




Sofiya V. Aydinyan

PERSONAL INFORMATION

Place/date of birth: Vanadzor, Armenia / 14 July 1984
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Google Scholar profile - https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=unKyOlsAAAAJ
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EDUCATION

16.11.2008-13.07.2013 PhD student in Chemistry, Department of Chemistry, Yerevan State University
“Molybdenum and molybdenum carbides on stage combustion synthesis from local raw materials”

01.09.2006-30.05.2008 Master student in Chemistry, Department of Chemistry, Yerevan State University
“Combustion lows in the MoO₃-Mg-C system”
Graduated with summa cum laude distinction

01.09.2002-30.05.2006 BSc in Chemistry, Department of Chemistry, Yerevan State University.
“MoSi₂-Si₃N₄ formation possibilities in the combustion mode via thermal dilution and chemical activation methods”
Graduated with summa cum laude distinction

RESEARCH & WORKING EXPERIENCE

05.03.2019- Senior researcher at the Laboratory of Kinetics of SHS processes, Institute of Chemical Physics, National Academy of Sciences of RA

01.09.2018-29.02.2019 Lecturer assistant of Materials Engineering, Tallinn University of Technology

01.03.2017-29.02.2019 Postdoctorate researcher, Mechanical and Industrial

	Engineering, Tallinn University of Technology
01.10.2015-01.11.2015	Invited lecturer, Yerevan State Medical University
01.09.2015-28.02.2017	Lecturer, Yerevan State University
01.04.2015-28.02.2017	Researcher, Yerevan State University
01.09.2014-28.02.2017	IB DP & MYP teacher of Chemistry
12.07.2013	PhD in Chemistry
2012-2016	Head of department of Chemistry, Armenian National Lycee after Anania Shirakatsy, Yerevan, Armenia
2010-2017	Associate researcher at the Laboratory of Kinetics of SHS processes, Institute of Chemical Physics, National Academy of Sciences of RA
01.09.2010-28.12.2010	Invited lecturer, № 118 high school after Aramays Erznkyan, Yerevan, Armenia
01.09.2007-31.08.2014.1	Teacher of Science and Chemistry, Armenian National Lycee after Anania Shirakatsy, Yerevan, Armenia

PROJECTS

2021	Committee of Science of the RA, 20RF-154, Synthesis and spark plasma sintering of high-entropy alloys: Fundamental study of reaction pathway and properties of materials, PI, 11 880 000 AMD
2020	Combustion synthesis and consolidation of W-Ni and W-Ag nanocomposite materials for hybrid vehicles as heat sinks, Faculty Research Funding Program, Enterprize Incubator Foundation, EIF-PMI Faculty Grant, Philip Morris International, Investigator, 4 800 000 AMD
2020	Committee of Science of the RA, 20TTWS-2F040 High entropy oxides by combustion synthesis and their sparkly consolidation for magnetic and electrochemical applications, PI, 36 000 000 AMD
2020	Committee of Science of the RA, 20TTSG-2E003 Bamboo-like hierarchical microstructure inspiring silicon and boron carbides by combustion synthesis with reactions thermokinetic coupling approach, PI, 55 000 000 AMD

- 2019** Refractory high entropy alloys for high-temperature application, Enterprize Incubator Foundation, EIF-PMI Faculty Grant, Philip Morris International, Investigator, 4 800 000 AMD
- 2017** Combustion synthesized new materials for the additive manufacturing Mobilias Plus postdoctoral research grant, MOBJD166, Tallinn, Estonia, Principal investigator, Estonian Research Council, 72 000 Eur
- 2015** Solution combustion synthesis of nanoscale non-oxide catalytic systems and characterization. Molybdenum carbide as an example, State Committee of Science of the Republic of Armenia (Project no. 15T-1d196) Research Grant, Researcher, 7 000 000 AMD per annum
- 2014** ISTC Project #A-2123
“Combustion Synthesis and Characterization of W-Cu Composite Nanomaterials, Researcher, 200 000 USD
- 2013** Mo-Cu nanocomposite materials. Combustion synthesis and characterization, Republic of Armenia (Project no. 13-1d192) Research Grant, Researcher, 6 000 000 AMD per annum
- 2012** “Materials and equipment request MEPS 2012”, MEPS-12-04, Women’s Research Grant
- 2011** Travel Grant from G.Gulbenkian foundation to Attend Athens Demokritos University and XI International Symposium on SHS
- 2011** Obtaining nanopowders of refractory metals (W, Mo) by metallothermic reduction of salts, State Committee of Science of the Republic of Armenia (Project no. 11-1d167) Research Grant, researcher
- 2009** Processing of local molybdenum raw materials with combined reducers and the preparation of molybdenum (molybdenum carbides), Early Careers Support Program, (ECSP)-2009”, ECSP-0917-GRSP, Research Grant, PI

AWARDS & HONORS

- 2020** ARPA Institute Invention Competition, II place award
- 2019** International Award of Element Oganesson in the Periodic Table of Younger Chemists
- 2018** Certificate of finalist of STARTER tech Advanced

	Spring 2018 program (Feb-May), Estonia
2018	III place award for the report in XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018)
2018	ARPA Institute Invention Competition, III place award
2017	ARPA Institute Invention Competition, I place award
2015	ARPA Institute Invention Competition, II place award
2015	I place award for the best report "Current Problems of Chemical Physics", 4 th international Conference, 5-9 Oct, 2015, Yerevan, Armenia.
2013	I place award for the best report in XII International Symposium on Self-Propagating High-Temperature Synthesis, 21-24 October, South Padre Island, TX, USA
2013	ARPA Institute Invention Competition, II place award
2012	ARPA Institute Invention Competition, II place award
2012	I place award for the best report Current Problems of Chemical Physics dedicated 50-year of the Institute of Chemical Physics NAS RA, 9-12 October, 2012, Yerevan, Armenia.
2010	Diploma for the "Microsoft innovative teachers' Conference and competition"
2008	ARPA Institute Invention Competition, I place award
2008 Nov.	Diploma for the best report in Students' Scientific Conference
2007 March	6 th Scientific Cateds Conference of V. Sargsyan Military Institute, Yerevan, Armenia, II place award
2007 Oct.	Current Problems of Chemical Physics, 21-24 October, 2007, III place award
2007 Dec.	I place award for the best report in Students'

LANGUAGES

Armenian (native), English (C1), Russian (C1), Estonian (A2)

COMPUTER SKILLS

MS Office, Photoshop, Chemix, HSC, TAPP, Calphad,
ChemDraw, MS Jade, ISMAN-Thermo software.

CONFERENCES & SYMPOSIUMS

1. First Armenian-Israel workshop on SHS, Yerevan, Armenia, September 21-23, 2005 "SHS VIII International Symposium on Self-Propagating High Temperature Synthesis".
2. "Nonisothermal Phenomena and Processes" Yerevan, Armenia, on 27 November-1 December, 2006.
3. International Conference "Chemistry and Chemical Technology", 22-25 October, 2007, Yerevan, Armenia.
4. International Conference "Current Problems of Chemical Physics", 21-24 October, 2008, Yerevan, Armenia.
5. "X International Symposium on SHS", Tsakhkadzor, 6-11 July, 2009, Armenia.
6. II Scientific Conference of Armenian Chemical Society, "New materials and processes", 4-8 October, 2010, Yerevan-Goris, Armenia.
7. "XI International Symposium on SHS", Annavyssos, Attica, 5-9 September, 2011, Greece.
8. Non-equilibrium Processes, Plasma, Combustion, and Atmospheric Phenomena" NEPCAP 2012, 1 – 6 October 2012, Sochi (Loo), Russia.
9. Current Problems of Chemical Physics" dedicated 50-year of the Institute of Chemical Physics NAS RA, 9-12 October, 2012, Yerevan, Armenia.
10. XII International Symposium on Self-Propagating High-Temperature Synthesis, 21-24 October 2013, South Padre Island, TX, USA.
11. Online workshop, certificate of attendance on IB Chemistry, Category 1 workshop, March 2014.
12. 13th International Ceramic Congress (CIMTEC-2014), 8-13 June, 2014, Montecatini Terme, Italy.
13. CHEMISTRY TODAY-2014, 4-th International Conference of Young Scientists, 18-22 August 2014, Yerevan, Armenia.
14. IV International Conference "Current problems of Chemical Physics", Yerevan, 5-9 October, 2015.
15. 14th Intern. Conference of European Ceramic Society, 21-25 June, 2015, Toledo, Spain.
16. ISTC international workshop (<http://physecolab.y-su.am/>), 25-28 September, 2015, Tsakhkadzor, Armenia.

17. Online workshop, certificate of attendance on IB Chemistry, Category III workshop, November 2015.
18. "Nobel days in Yerevan" scientific event, April 12-14, 2016.
19. HORIZON 2020, INFORMATION DAY, FOCUS: ASSOCIATED COUNTRIES, ENERGY & ENVIRONMENT, SMEs June 3, 2016 Yerevan Armenia.
20. XIII International Symposium on Explosive Production of New Materials: Science, Technology, Business, and Innovations (EPNM-2016), 2016, June, Coimbra, Portugal.
21. ARMENIA TWINNING, Empowerment of the Tertiary Level Education of the Republic of Armenia for European Higher Education Area Integration "EHEA", 27-30 June, 2016.
22. 5th International Conference of Young Scientists (Chemistry today-2016), September 18-21, Tbilisi, Georgia.
23. H2020 ASSOCIATION CONFERENCE AND TRAINING SEMINAR, 10-11 NOVEMBER 2016, YEREVAN, ARMENIA.
24. Business trips to the Institute of Advanced Manufacturing Technology, Krakow, Poland, April 3-10, 2017, September 10-17, 2017.
25. Business trip to the Institute of Chemical Physics NAS RA, Yerevan, Armenia, May, 2017.
26. JTACC+V4 1st Journal of Thermal Analysis and Calorimetry Conference and 6th V4 (Joint Czech-Hungarian-Polish-Slovakian) Thermoanalytical Conference June 6–9, 2017, Budapest, Hungary.
27. ECerS2017 15th Conference & Exhibition of the European Ceramic Society July 9–13, 2017, Budapest, Hungary.
28. CA 15107 Training school "Nanocomposites - characterization and properties", Bialystok, Poland, June 11-16, 2017.
29. XIV International Symposium on Self-Propagating High-Temperature Synthesis, 25-28 September 2017, Tbilisi, Georgia.
30. V Научная конференция Армянского химического общества (с международным участием) АХО-5: «АКТУАЛЬНЫЕ ЗАДАЧИ ФУНДАМЕНТАЛЬНОЙ И ПРИКЛАДНОЙ ХИМИИ», 3-7 октября 2017, Ереван, НАН РА. V Scientific Conference of Armenian Chemical Society (with International Participation) "Current problems of Fundamental and Applied Chemistry", Yerevan, 3-7 October, 2017.
31. The International Conference Dedicated to the 50th Anniversary of Self-Propagating High Temperature Synthesis (SHS-50), November 20 – 21, 2017, Chernogolovka, Russia
32. GSFMT Scientific conference, 2018, Tallink Spa & Conference Hotel (Sadama 11a, Tallinn) March 7- 8, 2018, Tallinn, Estonia.
33. 2018 young Ceramists Additive Manufacturing Forum, 3-4 May, 2018, Padova, Italy.
34. STARTERtech Advanced Spring 2018 programme, Science and Innovation, Feb-May, 2018.
35. XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018), Saint Petersburg, Russia, May 14-18, 2018.
36. CIMTEC 2018 - 14th International Conference on Modern Materials and Technologies, Perugia, Italy, 14th International Ceramics Congress (June 4-8), 2018.
37. Workshop on Didactics of Higher Education, 03 Oct - 13 Dec, 156 h (6ECTS), 2018.
38. VI Научная конференция Армянского химического общества (с международным участием) АХО-6: «ВЫЗОВЫ XXI ВЕКА», 23-27 September, 2019, Yerevan, Armenia. VI Scientific Conference of Armenian Chemical Society (with International Participation).

39. ECerS2019, 16th Conference & Exhibition of the European Ceramic Society, June 16-20, 2019, Torino, Italy.
40. Modern Materials Manufacturing 2019, April 23-26, Tallinn, Estonia.
41. 50th IUPAC General Assembly, 47th IUPAC World Chemistry Congress, 5-12 July, 2019, Paris.
42. SHS2019, XV International Symposium on Self-Propagating High-Temperature Synthesis, 16-20 September, 2019, Moscow, Russia.
43. I Pillar of Horizon Europe: ERC, MSCA, and Research Infrastructures, March 17, 2021.
44. III Pillar of Horizon Europe: Introduction of the EIC Accelerator, evaluation of the projects and requirements for evaluators March 24, 2021.
45. 2nd European Conference on Silicon and Silica Based Materials, Miskolc-Lillafüred, October 4-8, 2021, Hungary.

RESEARCH SKILLS

Synthesis and characterization of nanomaterials, combustion synthesis (CS) of biomaterials, metals and alloys and characterization by X-ray diffraction, scanning electron microscope, gas-chromatography, chemical, atomic absorption and thermal analysis methods. Spark plasma sintering and additive manufacturing (3D printing) of metals, ceramics and cermets.

(Currently I am working on the preparation of hybrid powders by combustion synthesis (CS or SHS) for consolidation by spark plasma sintering and shaping by additive manufacturing technologies. I was involved in scientific projects dealing with Solid State Chemistry, Alloys

Preparation, Combustion Synthesis and Characterization of Nanomaterials, Metals and Alloys, Solution Combustion Synthesis of Catalytic Systems as a researcher and principal investigator. In these projects I was responsible for experiments design, distribution of experimental work between participants, materials purchase and characterization, reporting and article formulation. I was also involved in scientific works related to combustion synthesis (CS) of biomaterials and catalysts. I have been also a lecturer of *General & Inorganic chemistry, Crystalline chemistry, Chemical technology, Materials Science & Engineering*, as well as mentoring the individual research projects of high-school students.)

COLLABORATION, national and international

Aalto University, School of Engineering (Finland); from 01.12.2017; Description of collaboration: Additive manufacturing of composite materials.

Magnesiumcom (Latvia); from 01.05.2016; Description of collaboration: Novel materials for additive manufacturing.

Yerevan State University (Armenia); from 2008; Description of collaboration: Thermal analysis of combustion synthesized powders under various gas atmosphere; Investigation of reaction mechanism by high-speed temperature scanner; Modelling of diffusion mechanism (carbide formation, nitridation, oxidation) in high-temperature ceramic composites by electrothermography setup.

University of Notre Dame (United States); from 15.11.2013; Description of collaboration: Characterization of combustion synthesized materials by TEM, HR-SEM, X-ray diffraction analysis methods.

University of Illinois at Urbana - Champaign, Dep of Mechanical and Industrial Engineering, IL (US United States); 29.02.2016-31.03.2021; Description of collaboration: Nanonet of ceramic fibers and composites thereof, Development, characterization and modeling ceramic-based nanocomposites.

Instituto de Ciencia de Materiales de Madrid, CSIC (ES Spain); from 01.01.2014; Description of collaboration: Sintering; Composites; TEM characterization.

G.Tsulukidze Mining Institute and Andronikashvili Institute of Physics at TSU (Georgia); 2015-2017; W-Cu pseudoalloys semi-industrial production by combustion and explosive consolidation, The renovation and design of thermal analysis equipment.

University of Tartu (Estonia); from 2017; Description of collaboration: Sintering, composites; characterization.

Institute of advanced manufacturing technology (Poland); from 2017; Description of collaboration: Ultra-high pressure spark plasma sintering of novel high temperature materials.

PUBLICATIONS, Articles

1. Kh.V. Manukyan, S.V. Aydinyan, Kh.G. Kirakosyan, S.L. Kharatyan, G. Blugan, U. Muller, J.Kuebler, "Molten salt-assisted combustion synthesis and characterization of MoSi_2 and $\text{MoSi}_2\text{-Si}_3\text{N}_4$ composite powders", Chemical Engineering Journal, 143(2008), pp. 331-336.

2. S.V. Aydinyan, Zh. Gumryan, Kh.V. Manukyan and S.L. Kharatyan, "Self-sustaining reduction of MoO_3 by Mg + C mixture", Materials Science and Engineering B 172 (2010) 267–271.

3. Khachatur Manukyan, Narine Amirkhanyan, Sofiya Aydinyan, Vardan Danghyan, Ruzanna Grigoryan, Natalia Sarkisyan, Gennadi Gasparyan, Rouben Aroutiounian, Suren Kharatyan, Novel NiZr-based porous biomaterials: Synthesis and in vitro testing, Chemical Engineering Journal 162 (2010) 406–414.

4. S.V. Aydinyan, "The influence of diluent on the temperature regimes of MoO_3 reduction by Mg+C mixture", Chemical Journal of Armenia, volume 4, 2011, pp. 465-476 [in Russian].

5. Khachatur Manukyan, Sofiya Aydinyan, Astghik Aghajanyan, Yeva Grigoryan, Ofik Niazyan, Suren Kharatyan, "Reaction pathway in the $\text{MoO}_3\text{+Mg+C}$ reactive mixtures", Int. Journal of Refractory Metals and Hard Materials 31, 2012, pp. 28-32.

6. S.V. Aydinyan, A.M. Baghdasaryan, O.M. Niazyan, Kh.V. Manukyan, S.L. Kharatyan, Direct Reduction of Ammonium Paramolybdate to Mo and Mo_2C Powders by SHS, Modern technologies and methods of inorganic materials science, pp. 125-135, 4-6 June, 2012, Tbilisi, Georgia.

7. A.A. Aghajanyan, S.V. Aydinyan, O.M. Niazyan, Kh.V. Manukyan, S.L. Kharatyan, "Direct Magnesiothermic Reduction of Sodium Molybdate in the Combustion Mode", Fifth International Symposium on "Non-equilibrium Processes, Plasma, Combustion, and Atmospheric Phenomena" NEPCAP 2012, pp. 442-446, 1 – 6 October 2012, Sochi (Loo), Russia.

8. S.V. Aydinyan, H.V. Kirakosyan, O.M. Niazyan And S.L. Kharatyan. "DTA/TGA study of copper molybdate carbothermal reduction", Chemical J of Armenia, 2015, vol.68, No.2, pp 196-206.

9. H.V. Kirakosyan, T.T. Minasyan, O.M. Niazyan, S.V. Aydinyan, S.L. Kharatyan. "DTA/TGA Study of CuO and MoO₃ Co-reduction by Combined Mg/C Reducers", J Therm Anal Calorim, 2016, vol. 123, No1, pp. 35-41, DOI 10.1007/s10973-015-4919-z.
10. S.V. Aydinyan, H.V. Kirakosyan, S.L. Kharatyan. "Cu-Mo composite powders obtained by combustion-corededuction process", Int J Refractory Metals & Hard Materials, 2016, vol. 54, pp. 455-463, doi:10.1016/j.ijrmhm.2015.09.002.
11. A.V. Temuryan, J.V. Sargsyan, S.V. Aydinyan, Mathematical methods of problem solving on alloys in chemistry, Bnaget, N2, 2015, pp. 36-42 [in Armenian].
12. S. Aydinyan, H. Kirakosyan, O.Niazyan, M. Tumanyan, Kh. Nazaretyan, S. Kharatyan, Reaction pathway in the WO₃-CuO-Mg-C system at nonisothermal conditions, Arm. J. Physics, Armenian Journal of Physics, 2016, vol. 9, issue 1, pp. 83-88.
13. M.K. Zakaryan, S.V. Aydinyan, S.L. Kharatyan, Preparation of fine-grained silicon from serpentine mineral by magnesiothermic reduction of silica in the presence of reaction products as diluents, Silicon, 2017, Volume 9, Issue 6, pp 841–846.
14. H. V. Kirakosyan, S. V. Aydinyan, and S. L. Kharatyan, W-Cu Composite Powders Obtained by Joint Reduction of Oxides in Combustion Mode, Int. J. Self-Propag. High-Temp. Synth., 2016, Volume 25, Issue 4, pp 215–223.
15. T. Minasyan, S. Aydinyan, S. Kharatyan, Combustion synthesis of Mo-Cu composite powders from oxide precursors with various proportions of metals, Chemical Journal of Armenia, 2016, No. 69, 1-2, pp. 47-57.
16. Niazyan, O. M. and Aydinyan, S. V. and Kharatyan, S. L. (2016) DTA/TG study of reduction mechanism of WO₃+CuO mixture by combined Mg/C reducer. Chemical Journal of Armenia., 69 (4). pp. 399-406. ISSN 0515-9628.
17. M. Zakaryan, S. V. Aydinyan, H. V. Kirakosyan, S. L. Kharatyan, Combustion synthesis of W-Cu composite powders from oxide precursors with various proportions of metals, International Journal of Refractory Metals and Hard Materials, 2016, vol. 54, pp. 455-463.
18. H.V. Kirakosyan, Kh.T. Nazaretyan, Kh.Gh. Kirakosyan, M.E. Tumanyan, S.V. Aydinyan, S.L. Kharatyan, Nanosize molybdenum carbide preparation by sol-gel combustion synthesis with subsequent fast heating, Chemical Journal of Armenia, 2017, vol. 70, N 1-2, pp. 11-19.
19. S.V. Aydinyan, Kh.T. Nazaretyan, A.G. Zargaryan, M.E. Tumanyan, S.L. Kharatyan, Reduction Mechanism of WO₃+CuO Mixture by Combined Mg/C Reducer. Non Isothermal Conditions: High Heating Rates, J Therm Anal Calorim, 2018, 133:261–269, 10.1007/s10973-018-6985-5
20. Zakaryan , M. K and Kirakosyan, H. V. and Abovyan , L. S. and Aydinyan , S. V. and Kharatyan , S. L.(2017), Magnesio-carbothermal reduction of CuWO₄/MeO nanostructured precursors & synthesis of W/Cu composite materials, Chemical Journal of Armenia, 70 (4). pp. 450-461.
21. Tatevik Minasyan; Le Liu; Lauri Kollo; Nikhil Kamboj; Sofiya Aydinyan; Irina Hussainova, "A novel approach to fabricate Si₃N₄ by selective laser melting", Ceramics International, 2018. <https://doi.org/10.1016/j.ceramint.2018.04.208>
22. Tatevik Minasyan; Le Liu; Sofiya Aydinyan; Lauri Kollo; Irina Hussainova; Miguel A Rodríguez , "Combustion synthesis of MoSi₂ based composite and selective laser sintering thereof", Journal of the European Ceramic Society 38(11), 2018, pp. 3814-3821. <https://doi.org/10.1016/j.jeurceramsoc.2018.04.043>.
23. Tatevik Minasyan, Hasmik Kirakosyan, Sofiya Aydinyan, L. Liu, I. Hussainova, Suren Kharatyan, Combustion Synthesis of Mo-Cu Composite Nanopowder from Copper Molybdate and Subsequent Consolidation, Journal of Materials Science JMSC, 2018. <https://doi.org/10.1007/s10853-018-2787-1>

24. H.V. Kirakosyan, Kh.T. Nazaretyan, R. Mnatsakanyan, S.V. Aydinyan, S.L. Kharatyan, Solution combustion synthesis of nanostructured molybdenum carbide, *Journal of Nanoparticle Research (NANO)*, 20.214, 2018. DOI: 10.1007/s11051-018-4312-5
25. S.V. Aydinyan, S.L. Kharatyan, THERMALLY AND KINETICALLY COUPLED REACTIONS AT COMBUSTION SYNTHESIS OF MATERIALS, monograph, *Technological combustion (in Russian)*, ed. Aldoshin&Alymov, 2018. 10.31857/S9785907036383000017.
26. S.V. Aydinyan, Marieta Zakaryan, Hasmik Kirakosyan, Larisa Abovyan, Suren Kharatyan, Akaki Peikrshvili, Bagrat Godibadze, E.Sh. Chagelishvili, Grigor Mamniashvili, Manuel Gutierrez Stampa, Donald Lesuer, Fabrication of Cu-W Nanocomposite Materials by Combining Self-propagating High-temperature Synthesis and Hot Explosive Consolidation Technologies, *Eurasian Chemico-Technological Journal*, 20, 2018.
27. Marieta Zakaryan, Sofiya Aydinyan, Suren Kharatyan, Combustion synthesis and consolidation of Ni-W nanocomposite material, *Ceramics in Modern Technologies*, 2018. <https://doi.org/10.29272/cmt.2018.0007>.
28. Le Liu, Sofiya Aydinyan, Tatevik Minasyan, Janis Baronins, Maksim Antonov, Suren Kharatyan, Irina Hussainova, Spark Plasma Sintering of Combustion Synthesized TiB₂-Si Composite, *Ceramics in Modern Technologies*, 2018. <https://doi.org/10.29272/cmt.2018.0009>.
29. M.K. Zakaryan, O.M. Niazyan, S.V. Aydinyan, S.L. Kharatyan, DTA/TG study of NiO Reduction by Mg+C combined reducer, *Chemical Journal of Armenia*, vol. 71, pp. 473-485, 2018.
30. Minasyan, T., Liu, L., Holovenko, Y., Aydinyan, S. and Hussainova, I., 2019. Additively manufactured mesostructured MoSi₂-Si₃N₄ ceramic lattice. *Ceramics International*. 45, 8, pp. 9926-9933, 10.1016/j.ceramint.2019.02.035.
31. Tatevik Minasyan, Le Liu, Marina Aghayan, Miguel A. Rodriguez, Sofiya Aydinyan, Irina Hussainova, Mesoporous fibrous silicon nitride by catalytic nitridation of silicon, *Progress in Natural Science: Materials International*, 2019, 10.1016/j.pnsc.2019.03.017.
32. Davtyan, D., R.Mnatsakanyan, L.Liu, S.Aydinyan, I.Hussainova, "Microwave synthesis of B₄C nanopowder for subsequent spark plasma sintering." *Journal of Materials Research and Technology* (2019). 10.1016/j.jmrt.2019.09.052.
33. Mahmoudi, H. A., Abovyan, L. S., Aydinyan, S. V., & Kharatyan, S. L. (2019). SHS Reprocessing of Copper Oxide Waste into Copper Powder. *International Journal of Self-Propagating High-Temperature Synthesis*, 28(4), 233-238.
34. Zakaryan, M. K., Niazyan, O. M., Aydinyan, S. V., & Kharatyan, S. L. (2019). Reaction pathway in the WO₃-NiO-Mg-C system. DTA/TG study. Հայաստանի քիմիական հանդես. *Chemical Journal of Armenia. Химический журнал Армении*, 72(3), 223-232.
35. Liu, L., Minasyan, T., Aydinyan, S., & Hussainova, I. (2019). The Preparation of TiC/TiN Composites by Selective Laser Melting. In *Key Engineering Materials (Vol. 799, pp. 165-170)*. Trans Tech Publications Ltd.
36. Aydinyan, S., Minasyan, T., Liu, L., Cygan, S., & Hussainova, I. (2019). ZrC Based Ceramics by High Pressure High Temperature SPS Technique. In *Key Engineering Materials (Vol. 799, pp. 125-130)*. Trans Tech Publications Ltd.
37. Minasyan, T., Liu, L., Aydinyan, S., Antonov, M., & Hussainova, I. (2019). Selective Laser Melting of Ti/cBN Composite. In *Key Engineering Materials (Vol. 799, pp. 257-262)*. Trans Tech Publications Ltd. 10.4028/www.scientific.net/KEM.799.257.

38. Liu, L., Minasyan, T., Ivanov, R., Aydinyan, S., & Hussainova, I. (2020). Selective laser melting of TiB₂-Ti composite with high content of ceramic phase. *Ceramics International*. 10.1016/j.ceramint.2020.05.189.
39. Liu, L., Aydinyan, S., Minasyan, T., & Hussainova, I. (2020). SHS Produced TiB₂-Si Powders for Selective Laser Melting of Ceramic-Based Composite. *Applied Sciences*, 10(9), 3283. 10.3390/app10093283
40. Hussainova, I., Minasyan, T., Liu, L., & Aydinyan, S. (2020, April). ZrC-TiC-MoSi₂ ceramic composite by spark plasma sintering. In *Journal of Physics: Conference Series* (Vol. 1527, No. 1, p. 012028). IOP Publishing. doi:10.1088/1742-6596/1527/1/012028
41. Liu, L., Minasyan, T., Kamboj, N., Aydinyan, S., & Hussainova, I. (2020). Bio-inspired TiB₂-TiB-TiN lattices by selective laser melting. *Materials Letters*, 128337. doi.org/10.1016/j.matlet.2020.128337
42. Zakaryan, M. K., Nazaretyan, K. T., Aydinyan, S. V., & Kharatyan, S. L. (2020). NiO reduction by Mg+ C combined reducer at high heating rates. *Journal of Thermal Analysis and Calorimetry*, 1-7. doi.org/10.1007/s10973-020-10148-5
43. Minasyan, T., Aydinyan, S., Toyserkani, E., & Hussainova, I. (2020). In Situ Mo (Si,Al)₂-based Composite through Selective Laser Melting of a MoSi₂-30wt.%AlSi10Mg Mixture. *Materials*, 13(17), 3720. doi.org/10.3390/ma13173720.
44. Minasyan, T., Aydinyan, S., Toyserkani, E., & Hussainova, I. (2020). Parametric Study on In Situ Laser Powder Bed Fusion of Mo(Si_{1-x},Al_x)₂. *Materials*, 13(21), 4849. doi.org/10.3390/ma13214849.
45. Minasyan, T., Aydinyan, S., Liu, L., Volubujeva, O., Toyserkani, E., & Hussainova, I. (2020). Mo (Si_{1-x},Al_x)₂-based composite by reactive laser powder-bed fusion. *Materials Letters*, 281, 128776. doi.org/10.1016/j.matlet.2020.128776.
46. Mnatsakanyan, R., Davtyan D., Minasyan T., Aydinyan S., Hussainova I., Superhard B₄C-ReB₂ composite by SPS of microwave synthesized nanopowders, *Materials Letters* (2020): 129163. doi.org/10.1016/j.matlet.2020.129163.
47. Nazaretyan, K. T., Kirakosyan, H. V., Aydinyan, S. V., Zakaryan, M. K., Abovyan, L. S., Kulak, M., & Khina, B. (2021, May). The influence of high-energy ball milling and nanoadditives on the kinetics of heterogeneous reaction in Ni-Al system. In *IOP Conference Series: Materials Science and Engineering* (Vol. 1140, No. 1, p. 012052). IOP Publishing.
48. Aydinyan, S., Kharatyan, S., & Hussainova, I. (2021). SHS-Derived Powders by Reactions' Coupling as Primary Products for Subsequent Consolidation. *Materials*, 14(17), 5117.
49. Zakaryan, M., Nazaretyan, K., Aydinyan, S., & Kharatyan, S. (2021). Joint Reduction of NiO/WO₃ Pair and NiWO₄ by Mg+ C Combined Reducer at High Heating Rates. *Metals*, 11(9), 1351.
50. Kirakosyan, H., Nazaretyan, K., Aydinyan, S., & Kharatyan, S. (2021). The Mechanism of Joint Reduction of MoO₃ and CuO by Combined Mg/C Reducer at High Heating Rates. *Journal of Composites Science*, 5(12), 318.
51. Aydinyan, S., Kharatyan, S., & Hussainova, I. (2022). The Influence of Thermal Dilution on the Microstructure Evolution of Some Combustion-Synthesized Refractory Ceramic Composites. *Crystals*, 12(1), 59.
52. Kumar, R., Aydinyan, S., Ivanov, R., Liu, L., Antonov, M., & Hussainova, I. (2022). High-Temperature Wear Performance of hBN-Added Ni-W Composites Produced from Combustion-Synthesized Powders. *Materials*, 15(3), 1252.
53. Nazaretyan, K., Kirakosyan, H., Zakaryan, M., Abovyan, L., Volobujeva, O., & Aydinyan, S. (2022). The Interaction Pathway in the Mechano-Ultrasonically Assisted and Carbon-Nanotubes Augmented Nickel–Aluminum System. *Metals*, 12(3), 436.

54. Aydinyan, S., Kirakosyan, H., Sargsyan, A., Volobujeva, O., & Kharatyan, S. (2022). Solution combustion synthesis of MnFeCoNiCu and (MnFeCoNiCu)₃O₄ high entropy materials and sintering thereof. *Ceramics International*.

55. Andrey V. Smirnov, Yurii D. Ivakin, Maxim V. Korniyushin, Anastasia A. Kholodkova, Alexander A. Vasin, Vadim P. Tarasovskii, Sofiya V. Aydinyan, Hasmik V. Kirakosyan, The Cold Sintering Process of High-entropy Ceramics (MnFeCoNiCu)₃O₄, INTERNATIONAL JOURNAL OF MECHANICAL ENGINEERING ISSN: 0974-5823.

PUBLICATIONS, Patents

1. Invention: Self-functionalizing fibrous networks of Si₃N₄ with complex geometry and manufacturing thereof; Owners: Tallinn University of Technology; Authors: Le Liu, Tatevik Minasyan, Sofiya Aydinyan, Marina Aghayan, Irina Hussainova; Priority number: EP17174463.4; Priority date: 5.06.2017.

2. Invention: TiB₂ based complex structures by selective laser sintering; Owners: Tallinn University of Technology, School of Engineering, Department of Mechanical and Industrial Engineering; Authors: Sofiya Aydinyan, Le Liu, Tatevik Minasyan, Irina Hussainova; Priority number: US62/677975; Priority date: 30.05.2018.

3. Invention: A method of direct laser shaping ceramic-intermetallic composites of MoSi₂ and/or Mo(Si,Al)₂ and Al and/or Al alloy; Owners: Tallinn University of Technology; Authors: Sofiya Aydinyan, Le Liu, Tatevik Minasyan, Irina Hussainova; Priority number: GB1908943.2; Priority date: 21.06.2019.

PUBLICATIONS, Abstracts & Conference Proceedings

1. S.V. Aydinyan, Kh.V. Manukyan, A.B. Harutyunyan, S.L. Kharatyan, "Combustion of the Mo-Si-N₂ system in the presence of inert diluents", International Conference "Nonisothermal Phenomena and Processes", Book of Abstracts, Nov.27-Dec.4, p.40, 2006, Yerevan.

2. A.S. Khachikyan, S.V. Aydinyan, Kh.V. Manukyan, S.L. Kharatyan, G.H. Gasparyan. "Chemically activated combustion synthesis of ZrNi biomaterials", International Conference on Chemistry and Chemical Technology, 24-27 October, pp.51-53, 2007, Yerevan.

3. S.V. Aydinyan, Kh.V. Manukyan, S.L. Kharatyan. "Self-sustaining reduction of MoO₃ by means of combined reducers", Current Problems of Chemical Physics, 21-24 October, pp.128-129, 2008, Yerevan.

4. S.V. Aydinyan, S.L. Kharatyan, "Molybdenum oxide reduction by combined reducers in the combustion mode", Young Scientists's Symposium devoted to the 90th anniversary of Yerevan State University, p. 12, 11-15 May, 2009, Yerevan, Armenia [in Armenian].

5. S.V. Aydinyan, J. Gumruyan, A. Aghajanyan, Kh.V. Manukyan, S.L. Kharatyan, Effect of carbon (organic polymer) additions on the combustion laws for MoO₃-Mg termite-type reaction, X International Symposium on SHS, Tsakhkadzor, 6-11 July, 2009, pp.141-142, Armenia.

6. S.V. Aydinyan, S.L. Kharatyan, "SHS of molybdenum carbide (Mo₂C) via MoO₃ reduction by Mg+C mixture", Armenian Chemical Society II Conference, Advanced materials and processes, 2010, october 4-8, pp. 100, Yerevan-Goris.

7. S.V. Aydinyan, A.A. Aghajanyan, Kh.V. Manukyan, E.G. Grigoryan, O.M. Niazyan, S.L. Kharatyan, "Phase formation mechanism in the molybdenum oxide reduction by Mg + C mixture", XI International

Symposium on Self-Propagating High Temperature Synthesis, 5 -9 September 2011, Anavyssos, Attica, GREECE.

8. A.A. Aghajanyan, S.V. Aydinyan, A.M. Baghdasaryan, O.M. Niazyan, Kh.V. Manukyan, S.L. Kharatyan, "Sodium molybdate reduction by magnesium. SHS of Mo metal and mechanism study by DTA/DTG method", Current Problems of Chemical Physics" dedicated 50-year of the Institute of Chemical Physics NAS RA, pp. 231-232, 9-12 October, 2012, Yerevan, Armenia.

9. S. V. Aydinyan, "SHS as a modern method for the synthesis of inorganic materials", Young Scientists Achievements and Perspectives, Young Scientists Forum, 2012, pp. 22-24, Tsakhkadzor, Armenia.

10. L.E. Faryan, S.V. Aydinyan, Kh.V. Manukyan, S.L. Kharatyan, "Mo₂C synthesis by direct reduction of ammonium heptamolybdate tetrahydrate in the combustion mode", Current Problems of Chemical Physics" dedicated 50-year of the Institute of Chemical Physics NAS RA, pp. 233-234, 9-12 October, 2012, Yerevan, Armenia.

11. S.V. Aydinyan, Kh.G. Kirakosyan, M.E. Tumanyan, A.G. Zargaryan, S.L. Kharatyan, "The reaction mechanism in the MoO₃-Mg-C system at non-isothermal conditions. High heating rates", Current Problems of Chemical Physics" dedicated 50-year of the Institute of Chemical Physics NAS RA, pp. 124-125, 9-12 October, 2012, Yerevan, Armenia.

12. T.T. Minasyan, S.V. Aydinyan, Pseudo alloys. Synthesis of pseudo alloys by combined reduction of oxides", Young scientists' achievements and prospects, Aghveran, Armenia, 2013, 1-3 November, pp. 112-117.

13. S.V. Aydinyan, D.H. Davtyan, Kh.V. Manukyan, S.L. Kharatyan, Ammonium paratungstate reduction by combined Mg-Zn reducers in combustion mode, XII International Symposium on Self-Propagating High-Temperature Synthesis, pp. 98-99, 21-24 October 2013, South Padre Island, TX, USA.

14. S.V. Aydinyan, Kh.V. Manukyan, S.L. Kharatyan, The role of NH₄F on the magnesiothermic reduction of Na₂MoO₄, XII International Symposium on Self-Propagating High-Temperature Synthesis, pp. 96-97, 21-24 October 2013, South Padre Island, TX, USA.

15. S.V. Aydinyan, Kh.V. Manukyan, S.L. Kharatyan, Combustion Synthesis of Mo-Cu Nanocomposites by Co-reduction of Molybdenum and Copper Oxides, XII International Symposium on Self-Propagating High-Temperature Synthesis, pp. 100-101, 21-24 October 2013, South Padre Island, TX, USA.

16. S.V. Aydinyan, S.L. Kharatyan, Combustion Synthesis of Copper - Refractory Metal Composites by Co-reduction Approach, 13th International Ceramic Congress (CIMTEC-2014), 8-13 June, 2014, Montecatini Terme, Italy, CB-9.5:L06, http://www.cimtecongress.org/abstracts_special_session_cb-9.

17. M. Zakaryan, S. Aydinyan, Magnesiothermic reduction of silica's of various origin and preparation of silicon, CHEMISTRY TODAY-2014, 4-th International Conference of Young Scientists, pp. 146-149, 18-22 August 2014, Yerevan, Armenia.

18. T. Minasyan, S. Aydinyan, Combined reduction of copper and molybdenum oxides in combustion mode, CHEMISTRY TODAY-2014, 4-th International Conference of Young Scientists, pp. 143-145, 18-22 August 2014, Yerevan, Armenia.

19. Hasmik Kirakosyan, Sofiya Aydinyan, Suren Kharatyan, Thermo-kinetic coupling of chemical reactions in combustion wave. Coreduction of copper and molybdenum oxides by combined reducers, Materials 4th scientific conference of Armenian Chemical Society "Achievements and Challenges", 7-11 October, 2014, Yerevan-Vanadzor, pp. 66-69.

20. S. Aydinyan, H. Kirakosyan, O.Niazyan, M. Tumanyan, Kh. Nazaretyan, S. Kharatyan, Reaction pathway in the WO₃-CuO-Mg-C system at nonisothermal conditions, Abstract, ISTC International workshop " Ionizing and Non-Ionizing Radiation Influence on Structure and Biophysical Properties of Living Cells", Tsakhkadzor, 25-28 September, 2015, pp.94-95.

21. S.V. Aydinyan, H.V. Kirakosyan, M. Tumanyan, S.L. Kharatyan, COMBUSTION SYNTHESIS OF Cu-W PSEUDOALLOYS FROM OXIDE/SALT PRECURSORS, Abstract, IV International Conference "Current problems of Chemical Physics", Yerevan, 6-9 October, 2015, pp.143-144.
22. M.K. Zakaryan, S.V. Aydinyan, S.L. Khartayan, Preparation of fine-grained silicon by magnesiothermic reduction of silica in the presence of reaction products as diluents, Abstract, IV International Conference "Current problems of Chemical Physics", Yerevan, 5-9 October, 2015, pp. 195-196.
23. Kirakosyan Hasmik, Minasyan Tatev, Aydinyan Sofiya, Kharatyan Suren, Combustion synthesis of Cu-Mo and Cu-W pseudoalloys from various precursors, ECERS 2015 14th European Ceramics Society Conference, Toledo, Spain, 21-25 June, 2015, 2261.
24. Zakaryan Marieta, Aydinyan Sofiya, Zulumyan Nshan, Kharatyan Suren, Magnesiothermic Reduction of Silica Obtained from Serpentine Mineral and Preparation of Fine Silicon Powder, ECERS 2015 14th European Ceramics Society Conference, Toledo, Spain, 21-25 June, 2015, 2260.
25. Zakaryan Marieta, Aydinyan Sofiya, Combustion reduction of silica's from various origin and preparation of silicon, "Modern technology and scientific methods in the field of expertise", Tsakhkadzor, 16-17 June, 2015, pp. 421-429.
26. T. Minasyan, S. Aydinyan, Combined reduction of copper and molybdenum oxides in combustion mode, "Modern technology and scientific methods in the field of expertise", Tsakhkadzor, 16-17 June, 2015, pp. 458-465.
27. T.T. Minasyan, S.V. Aydinyan, O.M. Niazyan, S.L. Kharatyan."Mo-Cu synthesis by combustion-reduction process from the copper molybdate", Abstract, IV International Conference "Current problems of Chemical Physics", Yerevan, 5-9 October, 2015, pp. 187-188.
28. S.V. Aydinyan, H.V. Kirakosyan, S.L. Kharatyan, A. Peikrishvili, G. Mamniashvili, B. Godibadze, E.Sh. Chagelishvili, D.R. Lesuer, M. Gutierrez, Synthesis and Fabrication of Cu–W Composites Combining SHS and HEC Technologies, XIII International Symposium on Explosive Production of New Materials: Science, Technology, Business, and Innovations (EPNM-2016), 2016, June, Coimbria, Portugal.
29. Kirakosyan H.V., Abovyan L., Aydinyan S.V., Kharatyan S.L., Godibadze B.A., Mamniashvili G.I., Peikrishvili A.B., Preparation of W-Cu composite powder from salt precursors by SHS, 5th International Conference of Young Scientists (Chemistry today-2016), September 18-21, Tbilisi, Georgia, pp. 42-44.
30. Zakaryan M.K., Kirakosyan H.V., Aydinyan S.V., Kharatyan S.L., Godibadze B.A., Mamniashvili G.I., Peikrishvili A.B., Combustion synthesis of 2W-Cu & W-3Cu composite nanopowders from oxide precursors, 5th International Conference of Young Scientists (Chemistry today-2016), September 18-21, Tbilisi, Georgia, pp. 20-23.
31. Khachik Nazaretyan, Hasmik Kirakosyan, Sofiya Aydinyan, Suren Kharatyan, PREPARATION OF NANOSIZE MO_2C BY COMBINING SOLUTION COMBUSTION SYNTHESIS WITH SUBSEQUENT FAST HEATING, JTACC+V4 Conference, June 6–9, 2017, Budapest, Hungary, p. 58.
32. Khachik Nazaretyan, Armen Zargaryan, Sofiya Aydinyan, Suren Kharatyan, STUDY OF REDUCTION MECHANISM OF WO_3+CuO MIXTURE BY COMBINED Mg/C REDUCER – INFLUENCE OF HIGH HEATING RATE JTACC+V4 Conference, June 6–9, 2017, Budapest, Hungary, pp. 206-207.
33. Sofiya Aydinyan, Tatevik Minasyan, Hasmik Kirakosyan, Marina Aghayan, Irina Hussainova, Suren Kharatyan, Fabrication of Cu-Mo composites combining SHS and SLS technologies, ECerS2017 15th Conference & Exhibition of the European Ceramic Society July 9–13, 2017, Budapest, Hungary.
34. Sofiya Aydinyan, Suren Kharatyan, THE MECHANISM OF $WO_3(MoO_3)$ & CuO COREDUCTION BY COMBINED Mg/C REDUCER AT NON ISOTHERMAL CONDITIONS, SHS2017, Georgia, Tbilisi, September 25-29, pp. 45-47.

35. Khachik Nazaretyan, Hasmik Kirakosyan, Sofiya Aydinian, Suren Kharatyan, Nanosized molybdenum carbide synthesized by solution combustion synthesis with subsequent thermal treatment, SHS2017, Georgia, Tbilisi, September 25-29, pp. 175-176.
36. T.T. Minasyan, S.V. Aydinian, S.L. Kharatyan, "Selective Laser Melting Of Combustion Synthesized 2Mo-Cu and 3Cu-Mo Composites", p. 155-156, XIV International Symposium On Self-Propagating High Temperature Synthesis September 25-28, 2017, Tbilisi, Georgia.
37. M.K. Zakaryan, L.S. Abovyan, H.V. Kirakosyan, S.V. Aydinian, S.L. Kharatyan, Combustion Synthesis of W/Cu Nanopowders from $\text{CuWO}_4/\text{WO}_3$ & CuWO_4/CuO Precursors Derived by SCS Method, ArmCS-5: "ACTUAL PROBLEMS OF FUNDAMENTAL AND APPLIED CHEMISTRY", 3-7 October, 2017, Yerevan, Armenia, pp. 110
38. Kh. Nazaretyan, H. Kirakosyan, S. Aydinian. "Copper molybdate reduction by combined Mg/C reducer", V Scientific Conference of the Armenian Chemical Society (with international participation), Yerevan, 2017, oct. 3-7, p.118.
39. M.K. Zakaryan, H.V. Kirakosyan, L.S. Abovyan, S.V. Aydinian, S.L. Kharatyan, Combustion synthesis of W/Cu nanopowder from $\text{CuWO}_4/\text{WO}_3$ & CuWO_4/CuO precursors derived by SCS method, V Scientific Conference of the Armenian Chemical Society (with international participation), Yerevan, 2017, oct. 3-7, p. 110
40. Hasmik Kirakosyan, Khachik Nazaretyan, Sofiya Aydinian, Manvel Tumanyan, Suren Kharatyan A new synthesis pathway for molybdenum carbide nanopowder by solution combustion, The International Conference Dedicated to the 50th Anniversary of Self-Propagating High Temperature Synthesis (SHS-50), November 20 – 21, 2017, Chernogolovka, Russia, pp.35-36.
41. Tatevik Minasyan, Sofiya Aydinian, Le Liu, Sławomir Cygan, Irina Hussainova, "Ultrahigh Pressure Spark Plasma Sintering Of ZrC-TiC-MoSi_2 and $\text{ZrC-TiC-Si}_3\text{N}_4$ Composites", FMTDK Scientific conference 2018, 7-8 March, Tallinn, Estonia.
42. Liu, L.; Minasyan, T.; Aydinian, S.; Hussainova, I. (2018). A novel route for the preparation of TiB_2/TiN composites by selective laser sintering. FMTDK Scientific conference 2018, 7-8 March, Tallinn, Estonia.
43. T. Minasyan, L. Liu, L. Kollo, S. Aydinian, I. Hussainova, "A novel approach of $\text{MoSi}_2/\text{Si}_3\text{N}_4$ lattice preparation", 2018 young Ceramists Additive Manufacturing Forum, 3-4 May 2018, Padova, Italy, pp. 40.
44. T. Minasyan, L. Liu, S. Aydinian, I. Hussainova, "A Selective Laser Melting For The Manufacturing Of Combustion Synthesized TiB_2/Si Composites", 2018 young Ceramists Additive Manufacturing Forum, 3-4 May 2018, Padova, Italy, p. 9.
45. T. Minasyan, H. Kirakosyan, S. Aydinian, L. Liu, I. Hussainova, S. Kharatyan, "Synthesis and Consolidation of Mo-Cu Composite Nanopowder", XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018), May 14-18, Saint Petersburg, Russia, pp. 151-153.
46. Tatevik Minasyan, Sofiya Aydinian, Le Liu, Sławomir Cygan, Irina Hussainova, SINTERING BEHAVIOR OF ZrC-TiC-MoSi_2 CERAMIC COMPOSITE, XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018), May 14-18, Saint Petersburg, Russia, pp. 148-150.
47. M. Zakaryan, S. Aydinian, S. Kharatyan, Synthesis of Ni-W nanopowders from oxide and salt precursors in combustion mode by using thermo kinetic coupling approach, XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018), May 14-18, Saint Petersburg, Russia, pp. 298-300.

48. S.V. Aydinyan, L.Liu, I. Hussainova, Selective Laser Sintering of Ti-B-Si System produced by SHS, CIMTEC 2018 - 14th International Conference on Modern Materials and Technologies, Perugia, Italy, 14th International Ceramics Congress (June 4-8), 2018.
49. Le Liu, Sofiya Aydinyan, Tatevik Minasyan, Irina Hussainova, Selective laser melting of combustion synthesized titanium diboride based composites, EuroPM 2018, Congress and Exhibition, 14-18 October, Bilbao, Spain, ISBN: 978-1-899072-50-7, 3987459.
50. Tatevik Minasyan, Le Liu, Sofiya Aydinyan, Lauri Kollo, Marina Aghayan, Irina Hussainova, "Lattice of MoSi₂/Si₃N₄ by selective laser melting", EuroPM 2018, Congress and Exhibition, 14-18 October, Bilbao, Spain, ISBN: 978-1-899072-50-7, 3993050.
51. Le Liu, Sofiya Aydinyan, Tatevik Minasyan, Irina Hussainova, Novel Approach For The Preparation Of Shapes From TiB₂-Si₃N₄ Composite By Selective Laser Melting, EuroPM 2018, Congress and Exhibition, 14-18 October, Bilbao, Spain, ISBN: 978-1-899072-50-7, 3987173.
52. Sofiya Aydinyan, Le Liu, Irina Hussainova, Novel approach for the selective laser sintering of combustion synthesized titanium diboride based ceramic composites, 2018 World Congress on Powder Metallurgy, 16-18 September, Beijing, China, 2018, pp. 1617-1621.
53. Minasyan Tatevik, Aydinyan Sofiya, Liu Le, Cygan Sławomir, Hussainova Irina, High Pressure High Temperature Consolidation of ZrC Based Ceramic Composites, 2018 World Congress on Powder Metallurgy, 16-18 September, Beijing, China, 2018, pp. 515-518.
54. Tatevik Minasyan, Le Liu, Sofiya Aydinyan, Irina Hussainova, Mesoporous fibrous silicon nitride by catalytic nitridation of silicon and selective laser melting, ECerS2019, 16-20 June, Torino, Italy, ABS375, S01 Innovative Processing and Synthesis.
55. Sofiya Aydinyan, Le Liu, Tatevik Minasyan, Irina Hussainova, Selective laser melting of ceramic composites, ECerS2019, 16-20 June, Torino, Italy, ABS833, S01 Innovative Processing and Synthesis.
56. Zakaryan, M. K., Nazaretyan, K. T., Aydinyan, S. V., & Kharatyan, S. L. (2019). JOINT REDUCTION OF NiO+ WO₃ OXIDES BY COMBINED Mg/C REDUCER. SYNERGETIC EFFECT. In International Symposium on Self-Propagating High-Temperature Synthesis (No. XV).
57. Minasyan, T.; Liu, L.; Aydinyan, S.; Hussainova, I. (2019). Selective Laser Melting Of Combustion Synthesized MoSi₂ Based Composites. SHS-2019: XV International Symposium on Self-Propagating High-Temperature Synthesis -2019, Moscow, Russia, 16-20 September. Interdivisional group of Catalysis (GIC)
58. Minasyan, T.; Liu, L.; Aydinyan, S.; Hussainova, I. (2019). MoSi₂ based composites by selective laser melting. APICAM 2019: APICAM 2019 - Asia-Pacific International Conference on Additive Manufacturing, RMIT University, Melbourne, VIC, AUSTRALIA, June 30 to July 3. RMIT University, Melbourne.
59. Liu, L.; Minasyan, T.; Ivanov, R.; Kollo, L.; Aydinyan, S.; Hussainova, I. (2019). Fabrication of Copper by Selective Diode Laser Melting. Euro PM2019 Congress & Exhibition, 13 - 16 October 2019. Maastricht: European Powder Metallurgy Association.
60. Narine Amirkhanyan, Hasmik Kirakosyan, Marieta Zakaryan, Alina Zurnachyan, Sofiya Aydinyan, Self-Propagating High-Temperature Synthesis of Silicon Carbide Using Reactions Thermokinetic Coupling Approach. Book of abstracts ec-siliconf2 the 2 nd European Conference on Silicon and Silica Based Materials and ic-cmtp6 the 6 th International Conference on Competitive Materials and Technology Processes Miskolc-Lillafüred, Hungary October 4-8, 2021 page 118.
61. S. Aydinyan, I. Hussainova, S. Kharatyan, SHS-derived powders obtained by coupled reactions and thermal dilution for subsequent consolidation, Session CA-11.2, oral presentation, CIMTEC 2022, 15th International Ceramics Congress, Montecatini Terme, Italy June 20-24, 2022.

62. Kh. Nazaretyan, M. Tumanyan, S. Aydinyan, S. Kharatyan, Kinetic studies of high entropy FeNiAlCo and FeNiAlCoCr alloys formation at high heating rates, Session CA-11.2, poster presentation, CIMTEC 2022, 15th International Ceramics Congress, Montecatini Terme, Italy June 20-24, 2022.

63. H. Kirakosyan, Ani, S. Aydinyan, S. Kharatyan, Solution combustion synthesis and spark plasma sintering of magnetic high entropy materials, Session CA-11.2, oral presentation, CIMTEC 2022, 15th International Ceramics Congress, Montecatini Terme, Italy June 20-24, 2022.

64. Marieta Zakaryan, Narine Amirhanyan, Hasmik Kirakosyan, Alina Zurnachyan, Sofiya Aydinyan, Combustion Synthesis of Nanoscale Boron and Silicon Carbides, Session CA-11.2, oral presentation, CIMTEC 2022, 15th International Ceramics Congress, Montecatini Terme, Italy June 20-24, 2022.

Reviews in International Journals

Journal of Alloys and Compounds

Journal of Thermal Analysis and Calorimetry

International Journal of Refractory Metals and Hard Materials

Trans Tec Publications

Journal of Materials Science

Nanomaterials

ECS Journal of Solid State Science and Technology

MDPI, Metals

Journal of Materials Research and Technology

Materials Today Communications

Materials Letters

Peer Reviewer of the Science Committee of Armenia

Peer Reviewer of the Science Fund of the Republic of Serbia

Supervision and mentoring (university-students, high-school students)

Le Liu, PhD student, (co-sup) Sofiya Aydinyan, Multifunctional precursors for additive manufacturing, Tallinn University of Technology, School of Engineering, Department of Mechanical and Industrial Engineering. From 2017. Defended 2021.

Tatevik Minasyan, PhD student, (co-sup) Sofiya Aydinyan, Synthesis of composite powders for additive manufacturing, Tallinn University of Technology School of Engineering, Department of Mechanical and Industrial Engineering. From 2018. Defended 2020.

Ani Vardanyan, MS, Investigation of the decomposition of lactides by thermal analysis method, Department of Inorganic and Analytical Chemistry, Yerevan State University. 2015-2017.

Marine Mejlumyan, MS, The influence of some impurities on the thermal decomposition behaviour of Chitosan, Department of Inorganic and Analytical Chemistry, Yerevan State University. 2015-2017.

Meri Varosyan, MS, Determination of Vitamin B2 in the yeast sample, Department of Inorganic and Analytical Chemistry, Yerevan State University. 2015-2017.

Alexandra Bezanyan, Armenian National Lycee after Anania Shirakatsy, IB DP student, The obtaining of titanium foam for catalytic application in the thermal decomposition reaction of polyethylene. 2014-2016.

Shantal al-Habib, Artificial hemoglobin synthesis, Armenian National Lycee after Anania Shirakatsy, IB DP student, 2015-2017.

Armine Karapetyan, Iron (III) Oxide Nanoparticles In Magnetic Hyperthermia, Armenian National Lycee after Anania Shirakatsy, IB DP student, 2016-2018.

Social activities, interviews

<https://mediamax.am/am/news/gitamard/22064/>

<https://www.panorama.am/am/news/2017/06/01/Երազանք/1785529>

public lectures on chemistry for high-school students, N 182, 162, 118, 184

<https://www.youtube.com/watch?v=hSUTSrbGKul>

<https://iupac.org/100/pt-of-chemist/#sofiya-aydinyan-og>