Sofiya V. Aydinyan

PERSONAL INFORMATION

Place/date of birth: Vanadzor, Armenia / 14 July 1984
Citizenship: Republic of Armenia
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Researcher ID in Publons AFO-0986-2022

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 MoO_3-Mg-C system" *Graduated with summa cum laude distinction*
01.09.2002-30.05.2006	BSc in Chemistry, Department of Chemistry, Yerevan State University. "$MoSi_2$-Si_3N_4 formation possibilities in the combustion mode via thermal dilution and chemical activation methods" *Graduated with summa cum laude distinction*

RESEARCH & WORKING EXPERIENCE

01.10.2020-	Head of research group of Advanced Materials Physical Chemistry and Engineering, Laboratory of Macrokinetics of Solid State Reactions, Institute of Chemical Physics, National Academy of Sciences of RA
05.03.2019-30.09.2020	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 Aramayis Erznkyan, Yerevan, Armenia
01.09.2007-31.08.2014.1	Teacher of Science and Chemistry, Armenian National Lycee after Anania Shirakatsy, Yerevan, Armenia

PROJECTS

2023	Committee of Science and Education, 23LCG-2F001, Bioinspired nacre-like architectured high entropy MAX phases for renewable energy, PI, 176 000 000 AMD
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 sparky 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
2020	Bio-replicating Engineering Structures for Tribo-applications (BEST), Personal research funding, team grant, PRG643, Tallinn, Estonia, Estonian Research Council, 514 250 Eur
2019	Refractory high entropy alloys for high-temperature application, Enterprize Incubator Foundation, EIF-PMI Faculty Grant, Philip Morris International, Investigator, 4 800 000 AMD
2019	Additive manufacturing of super-strong and lightweight ceramics for next generation high temperature compounds, Personal research funding, start-up grant, PSG220, Tallinn, Estonia, Estonian Research Council, PI, 254 458 Eur
2019	MOBERA18, Self-lubrication systems for high-temperature tribo-applications (1.09.2019−31.08.2021), SA ETAg, Mobilitas Pluss ERA-NET support, Researcher, 150 000 Eur per annum
2017	Combustion synthesized new materials for the additive manufacturing Mobilitas Plus postdoctoral research grant, MOBJD166, Tallinn, Estonia, Principal investigator, Estonian Research Council, 72 000 Eur
2016	Nanonet of ceramic fibers with targeted functionalities Personal research funding, start-up grant, PUT1063, Tallinn, Estonia, Researcher, Estonian Research Council, 206 400 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 equipments 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", 4th 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	6th 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' Scientific Conference

LANGUAGES

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

COMPUTER SKILLS

MSOffice, Photoshop, Chemix, HSC, TAPP, Calphad, ChemDraw, ThermoCalc, MSJade, SmartLab, 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. 13th Internatinal Ceramic Congress (CIMTEC-2014), 8-13 June, 2014, Montecatini Terme, Italy.

12. CHEMISTRY TODAY-2014, 4-th International Conference of Young Scientists,18-22 August 2014, Yerevan, Armenia.

13. IV International Conference "Current problems of Chemical Physics", Yerevan, 5-9 October, 2015.

14. 14th Intern. Conference of European Ceramic Society, 21-25 June, 2015, Toledo, Spain.

15. XIII International Symposium on Explosive Production of New Materials: Science, Technology, Business, and Innovations (EPNM-2016), 2016, June, Coimbra, Portugal.

16. 5th International Conference of Young Scientists (Chemistry today-2016), September 18-21, Tbilisi, Georgia.

17. Business trips to the Institute of Advanced Manufacturing Technology, Krakow, Poland, April 3-10, 2017, September 10-17, 2017.

18. Business trip to the Institute of Chemical Physics NAS RA, Yerevan, Armenia, May, 2017.

19. 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.

20. ECerS2017 15th Conference & Exhibition of the European Ceramic Society July 9–13, 2017, Budapest, Hungary.

21. XIV International Symposium on Self-Propagating High-Temperature Synthesis, 25-28 September 2017, Tbilisi, Georgia.

22. 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.

23. The International Conference Dedicated to the 50th Anniversary of Self-Propagating High Temperature Synthesis (SHS-50), November 20 – 21, 2017, Chernogolovka, Russia

24. GSFMT Scientific conference, 2018, Tallink Spa & Conference Hotel (Sadama 11a, Tallinn) March 7- 8, 2018, Tallinn, Estonia.

25. 2018 young Ceramists Additive Manufacturing Forum, 3-4 May, 2018, Padova, Italy.

26. XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018), Saint Petersburg, Russia, May 14-18, 2018.

27. CIMTEC 2018 - 14th International Conference on Modern Materials and Technologies, Perugia, Italy, 14th International Ceramics Congress (June 4-8), 2018.

28. 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).

29. ECerS2019, 16th Conference & Exhibition of the European Ceramic Society, June 16-20, 2019, Torino, Italy.

30. Modern Materials Manufacturing 2019, April 23-26, Tallinn, Estonia.

31. 50th IUPAC General Assembly, 47th IUPAC World Chemistry Congress, 5-12 July, 2019, Paris.

32. SHS2019, XV International Symposium on Self-Propagating High-Temperature Synthesis, 16-20 September, 2019, Moscow, Russia.

33. 2nd European Conference on Silicon and Silica Based Materials, Miskolc-Lillafüred, October 4-8, 2021, Hungary.

34. CIMTEC 2022, 15th International Ceramics Congress, Perugia, Italy June 20-29, 2022.

35. 2nd Global Experts Conference on Materials Science & Engineering (GECMSE-22) June 16 -18, 2022 Rome, Italy.

36. Modern Materials and Manufacturing (MMM-2023), April 25–27, 2023, Tallinn, Estonia

37. New Trends in Chemistry Armenia, September 24-28, 2023, Yerevan, Armenia.

38. Համահայկական գիտաժողով 2023, նոյեմբերի 17-22, Երևան, Հայաստան:

TRANINGS

1. HORIZON EUROPE PROPOSAL WRITING CAMP, Feb 13-17, 2023, Yerevan, Armenia.

2. Operation, adjustment and maintenance of MiniFlex 600 XRD diffractometer, Rigaku corporation, 27 May, 2022, Yerevan, Armenia.

3. I Pillar of Horizon Europe: ERC, MSCA, and Research Infrastructures, March 17, 2021.

4. III Pillar of Horizon Europe: Introduction of the EIC Accelerator, evaluation of the projects and requirements for evaluators March 24, 2021.

5. Workshop on Didactics of Higher Education, 03 Oct - 13 Dec, 156 h (6ECTS), 2018.

6. STARTERtech Advanced Spring 2018 program, Science and Innovation, Feb-May, 2018.

7. CA 15107 Training school “Nanocomposties - characterization and properties”, Bialystok, Poland, June 11-16, 2017.

8. ARMENIA TWINNING, Empowerment of the Tertiary Level Education of the Republic of Armenia for European Higher Education Area Integration “EHEA”, 27-30 June, 2016.

9. H2020 ASSOCIATION CONFERENCE AND TRAINING SEMINAR, 10-11 NOVEMBER 2016, YEREVAN, ARMENIA.

10. "Nobel days in Yerevan" scientific event, April 12-14, 2016.

11. HORIZON 2020, INFORMATION DAY, FOCUS: ASSOCIATED COUNTRIES, ENERGY & ENVIRONMENT, SMEs June 3, 2016 Yerevan Armenia.

12. ISTC international workshop (http://physecolab.ysu.am/), 25-28 September, 2015, Tsakhkadzor, Armenia.

13. Online workshop, certificate of attendance on IB Chemistry, Category III workshop, November 2015.

14. Online workshop, certificate of attendance on IB Chemistry, Category 1 workshop, March 2014.

RESEARCH SKILLS

Synthesis and characterization of nanomaterials, combustion synthesis (CS) of biomaterials, metals and alloys, refractory ceramics, ceramic composites, high entropy materials, bioinspired structures,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. Physicomechanical characterization of bulk specimens. **(**Currently I am working on the preparation of hybrid powders (mainly bioinspired and high entropy materials) by combustion synthesis (SHS and SCS) for the 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, Biomimicking of ceramic composites for lightweight applications, High entropy materials for magnetic and electrochemical applications, Self-lubricating coatings by SHS, 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, project management, reporting and article formulation. I have been also a lecturer of *General & Inorganic chemistry, Chrystallochemistry, Chemical technology, Materials Science & Engineering,* as well as mentoring the individual research projects, master theses and PhD theses of 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 atmospheres; Investigation of reaction mechanism by high-speed temperature scanner; Modelling of diffusion mechanism (carbidization, 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; Magnetism; CT scanning; 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 $MoSi_2$-Si_3N_4 composite powders”, Chemical Engineering Journal, 143(2008), pp. 331-336.

2. S.V. Aydinyan, Zh. Gumruyan, 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 MoO_3+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 MoO_3 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-coreduction 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 WO_3-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 WO_3+CuO mixture by combined Mg/C reducer. Chemical Journal of Armenia., 69 (4). pp. 399-406. ISSN 0515-9628.

17. S. V. Aydinyan, H. V. Kirakosyan, M. Zakaryan, 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 WO_3+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 $CuWO_4$/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 Si_3N_4 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 $MoSi_2$ based composite and selective laser sintering thereof”, Journal of the European Ceramic Society38(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, Technological combustion (in Russian), ed. Aldoshin&Alymov, 2018. 10.31857/S9785907036383000017. monograph

26. S.V. Aydinyan, Marieta Zakaryan, Hasmik Kirakosyan, Larisa Abovyan, Suren Kharatyan, Akaki Peikrishvili, , 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 TiB_2-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 Rreduction 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 $MoSi_2$-Si_3N_4 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 B_4C 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.

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PUBLICATIONS, Patents

1. Invention: Self-functionalizing fibrous networks of Si_3N_4 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: TiB_2 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 $MoSi_2$ 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.

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