

## **Prof. Rövnaq Rzayev**

### **Personal Information**

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### **International Researcher IDs**

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Publons / Web Of Science ResearcherID: ACC-9551-2022

ScopusID: 36779821200

### **Biography**

**Born on February 12, 1970, in Bilav village, Ordubad district.**

He graduated from secondary school in 1986 and completed his studies at the Faculty of Physics, Baku State University, in 1992.

From 1988 to 1989, he served in the military.

Between 1992-1995, he was a full-time Ph.D. student at the Faculty of Physics, Baku State University. Since 1996, he has been working at the Azerbaijan State University of Economics (UNEC).

In 1993, he started working at the "Solid State Electronics" Scientific Research Laboratory under the Department of "Physical Electronics" at Baku State University, and from 2006 to 2016, he was a research fellow in the "Physics of Semiconductors" Department at the Institute of Physics Problems at Baku State University.

In 1998, he defended his Ph.D. thesis on "Electronic properties of gallium selenide monocrystals doped with dysprosium," earning the degree of Candidate of Physical and Mathematical Sciences.

In 2014, he defended his doctoral dissertation on "The influence of drift barriers on electronic phenomena in crystals of AIIIBVI-type layered semiconductors," receiving the degree of Doctor of Physical Sciences.

By decisions of the Higher Attestation Commission under the President of the Republic of Azerbaijan, he was awarded the academic title of "Associate Professor" in 2004 and "Professor" in 2019.

From 2011 to 2020, he served as Head of the "Physics and Chemistry" Department at UNEC.

From 2020 to 2024, he held the position of Head of the "Engineering and Applied Sciences" Department at UNEC.

Since 2024, he has been appointed Vice-Rector for Science and Innovation at the Azerbaijan State University of Economics (UNEC).

By order No. 188/3/2019 dated March 29, 2019, of the Rector of UNEC, he was appointed as the Scientific Director of the Scientific Research Center for "Composite Materials."

He is a member of the UNEC Scientific Council and the Scientific Council of the Faculty of Engineering.

Author of more than 250 scientific works, including over 60 articles published in reputable international journals indexed in Web of Science and Scopus, 120 scientific articles, 50 international (most of which are abroad) and over 50

national conference materials, 1 textbook, 10 teaching aids, and numerous programs and methodological manuals.

He has repeatedly won international and national grant competitions and has served as a project leader.

Dr. Rzayev is the Editor-in-Chief of the UNEC JOURNAL OF ENGINEERING AND APPLIED SCIENCES: [<https://www.unec-jeas.com/>](<https://www.unec-jeas.com/>)

He is a member of the editorial boards of periodicals such as "Scientific Works" and "Teaching Physics, Mathematics, and Informatics" of the Azerbaijan Technical University, which are included in the list of scientific publications approved by the Higher Attestation Commission under the President of the Republic of Azerbaijan, as well as the "Neftegazovoye Delo" journal published in the Russian Federation and included in the Commission's list (РИИЦ).

From 2017 to 2023, he was a member of the Expert Council on Physics and Astronomy under the Higher Attestation Commission under the President of the Republic of Azerbaijan. Since 2024, he has been appointed as the Chair of the Expert Council.

He was awarded the Honorary Certificate of the Ministry of Science and Education of the Republic of Azerbaijan.

By Presidential Decree dated September 24, 2020, he was awarded the honorary title of "Honored Teacher" on the occasion of the 90th anniversary of the Azerbaijan State University of Economics in recognition of his contributions to the development of education in Azerbaijan.

He is a member of the New Azerbaijan Party.

Married, with three children.

## Research Areas

Physics, Natural Sciences

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Effect of gamma irradiation and Dy atoms on the thermal conductivity of TlInSe<sub>2</sub> crystals**  
Verdieva N., Jafarov M., Rzayev R., Naghiyev T.  
International Journal of Modern Physics B, vol.38, no.3, 2024 (SCI-Expanded)
- II. **Investigation on the structure and thermal properties of HDPE/Ta<sub>2</sub>O<sub>5</sub>-based nanocomposites**  
Huseynova A., Rzayev R., Hajiyeva F.  
Journal of Elastomers and Plastics, 2024 (SCI-Expanded)
- III. **Structural-phase transition in (Cu<sub>2</sub>Te)<sub>2-x</sub>(ZnTe)<sub>x</sub> at high temperature**  
Gasimov H. B., Rzayev R.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.35, no.08, 2021 (SCI-Expanded)
- IV. **Decrease in negative dielectric anisotropy and electric conductivity of 4-methoxybenzylidene-4'-butylaniline doped with fullerenes C<sub>60</sub>**  
Ibragimov T. D., Hashimov A. M., Ibragimov G. B., Rzayev R.  
FULLERENES NANOTUBES AND CARBON NANOSTRUCTURES, vol.29, no.12, pp.951-955, 2021 (SCI-Expanded)
- V. **Dielectric relaxation, electric conductivity, and electro-optic properties of SWCNT-doped liquid crystal 5CB**  
Ibragimov T. D., Rzayev R.  
FULLERENES NANOTUBES AND CARBON NANOSTRUCTURES, vol.28, no.12, pp.982-988, 2020 (SCI-Expanded)
- VI. **The study of heat transfer coefficient while flow unsaturated liquid through the tube at pressure below critical**

Mammadova J. R., Abdullayev A. P., Rzayev R., Mammadova S. H., Sultanov R. A.

MODERN PHYSICS LETTERS B, vol.34, no.27, 2020 (SCI-Expanded)

VII. **The study of temperature regimes of a pipe wall under turbulent regime and supercritical pressures**

Mammadova J. P., Abdullaev A. P., Rzayev R., Kelbaliev R. F., Mammadova S. H., Musazade I. V.

INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.34, no.19, 2020 (SCI-Expanded)

VIII. **Electrical and Photoelectrical Characteristics of  $\text{p-Si/Porous-Si/CdS}$  Heterojunctions**

Mamedov H. M., Kukevecz A., Konya Z., Kordas K., Shah S. I., Mamedov V. U., Ahmedova K. M., Mamedova V. J., Rzaev R., Shamilova S. A., et al.

RUSSIAN PHYSICS JOURNAL, vol.61, no.9, pp.1660-1666, 2019 (SCI-Expanded)

IX. **Study on luminescent properties of  $\text{Tb}^{3+}$  and  $\text{Sm}^{3+}$  co-doped  $\text{CaSiO}_3$  phosphors for white light emitting diodes**

Khan D. T., Dang N. T., Jabarov S. H., Naghiyev T., Rzayev R., Nguyen T. Q., Tuyen H., Thanh N. T., Son L. V. T.

MATERIALS RESEARCH EXPRESS, vol.7, no.1, 2019 (SCI-Expanded)

X. **Bandfilling effect in GaSe and InSe at high optical exchange levels**

Rzayev R.

CHALCOGENIDE LETTERS, vol.16, pp.465-469, 2019 (SCI-Expanded)

XI. **On the specific electrophysical properties of  $\text{n-InSe}$  single crystals**

Abdinov A. S., Babaeva R., Rzaev R., Ragimova N. A., Amirova S. I.

SEMICONDUCTORS, vol.50, no.1, pp.34-37, 2016 (SCI-Expanded)

XII. **Effects of temperature and rare-earth doping on the transport properties of GaSe crystals**

Abdinov A. S., Babaeva R., Ragimova N. A., Rzaev R., Amirova S. I.

INORGANIC MATERIALS, vol.50, no.4, pp.334-338, 2014 (SCI-Expanded)

XIII. **Effect of light on the mobility of free carriers in indium-monoselenide crystals**

Abdinov A. S., Babayeva R., Amirova S. I., Ragimova N. A., Rzayev R.

SEMICONDUCTORS, vol.48, no.8, pp.981-985, 2014 (SCI-Expanded)

XIV. **Electric-field effect on the electrical conductivity of InSe and InSe $\text{O}_x$  crystals**

Abdinov A. S., Babaeva R., Gasanov Y. G., Ragimova N. A., Rzaev R.

INORGANIC MATERIALS, vol.49, no.12, pp.1180-1186, 2013 (SCI-Expanded)

XV. **Effect of temperature and rare-earth doping on charge-carrier mobility in indium-monoselenide crystals**

Abdinov A. S., Babayeva R., Amirova S. I., Rzayev R.

SEMICONDUCTORS, vol.47, no.8, pp.1013-1017, 2013 (SCI-Expanded)

XVI. **Electric field effect on photoconductivity decay in  $\text{n-InSe}$  single crystals**

Abdinov A. S., Babaeva R., Rzaev R.

INORGANIC MATERIALS, vol.48, no.8, pp.781-785, 2012 (SCI-Expanded)

XVII. **Temperature dependence of carrier mobility in undoped and gadolinium-doped  $\text{p-GaSe}$  crystals**

Abdinov A. S., Babaeva R., Rzaev R., Amirova S. I.

INORGANIC MATERIALS, vol.48, no.6, pp.559-562, 2012 (SCI-Expanded)

XVIII. **Dependence of carrier mobility on an electric field in gallium selenide crystals**

Abdinov A., Babaeva R., Rzayev R.

SEMICONDUCTORS, vol.46, pp.730-735, 2012 (SCI-Expanded)

XIX. **Electrical conductivity of undoped and rare-earth-doped high-resistivity GaSe crystals**

Abdinov A. S., Allakhverdiev S. A., Babaeva R. F., Rzaev R.

INORGANIC MATERIALS, vol.45, pp.723-727, 2009 (SCI-Expanded)

XX. **Effect of rare-earth doping on the electrical properties of InSe single crystals**

Abdinov A. S., Babaeva R. F., Bagirova A. T., Rzaev R.

INORGANIC MATERIALS, vol.42, pp.937-941, 2006 (SCI-Expanded)

XXI. **Photoluminescence of Rare-Earth-Doped InSe and GaSe Single Crystals**

Abdinov A. S., Babaeva R. F., Rzaev R., Gasanov G. A.

INORGANIC MATERIALS, vol.40, pp.567-569, 2004 (SCI-Expanded)

## XXII. Effect of Dy Doping on the Photoelectric Properties of GaSe Single Crystals

Abdinov A., Babaeva R., Dzhafarov M., Nurullaev Y., Rzaev R.  
INORGANIC MATERIALS, vol.34, pp.205-206, 1998 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Recent advances in the synthesis of trifluoromethyl ethers through the direct O-trifluoromethylation of alcohols**  
Niyazova A., Hüseyinov M., Rzayev R., Musayeva V.  
Chemical Review and Letters, vol.7, no.8, pp.742-753, 2024 (Scopus)
- II. **Recent Advances in Vicinal Fluorochalcogenation of Olefins**  
Rzayev R., Niyazova A. A., Mirzoev G. S., Albeer A. A. M. A.  
Chemical Review and Letters, vol.7, no.3, pp.677-688, 2024 (Scopus)
- III. **Crystal structure and Hirshfeld surface analysis of 6-amino-8-(2,6-dichlorophenyl)-1,3,4,8-tetrahydro-2*H*-pyrido[1,2-*a*]pyrimidine-7,9-dicarbonitrile**  
Naghiyev F. N., Tereshina T. A., Khrustalev V. N., AKKURT M., Rzayev R., Akobirshoeva A. A., Mamedov I. G.  
ACTA CRYSTALLOGRAPHICA SECTION E-CRYSTALLOGRAPHIC COMMUNICATIONS, vol.77, pp.516-521, 2021 (ESCI)
- IV. **Crystal structure and Hirshfeld surface analysis of 6-benzoyl-3,5-diphenylcyclohex-2-en-1-one**  
Naghiyev F. N., AKKURT M., Askerov R. K., Mamedov I. G., Rzayev R., Chyrka T., Maharramov A. M.  
ACTA CRYSTALLOGRAPHICA SECTION E-CRYSTALLOGRAPHIC COMMUNICATIONS, vol.76, pp.720-723, 2020 (ESCI)
- V. **Multifunctional photodetectors based on the n-InSe crystals**  
Abdinov A., Mehtiyev N., Babayeva R., Rzayev R.  
Applied Physics, no.6, pp.76-80, 2014 (Scopus)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Photodetectors for visible and near infra-red region with controlled sensitivity on the basis of p-GaSe single crystals doped by rare-earth elements**  
Abdinov A., Babayeva R., Bagirova A., Rzaev R.  
Proceedings of SPIE - The International Society for Optical Engineering, Moscow, Russia, 23 - 26 May 2006, vol.6636, pp.66360-70612
- II. **The effect of doping by rare earth elements on initial and sensitized IR-photosensitivity of layered indium selenide crystals**  
Abdinov A., Babayeva R., Rzayev R., Eyvazova G.  
Proceedings of SPIE - The International Society for Optical Engineering, Moscow, Russia, 25 - 28 May 2004, vol.5834, pp.299-303

## Metrics

Publication: 32

Citation (WoS): 245

Citation (Scopus): 333

H-Index (WoS): 11

H-Index (Scopus): 11