



**INSTITUTE OF RADIATION PROBLEMS, MINISTRY OF SCIENCE AND  
EDUCATION REPUBLIC OF AZERBAIJAN  
FRANK LABORATORY OF NUCLEAR PROBLEMS AT THE JOINT INSTITUTE  
FOR NUCLEAR RESEARCH  
CIRRICULUM VITAE and PUBLICATION LIST**

**Kanan M. Hasanov**

Address: Institute of Radiation Problems, Ministry of Science and  
Education Republic of Azerbaijan, Baku, AZ1143, Azerbaijan

Email: [hasanovkanan11@gmail.com](mailto:hasanovkanan11@gmail.com) | Telephone: +9259787785  
+994503613332



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***PERSONAL INFORMATION***

<b>Name</b>	<b>Kanan</b>
<b>Surname</b>	<b>Hasanov</b>
<b>Address</b>	Institute of Radiation Problems, Ministry of Science and Education Republic of Azerbaijan, Baku, AZ1143, Azerbaijan
<b>e-mails</b>	<a href="mailto:hasanovkanan11@gmail.com">hasanovkanan11@gmail.com</a>
<b>Date of birth</b>	17.02.1998

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***PERSONAL STATEMENT***

In a general sense, my research aims to uncover how alterations in the structure of solids, brought about by various radioactive conditions, influence the properties of these materials. I employ X-ray and neutron diffraction techniques as tools in this endeavor. My research interests predominantly revolve around gaining a deeper comprehension of material properties crucial for shielding against different forms of radiation, such as gamma rays, neutrons, electrons, and ion irradiations.

As an associate researcher at the Frank Laboratory of Neutron Physics, situated at the Joint Institute for Nuclear Research, I have accumulated substantial expertise in nuclear-related disciplines, with a particular focus on the development of shielding materials for nuclear applications. My work encompasses the investigation of damage induced by irradiation, the analysis of the consequences of diverse types of radiation, and the examination of the stability of microstructure, elemental composition, and phase composition under ion radiation.

The core of my scientific research centers on the analysis of structural and phase states in advanced nano-composite materials designed for nuclear applications.

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### **EDUCATION**

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|-------------------------|---|
| 22/11/2022 - Present    | <b>Ph. D student (Radiation materials science)</b><br>Institute of Radiation Problems, Azerbaijan             |
|                         | <b>Research Topic:</b> Effect of proton beams on the physical properties of nano-sized TiN-TiC layered films. |
| 15/09/2020 - 15/07/2022 | <b>Master's in physics (Physics of nanoparticles)</b><br>Baku State University, Azerbaijan                    |
|                         | <b>Research Topic:</b> Optical properties of silver nanowire-based polymer nanocomposite                      |
| 15/09/2015 - 10/07/2020 | <b>Bachelor's in physics</b><br>Baku State University, Azerbaijan   |
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### **EMPLOYMENT HISTORY**

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|-------------------------|---|
| 17/04/2023 - Present    | <b>Junior Scientific Researcher</b><br>Joint Institute for Nuclear Research,<br>Laboratory of "Frank Laboratory of Neutron Physics", Dubna, Russia  |
| 16/01/2023 - Present    | <b>Junior Scientific Researcher</b><br>Institute of Radiation Problems,<br>Laboratory of "Radiation Physics of Disordered Solids", Baku, Azerbaijan |
| 14/10/2021 - 16/01/2023 | <b>Senior Laboratory Assistant</b><br>Institute of Radiation Problems,<br>Laboratory of "Radiation Physics of Disordered Solids", Baku, Azerbaijan  |
| 01/09/2015 - 11/12/2021 | <b>Laboratory Assistant</b><br>Institute of Radiation Problems,<br>Laboratory of "Radiation Physics of Disordered Solids", Baku, Azerbaijan         |
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### **ADDITIONAL SKILLS / RESEARCH INTEREST**

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- Real-time neutron diffraction.
  - X-ray spectroscopy.
  - UV-Visible spectroscopy

### **COMPUTER SKILLS**

- Origin Lab (Graphing for Science and Engineering).
- HighScore Plus| XRD Analysis Software.
- FullProf Suite| Suite of Crystallographic Software.
- KOMPAS-3D| Computer Aided Design.

### **CERTIFICATE**

2021 IEEE NTC Summer School on Nanotechnology - „Nanomaterials and Nanotechnologies for Advanced Energy Systems”  
20-24 September 2021, "Ovidius" University of Constanta, Romania

“1ST ICESCO WORKSHOP ON FUNDAMENTALS OF INSTRUMENTATION  
& REVERSE ENGINEERING”

4-7 October 2021, Baku State University, Baku, Azerbaijan

“Self-sufficient humidity to electricity Innovative Radiant Adsorption System  
Toward Net Zero Energy Buildings”

18-20 July 2022, Baku, Azerbaijan

**Participating projects**

- SCIENCE DEVELOPMENT FOUNDATION UNDER THE PRESIDENT OF THE REPUBLIC OF AZERBAIJAN

**Publications last 3 years**

1. Nuriyeva, S.G., Shirinova, H.A., Hasanov, K.M. and Hajiyeva, F.V., 2023. Controlled Synthesis of Silver Nanowires: Production and Characterization. *Acta Physica Polonica A* ISSN 1898-794X, 143(4), pp.279-279.
2. Mirzayev, M.N., Parau, A.C., Slavov, L., Dinu, M., Neov, D., Slavkova, Z., Popov, E.P., Belova, M., Hasanov, K., Aliyev, F.A. and Vladescu, A., 2023. TiSiCN as Coatings Resistant to Corrosion and Neutron Activation. *Materials*, 16(5), p.1835.
3. Mirzayev, M.N., Hasanov, K.M., Parau, A.C., Demir, E., Abiyev, A.S., Karaman, T., Jabarov, S.H., Dinu, M., Popov, E.P. and Vladescu, A., 2023. Effect of the C/N ratio modification on the corrosion behavior and performance of carbonitride coatings prepared by cathodic arc deposition. *Journal of Materials Research and Technology*.
4. Vladescu, A., Mirzayev, M.N., Abiyev, A.S., Asadov, A.G., Demir, E., Hasanov, K.M., Isayev, R.S., Doroshkevich, A.S., Jabarov, S.H., Lyubchik, S. and Lyubchik, S., 2023. Effect of Si and Nb additions on carbonitride coatings under proton irradiation: A comprehensive analysis of structural, mechanical, corrosion, and neutron activation properties. *Nuclear Materials and Energy*, p.101457.
5. 1D quruluşlu Ag gümüş nanonaqillərin sintezi  
BDU, Tələbələrin VI Respublika elmi konfransı Gələcəyin alimləri, 3 may 2021-ci il, Bakı, Azərbaycan, səh.63-64
6. Modifikasiya edilmiş poliol üsulla 1D quruluşlu gümüş nanonaqillərinin sintezi  
BDU, magistrantların və gənc tədqiqatçıların XXI ümumrespublika elmi konfransı Fizika və astronomiya problemləri, 21 may 2021-ci il, Bakı, Azərbaycan, səh.127-128
7. Polipropilen və gümüş nanonaqil əsaslı strukturların sintezi və quruluşu  
BDU, “Şuşa ili”nə həsr olunmuş XXII Respublika elmi konfransı “Fizika və Astronomiya problemləri”, 20 may 2022-ci il, Bakı, Azərbaycan, səh.132-133
8. STRUCTURE AND OPTICAL PROPERTIES OF Ag NANOWIRES  
7th International Conference MTP-2021: Modern Trends in Physics 85-86, 2021