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

Samir F. Samadov

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PERSONAL INFORMATION

Name	**Samir**
Surname	**Samadov**
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Date of birth	28.07.1989

PERSONAL STATEMENT

My primary research focuses on the experimental nuclear physics such as the investigation of radiation effects and defects and positron annihilation lifetime spectroscopy in solids under different types of radiation conditions. I am particularly interested in understanding behaviors of the substances that are prominent materials for radiation shielding against gamma, neutron, electron and ion irradiations. As an associate professor at Dzhelepov Laboratory of Nuclear Problems at the Joint Institute for Nuclear Research, I have gained precious experience in the nuclear topics such as shielding materials for nuclear applications, irradiation damage and analysis and studies of ion—radiation stability of microstructure, elemental and phase compositions. The scientific field of my researches connected with structure and phase state investigation of promising nanocomposite materials for nuclear applications. Pure boron compounds and boron-tungsten based composite materials were used in the experimental process that had been irradiated by alfa, neutrons, ions, and electron and flows of high-energy charged particles. My research area mainly focuses boron and tungsten alloys

that are prominent materials due to their high melting point, low vapour pressure, very low sputtering erosion yields and high thermal conductivity for armour materials of plasma facing components. On the other hand, its limitations are associated with handling at low temperatures, plasma compatibility including neutron irradiation and radiological issues.

EDUCATION

11/2021

Supreme Attestation Commission under the President of the Republic of Azerbaijan | Baku, Azerbaijan
By the decision dated Novtmber 26, 2021 confers on Samir F. Səmədov the academic title of PhD in Physics in the Specialty of Radiation Materials Science

01/2017 – 01/2021

Institute of Radiation Problems, Azerbaijan National Academy of Sciences| Baku, AZ1143 Azerbaijan
Ph.D: Radiation material science, application and technology
Thesis Title: Effect of ionizing radiation on dielectric, electrical properties and impedance of $TlInS_2$, $TlGaSe_2$ crystals
Degree: Ph. D on Physics, Senior Scientist

09/2011 – 07/2013

Azerbaijan State Pedagogical University | Baku, AZ1000 Azerbaijan
MSc: Division of Physics Education, Master Program, Faculty Physics of Solid State

09/2006 – 07/2010

Baku State University, Faculty of Physics | Baku, AZ1143 Azerbaijan
BSc: Division of Physics Education, Bachelor Program, Faculty of General Physics

EMPLOYMENT HISTORY

01/09/2015 – Present

Senior researcher| Dzhelepov Laboratory of Nuclear Problems **at the Joint Institute for Nuclear Research.**
Scientific and Experimental Physical Department: Ion-implantation nanotechnology and radiation materials science
Dubna, Russia

01/09/2011 – present

Research Fellow | Institute of Radiation Problems, Azerbaijan National Academy of Sciences| Baku, AZ1143 Azerbaijan
Title of department: Radiation Physics of Irregular Solids.
Position: Researcher
I studied the topics as shown below during this period:

- **Acquaintance with gamma irradiation technique and irradiation of composites by high-energy electrons.**
- **Electrophysical properties of boron composites irradiated by gamma and ions.**
- **Analysis and studies of ion—radiation stability of microstructure, elemental and phase compositions.**
- **Investigation of surface modifications and phase transformation of composite materials under the high gamma irradiation conditions.**

ADDITIONAL SKILLS / RESEARCH INTEREST

I have been working as a research assistant at the Dzhelepov Laboratory of Nuclear Problems at the Joint Institute for Nuclear Research since 2015. In the meantime, I also have some responsibilities to give lectures at the following laboratories.

- Radiation measurement techniques
- Positron Annihilation Lifetime Spectroscopy
- Doppler Broadening Spectroscopy
- XRF Analyses
- XRD Analyses
- SEM Analyses
- Energy-dispersive X-ray spectroscopy (EDS, EDX)
- The investigation on behaviour of soil samples against radiation
- Selection of tracer injection and sampling procedures
- Raman Spectroscopy
- Small Angle Neutron Scattering (SANS)
- Differential Scanning Calorimetry (DSC) Thermal Analysis.
- Thermogravimetric Analysis (TGA)

Publications last 5 years

1. Samir F. Samadov Investigating the dielectric properties and low-frequency relaxation process of TlGaSe2 crystals. Oktay Samadov, Oktay Alakbarov, Arzu Najafov, Samir Samadov, Nizami Mehdiyev, Elchin Huseynov. Modern Physics Letters B. 2017/4/30
2. The study of the influence of gamma radiation on dielectric properties of TIGaSe2 crystals. OA Samedov, OZ Alakbarov, A Najafov, N Mehdiyev, SF Samadov, Kh B Nadirova. Journal of Radiation Researches. 2018, 5 (1) 66-72.
3. Study of the optical and electrical properties of a TIInS2 crystal after implantation of hydrogen and helium ions. M Kulik, SF Samedov, OA Samedov, OZ Alekperov, D Kolodynska, A Oleinchak, NM Mehdiyev. Journal of Radiation Researches. 2018 5(2) 62-66.
4. Dielectric and electrical properties of near-surface layers of TlInS2 crystals under the proton irradiation. SF Samadov, OA Samedov, OZ Alekperov, M Kulik, AI Najafov, NM Mehdiyev, EM Huseynov. International Journal of Modern Physics B. 2019/10/30, 33 (27), 1950320
5. Impedance spectrum of TlGaSe2 crystal implanted with He+ ions. Journal of Radiation Researches. SF Samadov. 2019, 6(2) 44-49
6. Electrical impedance investigation of gamma-irradiated TlInS crystals. OA Samedov, OZ Alekperov, Kh B Orudjova, SF Samedov, NM Mehtiyev, AI Nadjafov, IA Gabulov, EM Huseynov. International Journal of Modern Physics B. 2021/1/10. 35(1) 2150009.
7. Dielectric permittivity and relaxation process investigation of C-doped TlInS2 crystals. OA Samedov, OZ Alekperov, Kh B Orujova, Aİ Nadjafov, EM Huseynov, SF Samedov, İA Gabulov, NM Mekhtiyev. Modern Physics Letters B. 2021/7/20. 35(20)2150325.

Those currently in print

8. *Investigating the Crystal Structure of ZrB_2 Under Varied Conditions of Temperature, Pressure, and Swift Heavy Ion Irradiation. S.F. Samadov, A.S. Abiyev, A.G. Asadov, N.V.M.*

Trung, A.A. Sidorin, O.A. Samedov, E.P. Popov, E. Demir, T. Vershinina, Y.I. Aliyev, K.M. Hasanov, V.A. Skuratov, M.N. Mirzayev. Ceramics International. 5.2 impact factor (In print).

9. *Investigation of radiation defect formation of irradiated n-Si<Pt>. Sh.B. Utamuradova, Sh.Kh. Daliev, D.A. Rakhmanov, S.F. Samadov, A.S. Doroshkevich. Advanced Physical Research. Vol.6 (3) 2023. Journal of Scopus. (In Print).*
10. *Exploring the radiation shielding properties of hard tungsten and tungsten carbide materials with a focus on point defect polarization at high gamma irradiation doses. Aleksey A. Sidorin, Nguyen V.M. Trung, Oleg S. Orlov, Samir F. Samadov, Alexander A. Donkov, Matlab N. Mirzayev,Zarif A. Sharipov, Hokman M. Mahmudov, Ondrej Šauša, Le H. Khiem, Oqtay A. Samedov, Huseyn J. Huseynov, Evgeni P. Popov. Nuclear Materials and Energy. 3.037 impact factor (In print).*
11. *Post-γ-irradiation effects in nano-SiO 2 particle reinforced high-density polyethylene composite films:hierarchical structure, characterization of defects, thermal stabilitybehavior and degradation mechanism. A.A. Nabiyev, A. Olejniczak,O.I. Ivankov, M.A. Nuriyev, A.A. Sidorin, O. S. Orlov, S. Samedov, O.V. Tomchuk, ,A.S. Doroshkevich, A.K. Azhibekov, F. Napolsky, E. Andreev, O.Yu. Ivanshina and A.Pawlukojc. Nanomaterials. 5.7 impact factor (In print).*