u>
Invited:	2015, Characterization of the clay minerals and their significance in the Pliocene Productive Series, western South Caspian Basin. <u>Azerbaijan Society of Petroleum Geologists, Azerbaijan</u>
Invited:	2014, Significance of clay minerals in the Lower Pliocene sediments from the western flank of the South Caspian Basin. <u>RWE Dea (Wintershall Dea GmbH), Germany</u>
Invited:	2014, Climatic signals of clay minerals in the Lower Pliocene sediments from the western flank of the South Caspian Basin. <u>Brunel University London, United Kingdom</u>

## Publications

### Peer- Reviewed Publications

#### First-Author Publications

**Abdullayev, E.**, Paterson, J.R., Kuszynski, E.P., Hamidi, M.D., Nahar, P., Greenwell, H.C., Neumann, A. and Sharples, G.J. (2024). Evaluation of the antibacterial properties of commonly used clays from deposits in central and southern Asia. *Clays and Clay Minerals*, 72, p.e9., <https://doi.org/10.1017/cmn.2024.7>

**Abdullayev, E.**, Baldermann, A., Warr, L.N., Grathoff, G., Taghiyeva, Y. (2021). New constraints on the depositional environment of the Eastern Paratethys: Implications from the Miocene Diatom Suite (Azerbaijan). *Sedimentary Geology* 411, <https://doi.org/10.1016/j.sedgeo.2020.105794>

**Abdullayev, E.** and Leroy, S.A.G. (2018) Clay minerals as palaeoclimatic indicators in the Pliocene Productive Series, western Southern Caspian Basin. *Geological Journal* 53, 2427–2436. <https://doi.org/10.1002/gj.3076>

**Abdullayev, E.** and Leroy, S.A.G. (2016) Provenance of clay minerals in the sediments from the Pliocene Productive Series, western South Caspian Basin. *Marine and Petroleum Geology*, 73, <https://doi.org/10.1016/j.marpetgeo.2016.03.002>

### Co-Author Publications

Nuruzade, O., **Abdullayev, E.**, Erastova V. (2023). Organic–Mineral Interactions under Natural Conditions: A Computational Study of Flavone Adsorption on Smectite Clay. *J. Phys. Chem. C*, 127, <https://doi.org/10.1021/acs.jpcc.3c00174>

Baldermann, A., Wasser, O., **Abdullayev, E.**, Bernasconi, S., Löhr, S., Wemmer, K., Piller, W. E., Rudmin, M., Richoz, S. (2021). Palaeo-environmental evolution of Central Asia during the Cenozoic: New insights from the continental sedimentary archive of the Valley of Lakes (Mongolia). *Clim. Past Discuss* 17, <https://doi.org/10.5194/cp-17-1955-2021>

Baldermann, A., Abbasov, O.R., Bayramova, A., **Abdullayev, E.** and Dietzel, M. (2020) New insights into fluid-rock interaction mechanisms at mud volcanoes: Implications for the fluid Origin and mud provenance at Bahar and Zenbil (Azerbaijan). *Chemical Geology* 537, <https://doi.org/10.1016/j.chemgeo.2020.119479>

Baldermann, A., **Abdullayev, E.**, Taghiyeva, Y., Alasgarov, A. and Javad-Zada, Z. (2020) Sediment petrography, mineralogy and geochemistry of the Miocene Islam Dağ Section (Eastern Azerbaijan): Implications for the evolution of sediment provenance, palaeo-environment and (post-)depositional alteration patterns. *Sedimentology* 67, <https://doi.org/10.1111/sed.12638>

Rudmin, M., Banerjee, S., **Abdullayev, E.**, Ruban, A., Filimonenko, E., Lyapina, E., Kashapov, R. and Mazurov, A. (2020) Ooidal ironstones in the Meso-Cenozoic sequences in western Siberia: assessment of formation processes and relationship with regional and global earth processes. *Journal of Palaeogeography* 9, <https://doi.org/10.1186/s42501-019-0049-z>

Rudmin, M., Reva, I., Sokol E., **Abdullayev, E.** and Ruban, A. (2020) Minerals of rare Earth elements in high-phosphorus Ooidal ironstones of the Western Siberia and Turgai Depression. *Minerals* 10, <https://doi.org/10.3390/min10010011>

Rudmin, M., **Abdullayev, E.**, Ruban, A., Buyakov, A. and Soktoev, B. (2019) Mechanochemical preparation of slow-release fertilizer based on glauconite–urea complexes. *Minerals* 9, <https://doi.org/10.3390/MIN9090507>

## **Other Publications – Research**

Taghiyeva, E.N., Javad-Zada, Z.N. and **Abdullayev, E.A.** (2018) Clay minerals of the Productive Series (Surakhany Suite) and its palaeoclimatic significance. *Geography and Natural Resource*, 2 (8), 3-7, (in Russian)

Taghiyeva, Y. and **Abdullayev, E.** (2016) Biochemical and palaeoenvironmental investigations of the early Pliocene-Productive Series from the western South Caspian Basin. *Stratigraphy and sedimentology of oil-gas basins*, 16, 44-55

## **Conference Contributions – Refereed**

2017 - Plio-Pleistocene Caspian Basin Environment Based on Multiproxy Records: Micropaleontology, Mineralogy and Geochemistry. 17th National Clay Conference, Mugla/Turkey

2015 - Reconstruction of provenance based on clay minerals from the Pliocene Productive Series, western South Caspian Sea. Baku 2015. Increasing the Knowledge about Oil and Gas Reservoir, Baku/Azerbaijan

2015 - Reconstruction of past climate in the source areas based on clay minerals from the Lower Pliocene, western South Caspian Basin. Baku 2015. Increasing the Knowledge about Oil and Gas Reservoir, Baku/Azerbaijan

2013 - Sedimentation on the western flank of the South Caspian Basin (Absheron Peninsula). 4th International Geosciences Student Conference; Germany

2012 - Distribution of clay mineral assemblages in Lower Pliocene sediments and their significance, western flank of the South Caspian Sea. The 74th EAGE Conference & Exhibition incorporating SPE EUROPEC, Denmark