**Form 2**



# AZERBAIJAN SCIENCE FOUNDATION

**CALL FOR GRANT PROPOSALS**

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| **8TH GRANT COMPETITION**  **FOR YOUNG SCIENTISTS AND**  **RESEARCHERS**  **Proposals for fundamental and applied scientific researches**  **AEF-GAT-8-2024-1(49)** |  | **PROPOSAL CONTENT AND ITS JUSTIFICATION** |

***Volume: not more than 20 pages; mandatory font: Arial, size 12 pt, line spacing - 1***

**TITLE OF THE PROPOSAL: The XXXXXXXXXXXXXXXXXXXXX**

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| **1.Objectives, goals and actuality of the grant proposal, justification of multidisciplinary characters of the proposal** |
| The main purpose of the presented project is to investigate the formation and thermal properties of ................................... |
| **2. Project annotation**  ***not more than 1 page***  *(annotation must reflect the content, purpose /goal, scientific idea, expected results, scientific and practical importance of the proposal concisely and clearly)*  As the temperature increases, the distant magnetic that ionizing radiation can induce certain structural changes in nanoparticles. xxxxxxxxxxxxxxxxxxxxxxxxx  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx |
| **3. Keywords and/or phrases fully reflecting the content of proposal**  *(****not more than 10;*** *please, separate the words and phrases with a semi-colon “;”)*  X-ray diffraction; Scanning Electron Microscopy; Raman spectroscopy; Differential Thermal Analysis; Thermogravimetric Analysis |
| **4. Scientific direction of the proposal and brief review on the proposed scientific problem**  ***not more than 5 pages***  *(please, describe the state-of-the-art status of the project problem; describe the most important results of world specialists in the field of the proposal in a concise and comparative way; indicate scientists and scientific organizations doing the similar researches; characterize scientific achievements and experience of project authors; state unsolved problems and gaps; give references of important results of the scientific works of the recent years in this field (including those of project manager and project participants)* |

Y.Safarov street, 27, AZ-1025, Baku, the Republic of Azerbaijan

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| Extensive research is being conducted on the structure and thermal properties of nanomaterials under the influence of ionizing radiation.  .  **Literature**  1. Bashirova S.M. Obtaining Molecular Hydrogen from Water Radiolysis in the nano-SiO2(d=20nm)/H2O System Under the Influence of γ –Quanta Cambridge University Press, Experimental Results UK, 2023  2. Bashirova S.M. Qəribov A.A., Ağayev T.N., İmanov G.T., Əliyev A.M, Cəfərov Y.D. Mechanism of hydrogen production in the processes of radiation-heterogeneous splitting of water with the presence of nano-metal and NANO-MeO1, EAST EUROPEAN JOURNAL OF PHYSICS. 2024 |
| 5. **Scientific idea of the proposal**  *(original idea or scientific hypothesis that requires proof; state it accurately; don’t repeat what is stated above*  *under item 1; describe the level of originality of the idea)*  "Nanomaterials are materials that possess certain properties at small scales. |
| **6. Structure of the research**  *(describe research plan and stages, including research methods to be used)* |
| "The project presented aims to be completed in 4 stages over a period of 2 years:  **7. Expected results of the project, their scientific and practical importance**  *(identify expected results and their characteristics and forms - conception, theory, new methods, materials, etc.)*  Studying the effect of ionizing radiation on the surface structure, |
| 8. **Areas where expected results could be used or applied**  *(mention the areas and concrete scientific directions of possible use and application of the expected results)* |
| 9. **Characterization of the scientific collective/staff**  *(indicate accordance of the project manager’s and participants’ professions to project content and goals as well as their experience in conducting of similar research projects)* |
| **Bəşirova Sevinc Məhəmmədhəsən qızı holds a PhD in Philosophy in Physics, specializing in Radiation Materials Science. By defending her dissertation on radiation material science, she obtained the academic title of Doctor of Philosophy in Physics. She conducts extensive research on the physical-chemical properties of nanomaterials and the impact of radiation exposure on nanomaterials. She is the author of several articles and conference materials based on the acquired data.**  **Cabbarlı Bibixanım Ravayət: She is an opiotechnician by profession. She is a doctoral student of Azerbaijan Technical University. She is the author of 10 articles related to her dissertation work.**  **Ağakişizadə Arzu Mehti qızı: She is an engineer by profession. She is a doctoral student of National Aerospace Agensy. She is the author of 5 articles related to her dissertation work.** |
| **10. Information about existence of the equipment, instruments and tools required for implementation of the researches within proposed project and justification of additionally required ones** |
| To execute the presented project, the following research methods will be utilized:  1  2.  3.  4.  5. |
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| 11. **Information about the participation of the project manager and all participants in previous grant projects either financed by the Science Development Foundation or other domestic, regional and international grant projects**  *(for each previous participation, please, indicate the type of the proposal, proposal title, year and code of grant competition, names of science field and science direction, duration of project and results of project implementation; current state of project under implementation; briefly state the principal difference of this proposal from previous proposals)* |
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| **Project manager**  **Bashirova Sevinc Mammadhasan** | **Project manager’s signature and date** |

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