

Curriculum Vitae

Personal Data:

name Dolukhanyan Seda Karenovna
born June 4, 1939 *Nationality:* Armenian
place of birth Yerevan
parents Mr. Karen Dolukhanyan, Dipl. Eng., and Mrs Voski Dolukhanyan
Dipl. Chemist
children son, Dolukhanyan Karen 1962, architect- painter
legal status married with Prof. Veniamin Sh. Shekhtman, Dr.Sci., Insitute of
Solid State Physics of RAS (Moscow district, Chernogolovka)

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Education:

1956 high-school in Yerevan.
1956 – 1961 student at the Yerevan Polytechnical Institute, Dept. Mechanical
Engineering. Final Degree: MS, Diplom Engineer.
1968 – 1971 Ph.D student at the High Pressure Physics Institute of USSR AS,
1971 Moscow. Final Degree: Ph.D; The title of the thesis (The
development of high-pressure technique of Diamond Synthesis)
1985 **Doctor of Sciences, Institute of the Material Science Problems of
Ukr.SSR AS. Thesis: The title of the thesis “The synthesis of transition metals
hydrides on combustion regime”. Специальность 05.16.06 – Порошковая
металлургия и композиционные материалы**

Победитель конкурса «ста эффективных научных сотрудников -2013 г Армении»,
«Արդյունավետ գիտաշխատող - 2013» մրցույթի

Employments:

1961-1964 Armenian Institute of Mashinery, Engineer-Researcher, Yerevan
1964-1967 Factory of Synthetic Diamonds Senior Tecnolog-Engineer, Yerevan
1967-1971 High Pressure Physics Institute, Pre-doctoral fellow, Troitzk, Moscow
distr.of USSR AS
1971- present Institute of Chemical Physics of Armenian NAS, Senior researcher, Head
of Laboratory.

Specialization:

(i) *main field* - Combustion synthesis (SHS- Self-propagating High-temperature Synthesis of hydrides);

(ii) *other fields* - Material science of carbides, nitrides, borides, silicides, hydrides of transition metals

(iii) *current research interests*: The combustion processes in condensed state and synthesis by this way of interstitial compounds. The interaction of metals and alloys with hydrogen. Radiation material science of hydrides.

Honors, Awards, Membership of Professional Societies:

1992- Professor - специальность «Порошковая металлургия и композиционные материалы» ВАК СССР

1980 - State Prize of the Armenian SSR in the Field of Science and Engineering;
Разработка и внедрение технологии производства СВС-дисилицида молибдена на Кироваканском заводе высокотемпературных нагревателей
The development of industrial technology for producing of SHS-MoSi₂ and its application in the Kirowakan plant of high temperature heaters

2001 – the Award “Scientist of Year” (American Engineers and Scientists of America).

The member of specialized advisory councils of Institute of Chemical Physics and Yerevan Polytechnic University on judgment of Ph.D. and Dr. Sci. degrees.

Победитель конкурса «ста эффективных научных сотрудников -2013 г Армении», «Արդյունավետ գիտաշխատող - 2013» մրցույթի

In 1998-2001, together with the researchers from the Yerevan Physics Institute (YerPhI), the scientists of SHS Laboratory worked on ISTC **Project # A-192** "The influence of electron beam on the formation of binary and multi-component hydrides with extreme properties". During the implementation of this Project, the thermal-radiation synthesis of hydrides of transition metals was realized for the first time, the hydrogen-rich hydrides of stoichiometric compositions were obtained; the super-hydride of hafnium (HfH_{2.4}) was synthesized for the first time. The new phenomenon of "cold synthesis" of hydrides, carbohydrides, hydridonitrides and hydrides of intermetallides has been revealed.

In 2003 with the same team, **Project #A-575** “Synthesis and investigation of hydrogen containing materials used in biological protection from ionizing radiation” has been submitted in **ISTC**. It received **status 3: «Approved without funding»**.

In 2006-2008 again with the YerPhI team, we worked on, and successfully completed ISTC **Project # A -1249** titled: “Self Propagating High Temperature Synthesis of Hydrides with Maximum High Content of Hydrogen”. During performing this Project, a fundamentally new, efficient method of generating the alloys and intermetallides of refractory metals has been demonstrated, based on usage as source materials the hydrides of these metals. The SHS-combustion of obtained compounds resulted in synthesis of their hydrides. The neutron shielding characteristics of synthesized metal hydrides were studied; neutronographic and X-ray study of 42 synthesized samples was performed. The collaborator of the Project, Dr. Prof. Jacques Huot at the Institut de recherche sur l’hydrogène, Université du Québec à Trois-Rivières, studied BCC alloys, based on Ti_{0.6}V_{0.4} and Ti_{0.7}V_{0.3}, and of their hydrides, as catalysts under hydrogenation of Mg and its alloys.

The Project #A-1794 "The using of SHS and "hydride cycle" techniques for receiving alloys of transition metals with high hydrogen adsorbing properties, as effective hydrogen storage", has been submitted to the **ISTC** in 2009. It was adopted by the Technical Commission of ISTC and approved by the Financing Parties. Moreover, Canada was going to start its funding, but because of limited funds in Armenia, **It received status 3: «Approved without funding»**.

In 2009-2013 we implemented the IAEA Research Contract number 15720, 'The Receiving of Alloys of Transition Metals with High Hydrogen Absorbing Properties Using SHS and "Hydride Cycle" Techniques and Application of Nuclear Methods for their Microstructural Characterization'.

In 2014 in ISTC Project № A-2131 "Development of technological processes for synthesis in "hydride cycle" of refractory metal alloys and intermetallides, perspective as accumulators of hydrogen (hydrogen storage) and advanced structural materials» has been submitted. It received status 3: «Approved without funding».

In 2016 in ISTC Project № A-2287 «Formation of structure of hydrogen induced aluminides of IV-V group metals in hydride cycle and study of their physical - chemical properties». It received status 2 – «Submitted to Parties for Board Decision»

Number of publications: more than 250

Author Certificates: 20

The Scientific supervision: 9 PhD

LIST OF MAIN PUBLICATIONS

1. Dolukhanyan S.K., Nersesyan M.D., Nalbandyan A.B., Borovinskaya I.P., Merzhanov A.G. Transition metal combustion in hydrogen. *Dokl. Akad. Nauk SSSR*, 1976, v. 231, N 3, p. 675-678.
2. Dolukhanyan S.K., Nersesyan M.D., Borovinskaya I.P. Gravimetric investigations of porous metallic samples combustion. *Fiz. Goreniya Vzryva*, 1977, v. 13, N 5, p.943-945.
3. Dolukhanyan S.K., Nersesyan M.D., Martirosyan N.A., Merzhanov A.G. The usage of SHS processes in chemistry and hydrides technology. *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1978, v.14, N 9, p. 1581-1585.
4. Dolukhanyan S.K., Akopyan A.G., Merzhanov A.G. Interaction of intermetallides based on zirconium and cobalt with hydrogen in combustion regime. *Fiz. Goreniya Vzryva*, 1981, v. 17, N 5, p.50-55.
5. Martirosyan N.A., Dolukhanyan S.K., Merzhanov A.G. Critical phenomena at (A_{sol}+B_{sol}+C_{gas})-type mixtures combustion (using titanium-carbon-hydrogen system as an example) *Fiz. Goreniya Vzryva*, 1981, v. 17, N14, p.24-29.
6. Dolukhanyan S.K. Self-propagating low-temperature synthesis of intermetallides hydrides. *In: Voprosy Atomnoi Nauki i Tekhniki (Atomoc Science and Technics Problems)*, 1982, iss.3(13), p.20-26. (Ser.: *Atomno-vodorodnaya Energetika, Atomic and Hydrogen Energy and Technology*).
7. Akopyan A.G., Dolukhanyan S.K., Karapetyan A.K., Merzhanov A.G. Zr-Ni system intermetallides hydrides synthesis in combustion regime. *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1983, v.19, N 6, p. 881-885.
8. Dolukhanyan S.K., Karimyan R.A., Akopyan A.G., Merzhanov A.G. Self-propagating low-temperature synthesis of intermetallides` hydrides on Ti-Co system base. *Zh. Neorg. Khim.*, 1983, v.28, N 5, p. 1101-1105.
9. Martirosyan N.A., Dolukhanyan S.K., Merzhanov A.G. Experimental observation og non-uniqueness of stationary combustion regimes with parallel reactions. *Fiz. Goreniya Vzryva*, 1983, v. 19, N 6, p.22-24.
10. Martirosyan N.A., Dolukhanyan S.K., Merzhanov A.G. Non-uniqueness of stationary regimes at powder mixtures combustion of zirconium and carbon black in hydrogen. *Fiz. Goreniya Vzryva*, 1983, v.19, N 5, p.39-41.
11. Dolukhanyan S.K., Aleksanyan A.G., Seiranyan G.B., Agadzhanyan N.N., Nalbandyan A.B. Titanium hydridonitrides synthesis in combustion regime. *Dokl. Akad. Nauk SSSR*, 1984, v.276, N 1, p.131-140.
12. Dolukhanyan S.K., Aleksanyan A.G., Nalbandyan A.B., Merzhanov A.G. The study of zirconium combustion process in nitrogen-hydrogen gas mixture. *Fiz. Goreniya Vzryva*, 1985, v. 21, N 3, p.73-77.
13. Martirosyan N.A., Dolukhanyan S.K., Merzhanov A.G. Regularities and mechanism of combustion in zirconium-carbon-hydrogen system. *Fiz. Goreniya Vzryva*, 1985, v. 21, N 5, p.53-57.
14. Merzhanov A.G., Dolukhanyan S.K. Process of metals combustion in hydrogen and hydrides production in self propagating high-temperature synthesis. *In: Hydrogen Energy Progress VII Proc. of the World Hydrogen Energy Conf., 25-29 Sept. 1988, Moscow, USSR, Moscow, v.2, p.1355-1369, 1988.*
15. Agadzhanyan N.N., Dolukhanyan S.K. Combustion process in a system Zr+Nb+C+H. *Fiz. Goreniya Vzryva*, 1990, v. 26, N 5, p.33-36.

16. Agadzhanian N.N., Dolukhanyan S.K. The study of combustion process in a system Zr+Nb+N+H system. Synthesis of complex hydridonitrides. *Fiz. Goreniya Vzryva*, 1990, v. 26, N 6, p.120-124.
17. Karimyan R.A., Dolukhanyan S.K. The study of combustion process in a system Ti+VH+N+H system. Synthesis of complex nitrides and hydridonitrides. *Fiz. Goreniya Vzryva*, 1990, v. 26, N 6, p.116-120.
18. Simonyan S.S., Agababyan E.V., Dolukhanyan S.K., Petrosyan S.S. Thermal decomposition of titanium carbides-hydrides. *Izv. Akad. Nauk SSSR, Neorg. Mater.*, 1990, v.26, N 4, p. 763-765.
19. Dolukhanyan S.K. H.G. Hakobyan and A.G. Alexanyan. Combustion of metals in hydrogen and hydride production by self propagating high temperature synthesis. *Int. J. of SHS*, 1992, v.1, N 4, p. 530-535.
20. Karimyan R.A., Dolukhanyan S.K. Interaction of vanadium with hydrogen by SHS and the effect of some metal and non-metal additives on the combustion process. *Int. J. of SHS*, 1992, v.1, N 2, p. 186-190.
21. Agadzhanian N.N., Dolukhanyan S.K. Interaction of Zr+Nb with carbon, nitrogen and hydrogen in combustion regime. *Inzh.-Fiz. Zh.*, 1993, v. 65, N 4p. 389-394.
22. Simonyan S.S., Hakobyan H.G., Dolukhanyan S.K. Thermal decomposition of binary and compound SHS hydrides *Int. J. of SHS*, 1993, v.2, N 1, p.106-111..
23. Dolukhanyan S.K, Aleksanyan A.G., Hakobian H.G. Interaction of hafnium with hydrogen and nitrogen in the combustion regime. *Int. J. Hydrogen Energy*, 1995, v. 20, No 5, p. 391-3.
24. Agadzhanian N.N., Dolukhanyan S.K., The influence of reaction environment on the combustion process in Zr-Nb-C system. *Fiz. Goreniya Vzryva*, 1996, v. 32, N 2, p.31-37.
25. Hakobian H.G., Harutiunian Z.A., Dolukhanyan S.K., Beibutian V.M. and Shekhtman V.Sh. The influence of magnesium on the combustion process in the Ti-H₂ system. *Int. J. of SHS*, v.5, N 2, p. 1996.
26. Aleksanyan A.G., Dolukhanyan S.K., Beibutian V.M., Hakobian H.G., Shekhtman V.Sh. The combustion processes in Ti-Zr-N₂-H₂ system. *Fiz. Goreniya Vzryva*, 1996, v. 32, N 6, p.62-67.
27. Hakobian H.G., Harutiunian Z.A., Dolukhanyan S.K., Beibutian V.M. and Shekhtman V.Sh.. Self propagating high temperature synthesis in Mg-Ti-H system. *Int. J. Hydrogen Energy*. 1996, v. 21, N 11/12 p. 993-996.
28. Aleksanian A.G., Dolukhanyan S.K. Self Propagating High Temperature Synthesis in Y-N-H system. *Int. J Hydrogen Energy*. 1996, v. 21, N 11/12, p. 955-959.
29. Dolukhanyan S.K. SHS processes in hydrogen content systems. *Arm. Khim. Zhurnal, (Chemical Journal of Armenia)* 1996, v. 49, N 4, p.28-38.
30. Dolukhanyan S.K.. Synthesis of Novel Compounds by Hydrogen Combustion. *J. of Alloys and Compounds*. V. 253-254, p. 10--12, 1997.
31. Aleksanian A.G., S.K. Dolukhanyan. Interaction of Y with H₂ and N₂ in the Combustion Mode. Formation of Yttrium Hydride and Hydridonitride. *Int. J. of SHS*. v. 7, N1, p. 53-57, 1998.
32. Dolukhanyan S.K., Aleksanyan A.G., Agadzhanian N.N., Hakobian H.G., Shekhtman V.Sh. The structure peculiarities of multicomponent hydridonitrides on the base of the IV-Vgroup metals. *Arm. Khim. Zhurnal (Chemical Journal of Armenia)*. № 3-4, p. 99-109, 1998
33. Aleksanyan A.G., Hakobyan H.G., Beibutyuan V.M., Ter-Galstyan O.P., Dolukhanyan S.K., Shekhtman V.Sh. Multicomponent self-propagating synthesized transition metals-based hydrides. *Poroshk. Metall.* 1999, N 1-2, p. 43-46.
34. Agadzhanian N.N., Hakobyan H.G., Beibutyuan V.M., Ter-Galstyan O.P., Dolukhanyan S.K., Shekhtman V.Sh. Multicomponent SHS hydrides based on transition metals. II. System with participation of Vgroup metals and nitrogen (Ti-V-N-H, Ti-Nb-N-H, Zr-Nb-N-H). *Poroshk. Metall.* 1999, N 3-4, p. 76-80.
35. Dolukhanyan S.K. N.N. Aghajanyan, H.G. Hakobyan, V.Sh. Shekhtman and O.P. Ter-Galstyan. The structural peculiarities of transition metals carbohydrides produced by combustion synthesis. *J. of Alloys and Compounds*. v. 293-295, p. 452-457, 1999.
36. Dolukhanyan S.K., Shekhtman V.Sh., Aghajanyan N.N., Abrahamyan K.A., Harutyunyan Kh.S., Aleksanyan A.G., Hakobyan H.G., and Ter-Galstyan O.P. Radiation-thermal synthesis of titanium hydride. *Khimicheskaya Fizika*, 2000, v. 19, N 12, p. 21-25.

37. Aleksanyan A.G., Dolukhanyan S.K., Shekhtman V.Sh., Abrahamyan K.A., Hairapetyan V.S., Mnatsakanyan N.L. Radiation-chemical synthesis of titanium hydridonitrides. *Khimicheskaya Fizika*, 2001, v. 20, N1, p. 32-36.
38. Aghajanyan N.N., Dolukhanyan S.K., Shekhtman V.Sh., Harutyunyan Kh.S., Abrahamyan K.A., Ter-Galstyan O.P.. Thermal-radiation synthesis of titanium carbohydrides. *Khimicheskaya Fizika* 2001, v.20, № 3, c. 40-44.
39. Shekhtman V.Sh., Dolukhanyan S.K., Abrosimova G.E., Abrahamyan K.A., Aleksanyan A.G., Aghajanyan N.N., Ter-Galstyan O.P. The nanocrystalline forming by combustion synthesis of Ti (Zr) hydrides. *Int. J. Hydrogen Energy*, 26(2001) 435-440.
40. Aleksanyan A.G., Dolukhanyan S.K.. Combustion of Nb in hydrogen and nitrogen. Synthesis of Nb hydrides and hydridonitrides. *Int. J. Hydrogen Energy*, 26(2001) 429-433.
41. S.K. Dolukhanyan, SHS of Binary and Complex Hydrides, in *Self-Propagating High-Temperature Synthesis of Materials*, Edited by Borisov, A.A., De Luca, L, and Merzhanov, A., Eds., translated by Yu.B. Scheck, New York: Taylor and Francis, 2002, pp. 219--237.
42. Dolukhanyan S.K., Shekhtman V.Sh., Aghajanyan N.N., Abrahamyan K.A., Harutyunyan Kh.S., Aleksanyan A.G., Hakobyan H.G., and Ter-Galstyan O.P.. Thermal-radiation processes in the Me^{IV}-H system. Synthesis of hydrides of metals. *Int. J. Alloys and Compounds*, 330-332 (2002) 551-558.
43. Aleksanyan A.G., Aghajanyan N.N., Dolukhanyan S.K., Harutyunyan Kh. S, Hayrapetyan V.S., Mnatsakanyan N.L.. Thermal-radiation synthesis of zirconium hydridonitrides and carbohydrides. *Int. J. Alloys and Compounds*, 330-332 (2002) 559-563.
44. Hakobyan H.G., Dolukhanyan S.K., Tamamyanyan N.G., Abrahamyan K.A., Shekhtman V.Sh. The synthesis of hydrides of intermetallic Ti₂Co under accelerated electron beam. *Int. J. Alloys and Compounds*, 330-332 (2002) 564-568
47. A.G. Aleksanyan, S.K. Dolukhanyan, V.Sh. Shekhtman, Kh.S. Harutyunyan, K.A. Abrahamyan, N.L. Mnatsakanyan. The thermal radiation processes in the Sc-H system. *J. Alloys Comp.* Vol. 356-357 (2003), 562-565.
48. M.Yu. Tashmetov, V.T. Em, C.H. Lee, Y.N. Choi, J.S. Lee, V.Sh. Shekhtman and S.K. Dolukhanyan. Neutron diffraction study of Ti_{0.8}V_{0.2}C_{0.62} and Ti_{0.8}V_{0.2}C_{0.62}H_x. *Physica B: Condensed Matter, Volume 369, Issues 1-4, 1 December 2005, Pages 254-260.*
49. S.K. Dolukhanyan, N.N. Aghajanyan, V.Sh. Shekhtman, A.G. Aleksanyan et al. Thermal-radiation processes in Me-H system and "Cold synthesis" of hydrides. *Khimicheskaya Fizika*; 2005, V.24, N8, p.34-41.
50. S.K. Dolukhanyan, SHS-method of receiving hydrogen accumulators; International Journal «Alternativnaya energetika i ekologiya» («Alternative energy and ecology» 2005; N 11(31), p. 13-16.
51. Dolukhanyan S.K, Aleksanyan A.G., Shekhtman V.Sh, Mantashyan A.A., Mayilyan D.G., Ter-Galstyan O.P., New method for receiving transition metals based alloys; "Khimicheskiiy jurnal Armenii" ("Chemical Journal of Armenia"); 2007, V. 60, N 4, p. 545-559.
52. Dolukhanyan S.K, Aleksanyan A.G., Ter-Galstyan O.P., Shekhtman V.Sh, Sakharov M.K. and Abrosimova G.E. Specifics of the formation of alloys and their hydrides in the Ti-Zr-H system. *Russian Journal of Physical Chemistry B*, 2007, V. 2, N 6, p. 563–569.
53. A.G. Aleksanyan S.K. Dolukhanyan, A.G. Akopyan, Interaction of Sc, Gd, Nd and Pr with hydrogen in combustion regime in accelerated electrons beam; "Khimicheskiiy jurnal Armenii" ("Chemical Journal of Armenia"); 2007, V 60, N 2, p. 342-352
54. Aleksanyan A.G., Hakobyan H.G., Dolukhanyan S.K., Mnatsakanyan N.L., Abrahamyan K.A. The obtaining of intermetallic compounds from hydrides of titanium and zirconium with nickel and cobalt. NATO Science Series, ICHMS'2007, in B. Baranovski et al. (eds.), *Carbon Nanomaterials in Clean Energy Hydrogen Systems*. Springer, 2008, 693-698.
55. Aleksanyan A.G., Dolukhanyan S.K., Mantashyan A.A., Mayilyan D.G., Ter-Galstyan O.P., Shekhtman V.Sh. New technique for producing the alloys based on transition metals. NATO Science Series, ICHMS'2007, in B. Baranovski et al. (eds.), *Carbon Nanomaterials in Clean Energy Hydrogen Systems*. Springer, 2008, 783-794.

56. Dolukhanyan S.K., Aghajanyan N.N. Receiving of compact carbides and carbohydrides based on titanium and vanadium. NATO Science Series, ICHMS`2007, in B. Baranovski et al. (eds.), *Carbon Nanomaterials in Clean Energy Hydrogen Systems*. Springer, 2008, 743-750.
57. Dolukhanyan S.K., Aleksanyan A.G., Abrahamyan K.A., Mardanyan S.S., Shekhtman V.Sh., Karpov M.I., Korzhov V.P. Formation of porousless compact produces from hydrides of refractory metals. NATO Science Series, ICHMS`2007, in B. Baranovski et al. (eds.), *Carbon Nanomaterials in Clean Energy Hydrogen Systems*. Springer, 2008, 795-803.
58. Dolukhanyan S.K., Aleksanyan A.G., Ter-Galstyan O.P., Mayilyan D.G., Shekhtman V.Sh., Sakharov M.K., Khasanov S.S. The peculiarities of formation of alloys structure in the system Ti-Zr-Hf-H. NATO Science Series, ICHMS`2007, in B. Baranovski et al. (eds.), *Carbon Nanomaterials in Clean Energy Hydrogen Systems*. Springer, 2008, 733-741.
59. Dolukhanyan S.K., Mantashyan A.A. Interaction of transition metals and alloys with hydrogen in conventional SHS and radiation-assisted thermal explosion modes. *Int. J. Self-Propagating High Temperature Synthesis*. 2008, V.17, N 1, p. 30-40.
60. Aleksanyan A.G., Mayilyan D.G., Dolukhanyan S.K., Shekhtman V.Sh., Ter-Galstyan O.P.: Synthesis of hydrides and receiving the alloys in Ti-Hf-H system; International Journal «Alternativnaya energetika i ekologiya» («Alternative energy and ecology»; 2008, V. 9, N 65, p. 22-26
61. Ian P. Swainson, Seda K. Dolukhanyan, Anahit G. Aleksanyan, V. Sh. Shekhtman, Davit G. Mayilyan, and Andr'e L. Yonkeu. Omega-phase in Ti-Hf-Zr(O) alloys, produced by the "hydride-cycle" method. *Can. J. Phys.* **88**(10): 741–749 (2010) | DOI:10.1139/P10-025
62. Aleksanyan A.G., Mayilyan D.G., Dolukhanyan S.K., Shekhtman V.Sh., Ter-Galstyan O.P. Formation of triple alloys and their hydrides in the Ti-Zr-Hf-H system. *International Journal of Self-Propagating High-Temperature Synthesis*, 2010, Vol. 19, No.1, pp. 34-39. Allerton Press. Inc., 2010.
63. H.G. Hakobyan, A.G. Aleksanyan, S.K. Dolukhanyan, N.L. Mnatsakanyan. Zirconium intermetallides and their hydrides as obtained by hydride cycle route. *International Journal of Self-Propagating High-Temperature Synthesis*, 2010, Vol. 19, No.1, pp. 49-51. Allerton Press. Inc. 2010.
64. V.Sh. Shekhtman, S.K. Dolukhanyan, A.G. Aleksanyan, D.G. Mayilyan, O.P. Ter-Galstyan, M.K. Sakharov, S.S. Khasanov. Effect of hydrogen on the structure of alloys formed in the Ti-Zr-Hf-H system. *International Journal of Self-Propagating High-Temperature Synthesis*, 2010, Vol. 19, No.1, pp. 40-48. Allerton Press. Inc., 2010. DOI: 10.3103/S1061386210020073
65. S. K. Dolukhanyan, A. G. Aleksanyan, V. Sh. Shekhtman, H. G. Hakobyan, D. G. Mayilyan, N. N. Aghadjanyan, K. A. Abrahamyan, N. L. Mnatsakanyan, and O. P. Ter-Galstyan. Synthesis of Transition Metal Hydrides and a New Process for Production of Refractory Metal Alloys: An Autoreview, *International Journal of Self-Propagating High-Temperature Synthesis*, 2010, Vol. 19, No2, pp. 85–93. © Allerton Press, Inc., 2010. DOI: 10.3103/S1061386210020020
66. V.Sh. Shekhtman, H.G. Hakobyan, A.G. Aleksanyan, S.K. Dolukhanyan, O.P. Ter-Galstyan, M.K. Sakharov. The formation of quasicrystals and their hydrides in Ti-Zr-Ni System. *Int. J. Hydrogen Energy*, 36 (2011), 1206-1208. ISSN 0360-3199 doi:10.1016/j.ijhydene.2010.07.004
67. N.N. Aghajanyan, S.K. Dolukhanyan, O.P. Ter-Galstyan. The combustion process in Ti-V-Cr-C-H System and synthesis of complex carbohydrides. *Int. J. Hydrogen Energy*, 36(2011),1306-1308, ISSN 0360-3199 doi:10.1016/j.ijhydene.2010.06.134
68. A.G. Aleksanyan, S.K. Dolukhanyan, V.Sh. Shekhtman, J. Huot, O.P. Ter-Galstyan, and N.L. Mnatsakanyan. Formation of alloys in Ti-V system in hydride cycle and synthesis of their hydrides in self-propagating high-temperature synthesis regime. *J. Alloys Comp.* 509 (2011) 786– 789. doi:10.1016/j.jallcom.2010.12.078
69. V.Sh. Shekhtman, H.G. Hakobyan, A.G. Aleksanyan, S.K. Dolukhanyan, O.P. Ter-Galstyan, M.K. Sakharov. The formation of quasicrystals and their hydrides in Ti-Zr-Ni System. *Int. J. Hydrogen Energy*, 36 (2011), 1206-1208. ISSN 0360-3199 doi:10.1016/j.ijhydene.2010.07.004/
70. N.N. Aghajanyan, S.K. Dolukhanyan, O.P. Ter-Galstyan. The combustion process in Ti-V-Cr-C-H System and synthesis of complex carbohydrides. *Int. J. Hydrogen Energy*, 36(2011),1306-1308, ISSN 0360-3199 doi:10.1016/j.ijhydene.2010.06.134.
71. A.G. Aleksanyan, S.K. Dolukhanyan, V.Sh. Shekhtman, J. Huot, O.P. Ter-Galstyan, and N.L. Mnatsakanyan. Formation of alloys in Ti-V system in hydride cycle and synthesis of their hydrides in self-propagating high-temperature synthesis regime. *J. Alloys Comp.* 509 (2011) 786– 789. doi:10.1016/j.jallcom.2010.12.078

72. D.G. Mayilyan, S.K. Dolukhanyan, "Investigation of hydrogen interaction with titanium based high-density alloys in the SHS mode" Book of Abstracts of SHS 2011, *XI International Symposium of Self-Propagating High Temperature Synthesis*, 5 - 9 Sept. 2011, EDEN Beach Resort Hotel, Anavyssos, Attica, Greece, p.350
73. N.N. Aghajanyan, S.K. Dolukhanyan, "Investigation of combustion in Ti-Nb-W-C-H system and synthesis of complex carbohydrides" Book of Abstracts of SHS 2011, *XI International Symposium of Self-Propagating High Temperature Synthesis*, 5 - 9 Sept. 2011, EDEN Beach Resort Hotel, Anavyssos, Attica, Greece, p.258.
74. N.N. Aghajanyan, S.K. Dolukhanyan, "Combustion synthesis of complex carbohydrides in the Ti-Nb-W-C-H system" *International Journal of Self-Propagating High-Temperature Synthesis*, 2012, Vol. 21, No.1, pp. 7-10. Allerton Press. Inc., 2012 <http://link.springer.com/article/10.3103/S1061386212010025>
81. A.G. Aleksanyan, S.K. Dolukhanyan, V.Sh. Shekhtman^b, S.S. Khasanov^b, O.P. Ter-Galstyan^a and M.V. Martirosyan^c. Formation of alloys in the Ti-Nb system by hydride cycle method and synthesis of their hydrides in self-propagating high-temperature synthesis. *Int. J. Hydrogen Energy*, 37 (2012) 14234-14239. <http://dx.doi.org/10.1016/j.ijhydene.2012.07.006>
82. D. Mayilyan, S. Dolukhanyan, A. Aleksanyan. SHS reaction of Ti-Zr-Hf alloys with hydrogen. *International Journal of Self-Propagating High-Temperature Synthesis*, 2012, Vol. 21, No.1, pp. 38-40. Allerton Press. Inc., 2012. <http://link.springer.com/article/10.3103/S1061386212010104>
83. N. N. Aghajanyan, S. K. Dolukhanyan, and N. L. Mnatsakanyan . Combustion Synthesis of Ti-Nb-Cr-C-H Carbohydrides. *International Journal of Self-Propagating High-Temperature Synthesis*, 2014, Vol. 23, No. 2, pp. 118-121.
84. S.K. Dolukhanyan , A.G. Aleksanyan, , O.P. TerGalstyan, V.Sh. Shekhtman, N.L. Mnatsakanyan. Synthesis of Titanium Aluminides by Hydride Cycle Process. *International Journal of Self Propagating HighTemperature Synthesis*, 2014, Vol. 23, No. 2, pp. 78-82. Allerton Press, Inc., 2014.
85. S.K. Dolukhanyan , O.P. Ter-Galstyan, A.G. Aleksanyan, A.G.Hakobyan, N.L. Mnatsakanyan, V.Sh. Shekhtman. Synthesis of niobium aluminides using hydride cycle method. *Khimicheskaya Fizika*; 2015, Vol. 34, № 9, pp. 1-8.,
86. A.G. Aleksanyan, S.K. Dolukhanyan , O.P. TerGalstyan, N.L. Mnatsakanyan. Hydride cycle formation of ternary alloys in Ti-V-Mn system and their interaction with hydrogen. *Int. J. Hydrogen Energy*, 41 (2016) 13521-13530.
87. С.К. Долуханян, О.П. Тер-Галстян, А.Г. Алексанян, Г.Н. Мурадян, Н.Л. Мнацаканян. Формирование алюминидов титана и ниобия, индуцированных водородом в гидридном цикле. *Химическая Физика*, 2017, том 36, № 4, с. 1-11.
88. S.K. Dolukhanyan, O.P. Ter-Galstyan, A.G. Aleksanyan, G.N. Muradyan, N.L. Mnatsakanyan. Formation of titanium and niobium aluminides induced by hydrogen in the hydride cycle. *Khimicheskaya Fizika*, 2017, Vol. 36, No. 4, pp. 32-42
89. Seda. K. Dolukhanyan. Hydrides and Deuterides of Transition Metals CONCISE ENCYCLOPEDIA OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS History, Theory, Technology and Products Elsevier, 2017, pp157-159.
90. Seda. K. Dolukhanyan Karenovna Dolukhanyan .Hydridonitrides and Carbohydrides of Transition Metals CONCISE ENCYCLOPEDIA OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS History, Theory, Technology and Products , Elsevier 2017; pp159-160.
91. Anahit G. Aleksanyan, Seda K. Dolukhanyan. Alloys of Transition Metals, CONCISE ENCYCLOPEDIA OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS History, Theory, Technology and Products, Elsevier 2017, pp11-13.
92. С.К. Долуханян, Г.Н. Мурадян, А.Г. Алексанян, О.П. Тер-Галстян, Н.Л. Мнацаканян «Физико-химические особенности формирования алюминидов металлов IV и V групп в гидридном цикле». *Международный научный журнал «Альтернативная энергетика и экология» (ISJAEE)*. 2018; N(13-15):P. 122-140.

93. S.K. Dolukhanyan, A.G. Aleksanyan, G.N.Muradyan, V.Sh. Shekhtman, O.P., Ter-Galstyan, H.G. Hakobyan, N.N. Aghajanyan, N.L. Mnatsakanyan. Hydrides of transition metals and alloys are condensed carriers of hydrogen, Հայաստանի քիմիական հանդես. Chemical Journal of Armenia. Химический журнал, Армении, 71 (4). pp. 495-516. 2018