

CURRICULUM VITAE

First name: Garnik
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EDUCATION

2007-2011 - Bachelor of Chemistry, Faculty of Chemistry, Yerevan State University
2011-2013 - Master of Chemistry, Department of Colloidal Solutions and Physical Chemistry, Faculty of Chemistry, Yerevan State University
2015-2020 - Ph.D in Chemistry, A.B. Nalbandyan Institute of Chemical Physics, NAS RA

RESEARCH & WORKING EXPERIENCE

2013-2014 - RA Armed Forces, Mechanized Infantry Battalion, Infantryman
2014-2020 - Junior researcher, A.B. Nalbandyan Institute of Chemical Physics, NAS RA
2021- to date - Researcher, A.B. Nalbandyan Institute of Chemical Physics, NAS RA

PROJECTS

2014 - "Obtaining alloys of transition metals with high hydrogen sorption properties using SHS and "Hydride Cycle" methods and application of nuclear methods to characterize their microstructures"

Grant **20DP-1D03**. Ministry of Science and Education of Republic of Armenia. Project Title: Development of SHS Technologies for Hydrides of Titanium, Zirconium and Their Intermetallic Compounds as High-Energy Additives or Components of Reactive Materials. **Investigator**. Period Covered: **2020-2022**.

Grant **21AG-2F059**. Ministry of Science and Education of Republic of Armenia. Project Title: Development of a Technological Process for the Synthesis of Multicomponent, Multifunctional Alloys of Refractory Metals and Intermetallic Compounds, Promising as Modern Construction Materials and Hydrogen Accumulators. **Co-principal Investigator**. Period Covered: **2021-2026**.

2022-2024 - "Synthesis of Applied (Commercial) Titanium Based Alloys by Hydride Cycle"

LANGUAGES

Armenian (native), Russian, English

COMPUTER SKILLS

Windows, Microsoft office, Corel Draw, etc.

PUBLICATIONS Articles

1. Muradyan G.N.// Peculiarities of Formation of Zirconium Aluminides in Hydride Cycle Mode. *Chemical Journal of Armenia*, 2016, v.69, №4, pp.416-427. [in Russian]

2. Muradyan G.N.// The Mechanism of Formation in Hydride Cycle of Titanium and Zirconium Based Tri-Aluminides. *Chemical Journal of Armenia*, 2017, v.70, №3, c.323-336.[in Russian]
3. Dolukhanyan S.K., Ter-Galstyan O.P., Aleksanyan A.G., Muradyan G.N. and Mnatsakanyan N.L.// Formation of Titanium and Niobium Aluminides Induced by Hydrogen in a Hydride Cycle. *Journal of Chemical Physics*, 2017, v.36, №4, c.32-42. [in Russian]
4. Dolukhanyan S.K., Ter-Galstyan O.P., Aleksanyan A.G., Muradyan G.N. and Mnatsakanyan N.L.// Formation of Titanium and Niobium Aluminides Induced by Hydrogen in the Hydride Cycle. *Russian Journal of Physical Chemistry B*, 2017, v.11, №2, pp. 272–281.
5. Dolukhanyan S.K., Muradyan G.N., Aleksanyan A.G., Ter-Galstyan O.P. and Mnatsakanyan N.L.// Physical and Chemical Peculiarities of Formation of Aluminides of IV–V Groups Metals in Hydride Cycle. *International Scientific Journal of Alternative Energy and Ecology (ISJAE)*, 2018, №13-15, pp.122-140. [in Russian]
6. Dolukhanyan S.K., Aleksanyan A.G., Muradyan G.N., Shekhtman V.Sh., Ter-Galstyan O.P., Hakobyan H.G., Aghajanyan N.N. and Mnatsakanyan N.L.// Hydrides of Transition Metals and Alloys as Condensed Hydrogen Carriers. *Chemical Journal of Armenia*, 2018, v.71, №4, pp.495-516.
7. Muradyan G.N., Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P. and Mnatsakanyan N.L.// Regularities and Mechanism of Formation of Aluminides in the TiH₂-ZrH₂-Al System in Hydride Cycle. *Journal of Chemical Physics*, 2019, v.38, №1, c.38–48. [in Russian]
8. Muradyan G.N., Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P. and Mnatsakanyan N.L.// Regularities and Mechanism of Formation of Aluminides in the TiH₂-ZrH₂-Al System. *Russian Journal of Physical Chemistry B*, 2019, v.13, №1, pp. 86–95.
9. Aleksanyan A.G., Dolukhanyan S.K., Ter-Galstyan O.P., Muradyan G.N., and Mnatsakanyan N.L.// Formation Ti₆Al₄V Alloy by Hydride Cycle Mode and its (Ti₆Al₄V)H_{1.606} Hydride in Self-Propagating High-Temperature Synthesis Mode. *International Journal of Hydrogen Energy*, 2021, v.46, №29, pp.15738- 15747.
10. Hayrapetyan S.G., Dashtoyan H.R., Muradyan G.N., Sasuntsyan M.E.// Investigating the Composition and Phase Structure of the Technogenic Product of Mineral Raw Materials of Armenia. *Proceedings of NPUA - Metallurgy, Material science, Mining engineering*, 2021, v.2, pp.9-17. [in Russian]
11. Dolukhanyan S.K., Aleksanyan A.G., Muradyan G.N., Ter-Galstyan O.P., Mnatsakanyan N.L. and Mnatsakanyan A.S.// Production of Alloys Based on Ti-Nb-Zr, Promising for the Production of Implants. *Journal of Chemical Physics*, 2021, v.40, №7, pp.76–84. [in Russian]
12. Dolukhanyan S.K., Aleksanyan A.G., Muradyan G.N., Ter-Galstyan O.P., Mnatsakanyan N.L. and Mnatsakanyan A.S.// Production of Alloys Based on Ti-Nb-Zr, Promising for the Production of Implants. *Russian Journal of Physical Chemistry B*, 2021, v.15, №4, pp.740–747.
13. Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P., Muradyan G.N., Mnatsakanyan N.L., Asatryan K.V., Mnatsakanyan A.S.// Formation of the Ti₂AlC Max-Phase in a Hydride Cycle From a Mixture of Titanium and Aluminum Carbohydride Powders. *Journal of Chemical Physics*, 2022, v.41, №1, c.52–59. [in Russian]
14. Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P., Muradyan G.N., Mnatsakanyan N.L., Asatryan K.V., Mnatsakanyan A.S.// Formation of the Ti₂AlC Max-Phase in a Hydride Cycle From a Mixture of Titanium and Aluminum Carbohydride Powders. 2022, v.16, №1, pp.76–83.
15. Aghajanyan N.N., Dolukhanyan S.K., Ter-Galstyan O.P., Muradyan G.N.// Homogenizing Role of Hydrogen in the Synthesis of Multicomponent Carbohydrides and Nitridohydrides of Transition Metals in the Combustion Mode. *Ceramics International*, 2022, v.48, №1, pp.42-47.

CONFERENCE & SYMPOSIUMS

1. Muradyan G.N., Dolukhanyan S.K., Ter-Galstyan O.P., Mnatsakanyan N.L.// Formation of Zirconium Aluminides in Hydride Cycle Mode. IV International conference «Current problems of chemical physics». Yerevan, Armenia, 5-9 October, 2015.
2. Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P., Muradyan G.N., Mnatsakanyan N.L., Shekhtman V.Sh.// Formation of Aluminides in the Ti-Al-Nb System in Hydride Cycle. IV International conference «Current problems of chemical physics». Yerevan, Armenia, 5-9 October, 2015.
3. Dolukhanyan S.K., Muradyan G.N., Aleksanyan A.G., Ter-Galstyan O.P., Mnatsakanyan N.L., Hakobyan H.G.// Regularities and Mechanism of Formation of Aluminides in TiH₂-ZrH₂-Al System. XIV International symposium on self-propagating high temperature synthesis. Tbilisi, Georgia, 25-28 September, 2017.
4. Dolukhanyan S.K., Ter-Galstyan O.P., Aleksanyan A.G., Muradyan G.N., Mnatsakanyan N.L.// Regularities and Mechanism of Formation of Aluminides in the TiH₂-ZrH₂-Al System. V Scientific Conference of the Armenian Chemical Society: ArmCS-5. Yerevan, Armenia, 3-7 October, 2017.
5. Muradyan G.N., Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P., Mnatsakanyan N.L.// Peculiarities of Formation of Titanium and Zirconium Aluminides in Hydride Cycle Mode. V International conference «Current problems of chemical physics». Yerevan, Armenia, 25-29 September, 2018.
6. Lempert D.B., Soglasnova S.I., Dolukhanyan S.K., Muradyan G.N., Aleksanyan A.G.// Perspectives for Replacing Aluminum as an Energy Component of Rocket Propellants with a Mixture of Aluminum with Zirconium or Intermetallic Compounds of These Metals. VI Scientific Conference of the Armenian Chemical Society: ArmCS-6. Yerevan, Armenia, 7-11 October, 2019.
7. Muradyan G.N., Dolukhanyan S.K., Ter-Galstyan O.P., Mnatsakanyan N.L., Mnatsakanyan A.S.// Physical and Chemical Peculiarities of Formation of Aluminides of IV–V Groups Metals in Hydride Cycle. VI Scientific Conference of the Armenian Chemical Society: ArmCS-6. Yerevan, Armenia, 7-11 October, 2019.

RESEARCH SKILLS

Conceptualization, Methodology, Investigation, experimental analysis by Self-propagating High-temperature synthesis (SHS) and Hydride Cycle methods.

Synthesis and characterization of refractory metal hydrides, alloys, alloy's hydrides, Max Phase, etc.

X-ray, differential thermal analysis (DTA), etc.