

MARIETA ZAKARYAN



Personal Information:

Date of birth: 19 December 1993
Place of birth: Gyumri, Armenia
Citizenship: Republic of Armenia
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Language Skills

Armenian - native; Russian - C1; English - C1

Education

2016-2020 - Yerevan State University, Faculty of Chemistry, Department of Chemistry, Chair of Inorganic and Analytical Chemistry, PhD

2014-2016 - Yerevan State University, Faculty of Pharmacy and Chemistry, Department of Chemistry, Master's degree

2010-2014 - Yerevan State University, Faculty of Chemistry, Department of Chemistry, Bachelor's degree

Working Experience

2024 March - 2024 May - University of Notre Dame, Department of Physics and Astronomy, Nuclear Science Laboratory, Short-Term Research Visitor

2022 September to present - Yerevan State University, Faculty of Chemistry, "Material Science" Master Program, Lecturer

2021 September to present - A.B. Nalbandyan Institute of Chemical Physics National Academy of Sciences of RA, Laboratory of Macrokinetics of Solid State Reactions, Research Group of Advanced Material's Physical Chemistry and Engineering, Researcher

2021 June - 2021 August - University of Notre Dame, Department of Physics, Nuclear Science Laboratory, Postdoctoral Research Associate

2020 July - 2021 September - "Hydrometeorology and Monitoring Centre" SNCO Ministry of Environment of RA, Surface Water Quality Monitoring Service of Central Laboratory, Senior Specialist - Responsible for Quality Control

2019 July - 2019 August - University of Notre Dame, Department of Physics, Nuclear Science Laboratory, Short-Term Research Visitor

2017 September - 2018 December - American University of Armenia, College of Science & Engineering, ES program (ES132 course), Teacher Assistant

2017 April - 2020 July - “Environmental Monitoring and Information Centre” SNCO Ministry of Nature Protection of RA, Water Monitoring Department, Leading Specialist of Chromatographic Analysis

2017 March - 2021 September - A.B. Nalbandyan Institute of Chemical Physics National Academy of Sciences of RA, Laboratory of Kinetics of SHS Processes, Junior Researcher

2016 May - 2017 April - “Environmental Impact Monitoring Centre” SNCO Ministry of Nature Protection of RA, Water Monitoring Department, Leading Specialist of Chromatographic Analysis

2013 September - 2017 March - A.B. Nalbandyan Institute of Chemical Physics National Academy of Sciences of RA, Laboratory of Kinetics of SHS Processes, Laboratory Assistant

Research Grants

- HESC research grant - 23-2DP-1C010 - ““Smart” films, self-adaptive to the thermal background of the environment”, Investigator, 40 000 000 AMD, 2023-2025
- HESC research grant - 1-22/23LCG-2F001 - “Bioinspired nacre-like architected high entropy MAX phases for renewable energy”, Investigator, 176 000 000 AMD, 2023-2028
- US Office of Naval Research Grant - N62909-22-1-2068 - “Degradation of Ultra High Temperature Materials under Extreme Conditions” - Investigator, 110 303 USD, 2022-2025
- Faculty Research Funding Program implemented by Enterprise Incubator Foundation (EIF) with support of Philip Morris International (PMI) Science - “Preparation of Superconductive Ni₃CuN Antiperovskite Nitride as a Battery Material”, PI, 8 820 000 AMD, 2022
- SC research grant - 21T-1D227 - “Nanoscale Antiperovskite Magnetic Materials: Synthesis and Function”, Investigator, 13 800 000 AMD, 2021-2023
- Faculty Research Funding Program implemented by Enterprise Incubator Foundation (EIF) with support of Philip Morris International (PMI) Science - “Combustion synthesis and consolidation of W-Ni and W-Ag nanocomposite materials for hybrid vehicles as heat sinks”, PI, 5 800 000 AMD, 2020
- SC research grant - 20TTSG-2E003 - “Bamboo-like hierarchical microstructure inspiring silicon and boron carbides by combustion synthesis with reactions thermokinetic coupling approach”, Investigator, 55 000 000 AMD, 2020-2023
- SC research grant - 18BL-011 - “Structure formation and properties of SHS-intermetallic materials with nanoadditives using ultrasonic activation”, Investigator, 9 000 000 AMD, 2019-2021
- SC research grant - 18A-1d12 - “The preparation of W-Ni pseudoalloys in self-propagating combustion mode”, PI, 1 460 000 AMD, 2018
- SCS research grant - N15Ap_2e015 - “Complex chemical treatment technology of serpentine ultrasonic rocks”, Investigator, 10 000 000 AMD, 2015

Travel Grants

- Travel grant (Department of Physics and Astronomy of the University of Notre Dame, IN, USA) from the Higher Education and Science Committee - 2023
- Travel grant (Training Program for Young Scientists, Tallinn, Estonia, 01 October - 15 November, 2022) from the Young Scientists Support Program - 2022

- Travel grant (15th International Ceramics Congress CIMTEC, Perugia, Italy, 20-24 June, 2022) from the Calouste Gulbenkian Foundation - 2022
- Travel grant (Department of Physics of the University of Notre Dame, IN, USA) from the Foundation for Armenian Science and Technology for Collaborative Research - 2019
- Travel grant (XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business and Innovations (EPNM-2018), St. Petersburg, Russia, 14-18 May, 2018) from the Young Scientists Support Program - 2018
- Travel grant (14th International Ceramics Congress CIMTEC, Perugia, Italy, 4-8 June, 2018) from the Calouste Gulbenkian Foundation - 2018

Trainings

- Training on “Operation, adjustment and maintenance of the MiniFlex 600 X-Ray diffractometer manufactured by Rigaku Corporation (Japan) in accordance with the manufacturer’s program” - online, 2022
- Training Workshop on “Quality Management Systems for Climate Services” - Yerevan, Armenia, 2021
- Operational Training on “Agilent Cary 60 UV-VIS Spectrophotometer” - Yerevan, Armenia, 2019
- Training Workshop on “Air Quality and Health - Strengthening Capacities in Assessing Health Risks of Air Pollution” - Tbilisi, Georgia, 2019
- Training on “Requirements of the international standard EN ISO 17025: 2017” - Yerevan, Armenia, 2019
- Training on “For internal auditors according to the ISO 19011 guideline for auditing management systems and the requirements of the international standard EN ISO 17025:2017” - Kyiv, Ukraine, 2019
- Training on “ISO 6468:1996 - Water quality - Determination of certain organochlorine insecticides, polychlorinated biphenyls and chlorobenzenes - Gas chromatographic method after liquid-liquid extraction” - Yerevan, Armenia, 2017

Awards and Honors

- Diploma of the Union of Armenians of Russia and "Araratian Alliance" Thought Institute for winning the "Best Scientific Work" competition and outstanding achievements in the field of science - 2022
- I place award from Analysis Research & Planning for Armenia (ARPA) Institute Invention Competition - “Solution combustion synthesis as a method of preparing antiperovskite nitrides such as superconductive Ni₃CuN” - 2022
- III place award in the competition among young scientists for the best presentation at V International Conference “Current Problems of Chemical Physics” - 2019
- III place award in the competition of young chemists by Armenian Chemical Society - 2019
- I place award in oral competition at XV International Symposium on Self-propagating High Temperature Synthesis - 2019

- II place award from Analysis Research & Planning for Armenia (ARPA) Institute Invention Competition - "Preparation of fine grained silicon by energy-saving combustion mode" - 2015

Conferences & Symposiums

- Academic Forum of Young Scientists from Greater Eurasia Countries, 1-4 November, 2022, Moscow, Russia
- "New Emerging Trends in Chemistry" Conference (NewTrendsChem-2023), 24-28 September, 2023, Yerevan, Armenia
- 15th International Ceramics Congress of CIMTEC 2022, June 20-24, 2022, Perugia, Italy
- VI Scientific Conference of Armenian Chemical Society, 7-12 October, 2019, Yerevan, Armenia
- XV International Symposium on Self-Propagating High Temperature Synthesis, September 16-20, 2019, Moscow, Russia
- V International Conference "Current Problems of Chemical Physics", 25-29 September, 2018, Yerevan, Armenia
- 14th International Ceramics Congress of CIMTEC 2018, June 4-8, 2018, Perugia, Italy
- XIV International Symposium on Explosive Production of New Materials: Science, Technology, Business, and Innovations (EPNM-2018), May 14-18, 2018, St. Petersburg, Russia
- ArmCS-5: "Actual Problems of Fundamental and Applied Chemistry", 3-7 October, 2017, Yerevan, Armenia
- XIV International Symposium on Self-Propagating High Temperature Synthesis, September 25-28, 2017, Tbilisi, Georgia
- Chemistry Today-2016, 5-th International Conference of Young Scientists, September 18-21, 2016, Tbilisi, Georgia
- IV International Conference "Current problems of Chemical Physics", 5-9 October, 2015, Yerevan, Armenia
- "Application of Modern Scientific Methods and Technologies in Expertise Sphere", International Conference Dedicated to 10th Anniversary of foundation of National Bureau of Expertises NAS RA, 16-17 June, 2015, Yerevan-Tsaghkadzor, Armenia
- Chemistry Today-2014, 4-th International Conference of Young Scientists, August 18-22, 2014, Yerevan, Armenia

Publications: Articles

1. N.H. Amirkhanyan, Y.G. Grigoryan, **M.K. Zakaryan**, A.S. Kharatyan, H.T. Gyulasaryan, A.B. Harutyunyan, Preparation of the Ferromagnetic Intermetallic Compound Ni₃Fe by Solution Combustion Synthesis, Journal of Contemporary Physics (Armenian Academy of Sciences), 2023, vol. 58, No. 3, pp. 299-304, <https://doi.org/10.1134/S1068337223030040>
2. **Marieta K. Zakaryan**, Narine H. Amirkhanyan, Khachik T. Nazaretyan, Suren L. Kharatyan, Khachatur V. Manukyan, Combustion synthesis mechanism of the Ni(NO₃)₂+hexamethylenetetramine solutions to prepare nickel nanomaterials, Combustion and Flame, 2023, vol. 257, No 2, 113049, <https://doi.org/10.1016/j.combustflame.2023.113049>
3. N. Amirkhanyan, H. Kirakosyan, **M. Zakaryan**, A. Zurnachyan, M.A. Rodriguez, L. Abovyan, S. Aydinyan, Sintering of silicon carbide obtained by combustion synthesis, Ceramics

International, 2023, vol. 49, No 15, pp. 26129-26134, <https://doi.org/10.1016/j.ceramint.2023.04.233>

4. Marieta K. Zakaryan, Sina Malakpour Estalaki, Suren Kharatyan, Anna M. Matzner, Alexander S. Mukasyan, Tengfei Luo, Khachatur V. Manukyan, Spontaneous Crystallization for Tailoring Polymorphic Nanoscale Nickel with Superior Hardness, *The Journal of Physical Chemistry C*, 2022, vol. 126, No. 29, pp. 12301-12312, <https://doi.org/10.1021/acs.jpcc.2c03612>

5. Marieta K. Zakaryan, Alina R. Zurnachyan, Narine H. Amirkhanyan, Hasmik V. Kirakosyan, Maksim Antonov, Miguel A. Rodriguez, Sofiya V. Aydinyan, Novel Pathway for the Combustion Synthesis and Consolidation of Boron Carbide, *Materials*, 2022, vol. 15, No. 14, 5042; <https://doi.org/10.3390/ma15145042>

6. M. Zakaryan, Kh. Nazaretyan, S. Aydinyan, S. Kharatyan, Kinetic Highlights of the Reduction of Silver Tungstate by Mg+C Combined Reducer, *Metals*, 2022, vol. 12, No. 6, 1000, <https://doi.org/10.3390/met12061000>

7. Khachik Nazaretyan, Hasmik Kirakosyan, **Marieta Zakaryan**, Larisa Abovyan, Olga Volobujeva, Sofiya Aydinyan, The Interaction Pathway in the Mechano-Ultrasonically Assisted and Carbon-Nanotubes Augmented Nickel-Aluminum System, *Metals*, 2022, vol. 12, No. 3, 436, <https://doi.org/10.3390/met12030436>

8. Marieta Zakaryan, Khachik Nazaretyan, Sofiya Aydinyan, Suren Kharatyan, Joint Reduction of NiO/WO₃ Pair and NiWO₄ by Mg+C Combined Reducer at High Heating Rates, *Metals*, 2021, vol. 11, No. 9, 1351, <https://doi.org/10.3390/met11091351>

9. Marieta K. Zakaryan, Suren L. Kharatyan, Ani Aprahamian, Khachatur V. Manukyan, Combustion in the ZrF₄-Mg-Si and ZrF₄-Al-Si systems for preparation of zirconium silicides, *Combustion and Flame*, 2021, vol. 232, 111514, <https://doi.org/10.1016/j.combustflame.2021.111514>

10. Kh.T. Nazaretyan, H.V. Kirakosyan, S.V. Aydinyan, **M.K. Zakaryan**, L.S. Abovyan, M. Kulak, B. Khina, The influence of high-energy ball milling and nanoadditives on the kinetics of heterogeneous reaction in Ni-Al system, *IOP Conference Series: Materials Science and Engineering*, 2021, vol. 1140, 012052, doi:10.1088/1757-899X/1140/1/012052

11. M.K. Zakaryan, Kh.T. Nazaretyan, S.V. Aydinyan, S.L. Kharatyan, NiO reduction by Mg+C combined reducer at high heating rates, *Journal of Thermal Analysis and Calorimetry*, 2021, vol. 146, No. 4, pp. 1811-1817, <https://doi.org/10.1007/s10973-020-10148-5>

12. M.K. Zakaryan, A.S. Arzumanyan, S.L. Kharatyan, Magnesio-Carbothermic Reduction of Ag₂WO₄. DTA/TG Study, *Chemical Journal of Armenia*, 2020, vol. 73, No. 4, pp. 300-310

13. M.K. Zakaryan, Reduction of Silver Tungstate in Combustion Mode and Synthesis of W-Ag Pseudoalloy, *Chemical Journal of Armenia*, 2019, vol. 72, No. 4, pp. 401-408

14. M.K. Zakaryan, O.M. Niazyan, S.V. Aydinyan, S.L. Kharatyan, Reaction Pathway in the WO₃-NiO-Mg-C System. DTA/TG Study, *Chemical Journal of Armenia*, 2019, vol. 72, No. 3, pp. 223-232

15. Marieta Zakaryan, Sofiya Aydinyan, Suren Kharatyan, Combustion Synthesis and Consolidation of Ni-W Nanocomposite Material, *Ceramics in Modern Technologies*, 2019, vol. 1, pp. 67-74, <https://doi.org/10.29272/cmt.2018.0007>

16. 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*, 2018, vol. 71, No. 4, pp. 473-485

17. S.V. Aydinyan, H.V. Kirakosyan, **M.K. Zakaryan**, L.S. Abovyan, S.L. Kharatyan, A. Peikrishvili, G. Mamniashvili, B. Godibadze, E.Sh. Chagelishvili, D.R. Lesuer, M. Gutierrez, Fabrication of Cu-W Nanocomposites by Integration of Self-propagating High-temperature

Synthesis and Hot Explosive Consolidation Technologies, Eurasian Chemico-Technological Journal, 2018, vol. 20, No. 4, pp. 301-309, <https://doi.org/10.18321/ectj763>

18. M.K. Zakaryan, H.V. Kirakosyan, L.S. Abovyan, S.V. Aydinyan, S.L. Kharatyan, Magnesium-Carbothermal Reduction of CuWO_4/MeO Nanostructured Precursors & Synthesis of W/Cu Composite Materials, Chemical Journal of Armenia, 2017, vol. 70, No. 4, pp. 450-461

19. 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, vol. 9, No. 6, pp. 841-846, <https://doi.org/10.1007/s12633-017-9583-4>

20. M. Zakaryan, H. Kirakosyan, S. Aydinyan, S. Kharatyan, Combustion Synthesis of W-Cu Composite Powders from Oxide Precursors with Various Proportions of Metals, International Journal of Refractory Metals and Hard Materials, 2017, vol. 64, pp. 176-183, <https://doi.org/10.1016/j.ijrmhm.2016.12.003>

Publications: Abstracts & Conference Proceedings

1. Kirakosyan H., Amirkhanyan N., **Zakaryan M.**, Zurnachyan A., Aydinyan S., Bamboo-like hierarchical microstructure inspiring silicon and boron carbides by combustion synthesis with reactions thermokinetic coupling approach, Science Committee of the Ministry of Education, Science, Culture and Sport RA, Pan-Armenian Conference, September 17-22, 2023, Yerevan, Armenia, pp. 136

2. M.K. Zakaryan, N.H. Amirkhanyan, Solution Combustion Synthesis of the Ni_3CuN Antiperovskite Battery Material, “New Emerging Trends in Chemistry” Conference (NewTrendsChem-2023), September 24-28, 2023, Yerevan, Armenia, pp. 69

3. N.H. Amirkhanyan, **M.K. Zakaryan**, Synthesis of Intermetallic Ni_3Fe compound for Magnetic Applications by Solution Combustion Synthesis Method, “New Emerging Trends in Chemistry” Conference (NewTrendsChem-2023), September 24-28, 2023, Yerevan, Armenia, pp. 106

4. Petrosyan A.V., Galstyan A.S., **Zakaryan M.K.**, Kharatyan S.L., Ghochikyan T.V, Ligand-free Cu^0 -catalyzed S-arylation of 1,2,4-triazole-3-thioles, Advances in Synthesis and Complexing, Sixth International Scientific Conference, September 26-30, 2022, Moscow, Russia, pp. 225

5. A. Zurnachyan, **M. Zakaryan**, N. Amirkhanyan, H. Kirakosyan, S. Aydinyan, Preparation of boron and silicon carbide nanopowders in combustion mode, Science Committee of the Ministry of Education, Science, Culture and Sport RA, Pan-Armenian Conference, September 26-October 01, 2022, Vanadzor, Armenia, pp. 65

6. M. Zakaryan, N. Amirkhanyan, H. Kirakosyan, A. Zurnachyan, S. Aydinyan, Combustion Synthesis of Nanoscale Boron and Silicon Carbides, 15th International Ceramics Congress, CIMTEC 2022, June 20-24, 2022, Perugia, Italy, CA-11.2:L04

7. N.H. Amirkhanyan, **M.K. Zakaryan**, A.B. Harutyunyan Synthesis of Nanoscale Antiperovskite Complex Nitrides for Catalytic and Magnetic Applications, 15th International Ceramics Congress, CIMTEC 2022, June 20-24, 2022, Perugia, Italy, C:P16

8. Narine Amirkhanyan, Hasmik Kirakosyan, **Marieta Zakaryan**, Alina Zurnachyan, Sofiya Aydinyan, Self-Propagating High-Temperature Synthesis of Silicon Carbide Using Reactions Thermokinetic Coupling Approach, ec-siliconf2 the 2nd European Conference on Silicon and Silica Based Materials and ic-cmtp6 the 6th International Conference on Competitive Materials and Technology Processes, October 4-8, 2021, Miskolc-Lillafred, Hungary, pp. 115

9. **M.K. Zakaryan**, A.A. Baldryan, S.L. Kharatyan, Preparation of W-Ag Pseudoalloys by Combining SHS with SCS, VI Scientific Conference of Armenian Chemical Society, October 7-12, 2019, Yerevan, Armenia, pp. 81
10. **M.K. Zakaryan**, Kh.T. Nazaretyan, S.V. Aydinyan, S.L. Kharatyan, Joint Reduction of NiO+WO₃ Oxides by Combined Mg/C Reducer. Synergetic Effect, XV International Symposium on Self-Propagating High Temperature Synthesis, September 16-20, 2019, Moscow, Russia, pp. 546-548, DOI: 10.24411/9999-0014A-2019-10198
11. **M.K. Zakaryan**, A.A. Baldryan, S.L. Kharatyan, W-Ag Nanocomposite Preparation by Combining SCS and SHS, XV International Symposium on Self-Propagating High Temperature Synthesis, September 16-20, 2019, Moscow, Russia, pp. 543-545, DOI: 10.24411/9999-0014A-2019-10197
12. **M.K. Zakaryan**, A.S. Grigoryan, A.A. Hovhannisyan, S.L. Kharatyan, Combustion Synthesis of Ni-W Composite Powders by Using Nickel Tungstate as a Precursor, V International Conference "Current Problems of Chemical Physics", September 25-29, 2018, Yerevan, Armenia, pp. 158-159
13. **M.K. Zakaryan**, Kh.T. Nazaretyan, O.M. Niazyan, S.L. Kharatyan, Kinetics of Nickel Oxide Reduction by Mg/C Combined Reducer at Non-Isothermal Conditions, V International Conference "Current Problems of Chemical Physics", September 25-29, 2018, Yerevan, Armenia, pp. 78-79
14. **M.K. Zakaryan**, S.V. Aydinyan, S.L. Kharatyan, NiO and WO₃ Coreduction by Combined Reducers Mg/C and Preparation of W-Ni Alloy, 14th International Ceramics Congress, CIMTEC 2018, June 4-8, 2018, Perugia, Italy, CB-10.2:L03
15. **M.K. Zakaryan**, S.V. Aydinyan, S.L. 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, 2018, St. Petersburg, Russia, pp. 298-300, <https://doi.org/10.30826/EPNM18-103>
16. **M.K. Zakaryan**, L.S. Abovyan, H.V. Kirakosyan, S.V. Aydinyan, S.L. Kharatyan, Combustion Synthesis of W/Cu Nanopowders from CuWO₄/WO₃ & CuWO₄/CuO Precursors Derived by SCS Method, ArmCS-5: "Actual Problems of Fundamental and Applied Chemistry", October 3-7, 2017, Yerevan, Armenia, pp. 110
17. **M.K. Zakaryan**, S.L. Kharatyan, Combustion Synthesis of Ni-W Composite Nanopowders from Oxide Precursors, XIV International Symposium on Self-Propagating High Temperature Synthesis, September 25-28, 2017, Tbilisi, Georgia, pp. 318-319
18. **M.K. Zakaryan**, H.V. Kirakosyan, S.V. Aydinyan, S.L. Kharatyan, B.A. Godibadze, G.I. Mamniashvili, A.B. Peikrishvili, Combustion Synthesis of 2W-Cu & W-3Cu Composite Nanopowders from Oxide Precursors, Chemistry Today-2016, 5th International Conference of Young Scientists, September 18-21, 2016, Tbilisi, Georgia, pp. 20-23
19. **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, June 21-25, 2015, Toledo, Spain, pp. 2260
20. **M.K. Zakaryan**, S.V. Aydinyan, S.L. Kharatyan, Preparation of Fine-grained Silicon by Magnesiothermic Reduction of Silica in the Presence of Reaction Products as Diluents, IV International Conference "Current problems of Chemical Physics", October 5-9, 2015, Yerevan, pp. 195-196
21. **Zakaryan M.K.**, Aydinyan S.V., Magnesiothermic Reduction of Silica's of Various Origin and Preparation of Fine-grained Silicon, "Application of Modern Scientific Methods and

Technologies in Expertise Sphere”, International Conference Dedicated to 10th Anniversary of foundation of National Bureau of Expertises NAS RA, June 16-17, 2015, Yerevan-Tsaghkadzor, pp. 421-429

22. M. Zakaryan, S. Aydinyan, N. Zulumyan, S. Kharatyan, Magnesiothermic Reduction of Silica's of Various Origin and Preparation of Silicon, Chemistry Today-2014, 4th International Conference of Young Scientists, August 18-22, 2014, Yerevan, Armenia, pp. 146-149

Social activities, interviews

- <https://www.youtube.com/watch?v=0IN83B3FOo0>
- <https://www.youtube.com/watch?v=B7ItDUfMQI4>
- <https://www.youtube.com/watch?v=D06xFi-4x8Q&t=9s>
- <https://www.youtube.com/watch?v=02Qx5SO8FbY&t=2s>
- <https://www.youtube.com/watch?v=owQd37u4FsA&t=1s>
- <https://www.youtube.com/watch?v=HkRLH9au3Tk>
- <https://www.youtube.com/watch?v=4DqBemFKlxE&t=25s>
- <https://www.youtube.com/watch?v=Ci8Wqs7eaL0&list=PLCtCXfSXGrB3Tk1xRbVhPT-rLAq0t-okb&index=3>
- https://www.sci.am/eritview.php?id=1&langid=1&fbclid=IwAR3H4ayt-B0A3tIPIH2fJL0tIgQWdhq1vxxOCQD4u_W4IhepgwwX63SdxAc
- https://www.sci.am/eritview.php?id=51&arch=0&langid=1&fbclid=IwAR0iG4_zCN8gj03Xy0EEenfVkdMKw0bT3X9VKJxK8O1sotoUyLexQSGHeT0#top
- <https://infocom.am/hy/article/87084?fbclid=IwAR2k6vh1uQ9jTo8uCK0HwJgiEYKvZWoeYztR8rQ-327QY00dy1XF0qt99C8>
- https://www.youtube.com/watch?v=uUnaOjY_3RA&ab_channel=%D4%BC%D5%B8%D6%82%D6%80%D5%A5%D6%80