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SELECTED RESEARCH PUBLICATIONS

BOOKS

- **Self-Propagating High-Temperature Synthesis, Text book with laboratory work**, by Z.A. Mansurov, A.S. Mukasyan, A.S. Rogachev, – Almaty: Kazakh University, 2018. – 179 p. ISBN
- **Concise Encyclopedia of Self-Propagating High-Temperature Synthesis**, 1-st Edition, Editors: I. Borovinskaya, A. Gromov, E. Levashov, A.S. Mukasyan, A. Rogachev, Elsevier, Amsterdam, Netherlands, 2017, 436 p.
- **Combustion for Material Synthesis**, Rogachev AS., Mukasyan AS., CRC Press, Taylor and Francis, Boca Raton, London, New York, 2015, 398 p.
- **Gorenje dlya Sinteza Materialov** (in Russian): Introduction to the Structural Macrokinetics, Rogachev AS., Mukasyan AS., Fizmatlit, Moscow, 2013, 400p (in Russian).
- **Tverdoplamennoe Gorenje**, (in Russian), Merzhanov AG., Mukasyan AS., Torus Press, Nauka, Moscow 2007, 280p (in Russian).
- **Combustion of Heterogeneous Systems: Fundamentals and Applications for Material Synthesis**, Editors: A.S. Mukasyan, K. Martirosyan, Research Signpost Publisher, Kerala, 2007, 234 p.

CHAPTERS IN BOOKS

1. “Combustion Synthesis of *Advanced Materials*”, in *ASM Handbook: Powder Metal Technologies and Applications*, 1998, 7, pp.523-540 with A. Varma.
2. “The Role of Molecular Gas-Phase and Conduction Heat Transfer in Propagation of Combustion Wave”, in a book: *Progress in Self-Propagating High-Temperature Synthesis* ed. C. Ge and A.S. Rogachev, Trans Tech Publications Ltd., Zuerich, 2001, pp. 45-48 with A. Gordopolov and S.G. Vadchenko.
3. "Combustion Synthesis of *Intermetallic Compounds*," in a book: *Self-Propagating High-Temperature Synthesis of Materials*, (A. Borisov, L. DeLuca and A. Merzhanov, Eds.), Taylor & Francis, New York, 2002, pp. 1-34 with A. Varma.
4. “Non Classical Problems in SHS”, in a book: *Concepts of Self-Propagating High-Temperature Synthesis*, (in Russ.) ed. by A. Merzhanov, Territoria, Moscow. 2003 pp. 48-54.
5. “Combustion Synthesis of *Silicon Carbide*” in a book: *Properties and Applications of Silicon Carbide*, ed. by: Prof. R. Gerhardt, INTECH, Vienna, Austria , 2011, ISBN 978-953-307-356-9, pp.389-409
6. “Combustion Synthesis of *Nanomaterials*” in *Dekker Encyclopedia of Nanoscience and Nanotechnology*, Editor(s): S. E. Lyshevski, Third Edition, Seven Volume Set, Published: CRC Press, New York, 2014, pp.983-1001.

7. "Combustion Synthesis of **Boron Nitride**: Fundamentals and Applications", in a book: *Nitride Ceramics: Combustion Synthesis and Applications*, Editors: AA. Gromov, L. Chukhlomina, ISBN: 978-3-527-33755-2, Wiley, VCH, 2014, pp.49-74.
8. "Combustion Behavior of **Nanocomposite Energetic Materials**", in a book: *Energetic Nanomaterials: Characterization, and Application*, Ed. by V. Zarko, 1st Edition, ISBN: 9780128027103, Elsevier, 2016, pp.163-193.
9. "**Kinetics** of Heterogeneous Self-Propagating High-Temperature Reactions", in a book "Advanced Chemical Kinetics", ed. M. A. Farrukh, INTECH, Vienna, Austria , ISBN 978-953-51-3816-7, 2018, pp.167-196

INVITED REVIEWS

1. "Combustion Synthesis of Advanced Materials: Principles and Applications", *Advances in Chemical Engineering*, 1998, 24, pgs.79-226 with Arvind Varma, Alexander S. Rogachev and Steven Hwang.
2. "Influence of Gravity on Combustion Synthesis of Advanced Materials", *AIAA Journal*, 43(2), 2005, pp. 225-246, with Arvind Varma and Cheryl Lau.
3. "Combustion Joining of Refractory Materials", in a book: *Combustion of Heterogeneous Systems: Fundamentals and Applications for Material Synthesis*, Research Signpost Publisher, 2007, pp.219-245 with Jeremiah D. E. White.
4. "Discrete Reaction Waves: Gasless Combustion of Solid Powder Mixtures", *J. Progress in Energy and Combustion Science* 2008, 34(3), pp. 377-416 with AS. Rogachev.
5. "Combustion synthesis and Nanomaterials", *Current Opinion in Solid State and Materials Science* 2008, 12, pp. 44–50 with Singanahally T. Aruna
6. "Combustion of Heterogeneous Nano-Structured Systems", *Combustion, Explosion and Shock Waves*, 2010, 4 (3), pp. 243-266 with AS. Rogachev
7. "Solution Combustion as a Promising Method for the Synthesis of Nanomaterials" *Advances in Science and Technology*, 2010, 63, pp 187-196.
8. "New Results on Structural Macrokinetics Obtained on Multilayer Nanofolds", *Advances in Science and Technology*, 2014, 88, pp.85-93 with A.S. Rogachev and S.G. Vadchenko.
9. "Combustion/micropyretic synthesis of atomically thin two-dimensional materials for energy applications", *Current Opinion in Chemical Engineering*, 2015, 7, pp. 16–22 with K. Manukyan.
10. "Combustion Synthesis in Nanostructured Reactive Systems", *Advanced Powder Technology*, 2015, 26(3) pp. 954–976 with ST. Aruna and AS. Rogachev.
11. "Solution Combustion Synthesis of Nanoscale Materials", *Chemical Review*, 116, 2016, pp.14493-14586 with A. Varma, AS. Rogachev and K. Manukyan
12. "Self-propagating high-temperature synthesis of advanced materials and coatings", *International Materials Reviews* 62(4), 2017, pp 203-239, with EA. Levashov, AS. Rogachev and DV. Shtansky

13. "Combustion synthesis of zero-, one-, two- and three-dimensional nanostructures: Current trends and future perspectives", *Progress in Energy and Combustion Science*, 63, 2017, 79-118 with H.H Nersisyan, J.H Lee, J.R Ding, K.S Kim, K.V. Manukyan.
14. "Kinetics of SHS Reactions: a Review" *International Journal of Self-Propagating High-Temperature Synthesis*, 26 (3), 2017, 145–165 with C.E. Shuck.
15. A. S. Mukasyan, C. E. Shuck, J. M. Pauls, K. V. Manukyan, D.O. Moskovskikh, A.S. Rogachev, "The Solid Flame Phenomenon: A Novel Perspective", *Advanced Engineering Materials*, doi :10.1002/adem.201701065, 20 (8), Article Number 1701065 August (2018).
16. A.S. Rogachev, S.G Vadchenko, A.A Nepapushev, A.S. Rogachev, Y.B. Scheck, A.S. Mukasyan, Gasless Reactive Compositions for Materials Joining: An Overview, *Advanced Engineering Materials*, doi.org/10.1002/adem.201701044, 20 (8), Article Number 1701044 August (2018).
17. F. Baras; V. Turlo; O. Politano; S. G. Vadchenko; A. S. Rogachev; A. S. Mukasyan, SHS in Ni/Al nanofolds: a review of experiments and molecular dynamics simulations", doi.org/10.1002/adem.201800091, *Advanced Engineering Materials*, 20 (8), Article Number: 1800091 August (2018).

SELECTED JOURNAL PUBLICATIONS

2018

1. A. S. Mukasyan, C. E. Shuck, J. M. Pauls, K. V. Manukyan, D.O. Moskovskikh, A.S. Rogachev, "The Solid Flame Phenomenon: A Novel Perspective", *Advanced Engineering Materials*, doi :10.1002/adem.201701065, 20 (8), Article Number 1701065 August (2018).
2. A.S. Rogachev, S.G Vadchenko, A.A Nepapushev, A.S. Rogachev, Y.B. Scheck, A.S. Mukasyan, Gasless Reactive Compositions for Materials Joining: An Overview, *Advanced Engineering Materials*, doi.org/10.1002/adem.201701044, 20 (8), Article Number 1701044 August (2018).
3. F. Baras; V. Turlo; O. Politano; S. G. Vadchenko; A. S. Rogachev; A. S. Mukasyan, SHS in Ni/Al nanofolds: a review of experiments and molecular dynamics simulations" , doi.org/10.1002/adem.201800091, *Advanced Engineering Materials*, 20 (8), Article Number: 1800091 August (2018).
4. K.V. Manukyan, A.V. Yeghishyan, D.O. Moskovskikh, S.Rouvimov, E. E. Wolf and A.S. Mukasyan, "Structural Transformations of Highly Porous Nickel Catalysts during Ethanol Conversion Toward Hydrogen" *International Journal of Hydrogen Energy* 43 13225-13236, (2018)
5. V. Danghyan, S. Calderon Novoa, A. S. Mukasyan, E.E. Wolf , Pressure dilution, a new method to prepare a stable Ni/fumed silica catalyst for the dry reforming of methane *Applied Catalysis B: Environmental*, 234, 178-186 (2018).
6. MT. Beason, JM. Pauls, IE. Gunduz, S. Rouvimov, KV. Manukyan, K. Matous, SF. Son, AS Mukasyan, Shock-induced reaction synthesis of cubic boron nitride, *APL*, 112(17) 171903 (2018)
7. KV Kuskov, AS Rogachev, SG Vadchenko, NF Shkodich, S Rouvimov, AS Shchukin, EV Illarionova, VA Kudryashov, AS Mukasyan, Resistance of microcrystalline and nanocrystalline Cu/Cr pseudo-alloys to vacuum discharge, *J. Alloys and Compounds*,

750, 811-818 (2018)

8. AS Rogachev, SG Vadchenko, AS. Aronin, AS. Shchukin, D Yu Kovalev, AA Nepapushev, S Ruvimov, AS. Mukasyan, Self-sustained exothermal waves in amorphous and nanocrystalline films: A comparative study, *J. Alloys and Compounds*, 749, 44-51 (2018).
9. CE. Chuck, AS. Mukasyan, Kinetics of Heterogeneous Self-Propagating High-Temperature Reactions, in a book “Advanced Chemical Kinetics”, ed. M. A. Farrukh, INTECH, Vienna, Austria , ISBN 978-953-51-3816-7, 167-196 (2018).
10. J. M. Pauls, C. E. Shuck, A.S. Rogachev. A.S. Mukasyan, Micro-heterogeneous Regimes for Gasless Combustion of Composite Materials, *Combustion Science and Technology*, 190(5), 893-908 (2018).
11. NF Shkodich, SG Vadchenko, AA Nepapushev, D Yu Kovalev, ID Kovalev, S Ruvimov, AS Rogachev, AS Mukasyan, Crystallization of amorphous Cu 50 Ti 50 alloy prepared by high-energy ball milling, *J. Alloy & Comp.*, 741, 575-579 (2018).
12. K. V. Manukyan, A.V. Yeghishyan, C.E. Shuck, D. O. Moskovskikh, S.Rouvimov, E. E. Wolf and A.S. Mukasyan, Mesoporous Metal - Silica Materials: Synthesis, Catalytic and Thermal Properties, *Microporous & Mesoporous Materials*, 257. 175-184 (2018)
13. AA Nepapushev, AS Rogachev, AS Mukasyan The influence of high-energy ball milling on the heterogeneous reaction kinetics in the Ti-Si system, *Intermetallics* 93, 366-370 (2018).

2017

14. A.S. Rogachev, S.G. Vadchenko, A.S. Aronin, S. Rouvimov, A.A. Nepapushev, I.D. Kovalev, F. Baras, O. Politano, S.A. Rogachev A.S. Mukasyan, Self-propagating waves of crystallization in metallic glasses, *Applied Physics Letters*, 111, 093105 (2017).
15. K. B. Podbolotov, A. A. Khort, A. B. Tarasov, G. V. Trusov, S. I. Roslyakov and A.S. Mukasyan, Solution Combustion Synthesis of Copper Nanopowders: The Fuel Effect, *Comb. Sci. Tech* 189 (11), 1878-1890 (2017).
16. A.S. Mukasyan, A.S. Rogachev, “Combustion Synthesis: Mechanically Induced Nanostructured Materials“, *J. Mat. Sci.* 52(20), 11826-11833, (2017).
17. A.S. Mukasyan, C.E. Chuck, Kinetics of SHS Reactions: a Review, *International Journal of Self-Propagating High-Temperature Synthesis*, 26 (3), 145–165 (2017).
18. H.H Nersisyan, J.H Lee, J.R Ding, K.S Kim, K. Manukyan, A.S. Mukasyan, Combustion synthesis of zero-, one-, two- and three-dimensional nanostructures: Current trends and future perspectives, *Progress in Energy and Combustion Science*, 63, 79-118 (2017).
19. E.A. Levashov, A.S. Mukasyan, A.S. Rogachev and D.V. Shtansky, Self-propagating high-temperature synthesis of advanced materials and coatings, *International Materials Reviews* 62(4), 203-239 (2017).
20. A. Salvadori, S. Lee, A. Gillman, K. Matouša, C. Shuck, A. Mukasyan, M.T. Beason, I.E. Gunduz, S.F. Son, Numerical and experimental analysis of the Young’s modulus of cold compacted powder materials, *Mechanics of Materials*, 112, 56-70 (2017).
21. D.O. Moskovskikh, K.A. Paramonov, A.A. Nepapushev, N.F. Shkodich, A.S. Mukasyan, Bulk Boron Carbide Nanostructured Ceramics by Reactive Spark Plasma Sintering, *Ceramic International*, 43 (11) 8190-8194 (2017).

22. C. Chuck, A.S. Mukasyan, Reactive Ni/Al Nanocomposites: Structural Characteristics and Activation Energy, *J. Phys. Chem. A*, 121 (6), 1175–1181 (2017).
23. K. V. Kuskov, A. S. Sedegov, A. P. Novitskii, A. A. Nepapushev, D. O. Moskovskikh, N. F. Shkodich, A. S. Rogachev, and A. S. Mukas'yan, Influence of Chromium in Nanocrystalline Copper–Chromium Pseudoalloy on its Structure and Properties, *Nanotechnologies in Russia*, 12(1–2), 40–48 (2017).
24. K. Manukyan, S. Rouvimov, A.S. Mukasyan, Combustion Synthesis of Ni-SiO₂ Nanoscale Materials, *Microsc. Microanal.* 23 (Suppl 1), 1866-1887 (2017).
25. N.F. Shkodich, A.S. Rogachev, A.S. Mukasyan, et al., Fabrication of Nano crystalline Copper/Molybdenum Pseudo Alloy by Combination of Mechanical Activation and Spark Plasma Sintering Methods, *Chemical Physics of Nanomaterials*, 36 (1), 72-79 (2017).

2016

26. A. Varma, A.S. Mukasyan, AS. Rogachev and K. Manukyan “Solution Combustion Synthesis of Nanoscale Materials”, *Chemical Review*, 116, 14493-14586 (2016).
27. A.S. Mukasyan, Combustion Behavior of Nanocomposite Energetic Materials, in a book: *Energetic Nanomaterials: Characterization, and Application*, Ed. by V. Zarko, 1st Edition, ISBN: 9780128027103, Elsevier, 163-193 (2016).
28. K.V. Manukyan, A.V. Yeghishyan, D.O. Moskovskikh, J. Kapadlo, A. Mintairov, AS. Mukasyan, Mechano-chemical synthesis of methylammonium lead iodide perovskite *J. Materials Science*, 51 (19), 9123-9130 (2016).
29. CE. Shuck, JM. Pauls and A S. Mukasyan, Ni/Al Energetic Nanocomposites and the Solid Flame Phenomenon, *J. Phys. Chem. C.*, 120(47), 27066-27078 (2016).
30. M. Abedi, DO Moskovskikh, AS Rogachev, AS Mukasyan, Spark Plasma Sintering of Titanium Spherical Particles, *Metall. Mater. Trans. B*, 47(5), 2725-2731 (2016).
31. AS Rogachev, KV Kuskov, NF Shkodich, DO Moskovskikh, AO Orlov, AA Usenko, AV Karpov, ID Kovalev, AS Mukasyan, Influence of high-energy ball milling on electrical resistance of Cu and Cu/Cr nanocomposite materials produced by Spark Plasma Sintering, *J. of Alloys and Compounds*, 688, Part A, 468-474 (2016).
32. AS Rogachev, SG. Vadchenko, AA. Nepapushev, AS Mukasyan, Reactive nanofoils for joining refractory and dissimilar materials, *International J. of SHS*, 25(4) 234-237 (2016).
33. KP Sidnov, DS Belov, AV Ponomareva, IA Abrikosov, AM Zharmukhambetova, NV Skripnyak, SA Barannikova, AS Rogachev, S Rouvimov, AS Mukasyan, Effect of alloying on elastic properties of ternary Ni-Al-Ti system: Experimental validation, *J. Alloys and Compounds*, 688, Part A, 534-541 (2016).
34. R. Mnatsakanyan, A. R. Zhurnachyan, V.A. Matyshak, K.V. Manukyan, A.S. Mukasyan, Microwave-assisted synthesis of carbon-supported carbides catalysts for hydrous hydrazine decomposition, *J. Phys. Chem. in Solids*, 96, 115-120 (2016).
35. D.O. Moskovskikh, Y. Song, S Rouvimov, A.S. Rogachev, A.S. Mukasyan, Silicon carbide ceramics: Mechanical activation and spark plasma sintering, *Ceramics International*, 42, 12686-12693 (2016).
36. C. Shuck, M. Frazee, A. Gillman, M. Beason, I. Gunduz, K. Matous, R. Winarski and A. S. Mukasyan, X-Ray Nanotomography and Focused Ion Beam Sectioning for

Quantitative Three-dimensional Analysis of Nanocomposites, *J. Synchrotron Radiation*, 23(4), 990-996 (2016).

37. A.S. Rogachev, K.V. Kuskov, D.O. Moskovskik, A.A. Usenko, A.O. Orlov, N.F. Shkodich, M.I. Alimov, A.S. Mukasyan, Influence of Mechanical Activation on the thermos- and electro- conductivities of the sintered Cu, Cr and Cu/Cr Composite, *Doklady Physics* (Proceedings of the Russian Academy of Sciences), 468 (5), 508-511 (2016).
38. G. Trusov, A. Tarasov, E. Goodilin, A. Rogachev, S. Roslyakov, S. Rouvimov, K. Podbolotov, A. Mukasyan, "Spray Solution Combustion Synthesis of Metallic Hollow Microspheres" *J. Phys. Chem. C*, 120 (13), pp 7165–7171 (2016).
39. KV. Manukyan, C. Shuck, M. Cherukara, S. Rouvimov, D. Kovalev; A. Strachan; AS. Mukasyan, Exothermic Self-sustained Waves with Amorphous Nickel, *J. Phys. Chem. C*, 120 (10), 5827–5838 (2016).
40. A.S. Rogachev, S.G.Vadchenko, F.Baras, O.Politano, S.Rouvimov, N.V.Sachkova, M.D. Grapes, T.P. Weihs, A.S. Mukasyan, Combustion in reactive multilayer Ni/Al nanofolds: Experiments and Molecular Dynamic Simulation, *Comb. & Flame*, 166, 158-169 (2016).
41. G. Karbasian, A.O. Orlov, A.S. Mukasyan, and G.L. Snider, Single-electron Transistors featuring Silicon Nitride Tunnel Barriers prepared by Atomic Layer Deposition, *Proceedings of 2016 International Conference on Ultimate Integration on Silicon* (ULIS), 32-35 (2016).
42. CE Shuck, KV Manukyan, S Rouvimov, AS Rogachev, AS Mukasyan, Solid-flame: Experimental Validation, *Comb. & Flame*, 163, 487-493 (2016).

2015

43. A.S. Mukasyan, S.T. Aruna and AS. Rogachev, "Combustion Synthesis in Nanostructured Reactive Systems", *Advanced Powder Technology*, 26(3), 954–976 (2015).
44. A.S. Mukasyan, K. Manukyan. "Combustion/micropyretic synthesis of atomically thin two-dimensional materials for energy applications", *Current Opinion in Chemical Engineering*, 7, 16–22 (2015).
45. KV Manukyan, AJ Cross, AV Yeghishyan, S Rouvimov, JJ Miller, AS Mukasyan, EE Wolf, Highly stable Ni–Al₂O₃ catalyst prepared from a Ni–Al layered double hydroxide for ethanol decomposition toward hydrogen, *Applied Catalysis A: General*, 508, 37-44 (2015).
46. J. Hidalgo, M. Colet-Lagrille, A. Mukasyan, V. M. Fuenzalida, T. Vargas, Synthesis of Nanostructured Zirconia by Anodization at Low Potentials, *Crystal Research & Technology*, 50(11), 879–883 (2015).
47. K. Manukyan, A. Avetisyan, C. Shuck, H. Chatilyan, S. Rouvimov, S. Kharatyan, A.S. Mukasyan, Nickel Oxide Reduction by Hydrogen: Kinetics and Structural Transformations, *J. Phys. Chem. C*, 119 (28), 16131–16138 (2015).
48. KV. Manukyan, W.Tan, R. J. deBoer, E.J. Stech, A.Aprahamian, M.Wiescher, S. Rouvimov, K.R. Overdeep, C.E. Shuck, T.P. Weihs, and A.S. Mukasyan, Irradiation-Enhanced Reactivity of Multilayer Al/Ni Nanomaterials, *ACS Appl. Mater. Interfaces*, 7 (21), 11272–11279 (2015).
49. K Manukyan, S Rouvimov, CE Shuck, AS Mukasyan, TEM Analysis of Structural Transformation in Al/Ni Nanomaterials under High Energy Ion Irradiation, *Microscopy and Microanalysis* 21 (S3), 583-584 (2015)

50. A. Kumar, R. Bhosale, L.J.P. van den Broeke, AS. Mukasyam, E.E. Wolf Combustion Synthesis of Copper-Nickel Catalysts for Hydrogen Production from Ethanol, *Chem. Eng. J.*, 278, 46–54 (2015).
51. KV. Manukyan, C. Shuck, AS. Rogachev, AS. Mukasyan, Preparation and Reactivity of Gasless Nanostructured Energetic Materials, *Journal of Visualized Experiments, J. Vis. Exp.* (98), e52624, doi:10.3791/52624 (2015).
52. A.A. Nepapushev, K. Kirakosyan, D.O. Moskovskikh, S.L. Kharatyan, A.S. Rogachev, A.S. Mukasyan, Influence of high-energy ball mill on kinetics of heterogeneous reaction in Ni-Al system: Electro-thermography Study, *Int. J. SHS*, 24(1), 21-28, (2015).
53. A.S. Rogachev, D.O. Moskovskikh, A.A. Nepapushev, T.A. Sviridova, S.G. Vadchenko, S.A. Rogachev, A.S. Mukasyan, Experimental investigation of milling regimes in planetary ball mill and their influence on structure and reactivity of gasless powder exothermic mixtures, *Powder Technology*, 274, 44-52, (2015).
54. AS. Rogachev, AS. Mukasyan, Experimental verification of the discrete combustion models for the microheterogeneous systems which formed condensed combustion products, *Combustion Explosion and Shock Wave*, 51(1), 53–62 (2015).
55. DO. Moskovskikh, Ya-C. Lin, PJ. McGinn, AS. Rogachev, AS. Mukasyan, Spark plasma sintering of SiC powders produced by different combustion synthesis routes, *J. Eur. Ceram. Soc.*, 35(2), 477–486 (2015).
56. MT Beason, IE Gunduz, AS Mukasyan, SF Son Shockwave Processing of Composite Boron and Titanium Nitride Powders APS Shock Compression of Condensed Matter Meeting Abstracts 1, 1004P (2015).

2014

57. K. Martirosyan and A.S. Mukasyan, Combustion Synthesis of Nanomaterials, in *Dekker Encyclopedia of Nanoscience and Nanotechnology*, Editor(s): S. E. Lyshevski, Third Edition, Seven Volume Set, CRC Press, New York, pp.983-1001 (2014).
58. A.S. Mukasyan, Combustion Synthesis of Boron Nitride: Fundamentals and Applications”, in a book: *Nitride Ceramics: Combustion Synthesis and Applications*, Editors: AA. Gromov, L. Chukhlomina, ISBN: 978-3-527-33755-2, Wiley, VCH, 49-74 (2014).
59. A. Cross, S. Roslyakov, KV. Manukyan, S. Rouvimov, AS. Rogachev, D. Kovalev, EE. Wolf, AS. Mukasyan, In-Situ Preparation of Highly Stable Ni-Based Supported Catalysts by Solution Combustion Synthesis, *J. Phys. Chem. C*, 118 (45), 26191–26198 (2014).
60. BC. Terry, Ya-C. Lin, KV. Manukyan, AS. Mukasyan, SF. Son, and L J. Groven, The Effect of Silicon Powder Characteristics on the Combustion of Silicon/Teflon/Viton Nano-energetics, *J. Propellants, Explosives, Pyrotechnics*, 39, 337 – 347 (2014).
61. KV. Manukyan, Y.-Siou Chen, S. Rouvimov, Peng Li, Xiang Li, Sining Dong, Xinyu Liu, JK. Furdyna, A. Orlov, GH. Bernstein, W. Porod, S. Roslyakov, AS. Mukasyan, Ultrasmall α -Fe₂O₃ Superparamagnetic Nanoparticles with High Magnetization Prepared by Template-Assisted Combustion Process, dx.doi.org/10.1021/jp504733r, *J. Phys. Chem. C*, 118, 16264–16271 (2014).
62. Ya-C., AS. Shteinberg, PJ. McGinn, AS. Mukasyan, Kinetics study in TiFe₂O₃ system by electro-thermal explosion method, *International Journal of Thermal Sciences* 84, 369-378 (2014).

63. AS. Rogachev, SG. Vadchenko, F. Baras, O. Politano, S. Rouvimov, NV. Sachkova, AS. Mukasyan, Structure evolution and reaction mechanism in the Ni/Al reactive multilayer nanofoils, *Acta Materialia*, 66, 86–89 (2014).
64. KV. Manukyan, A. Cross; S.Rouvimov; J.Miller; AS. Mukasyan; EE Wolf Low temperature decomposition of hydrous hydrazine over FeNi/Cu nanoparticles, *Applied Catalysis A: General* 476, 47–53 (2014).
65. NF. Shkodich, AS. Rogachev, SG. Vadchenko, DO. Moskovskikh, NV. Sachkova, S. Rouvimov, AS. Mukasyan, Bulk Cu–Cr nanocomposites by high-energy ball milling and spark plasma sintering, *Journal of Alloys and Compounds*, 617, 39–46 (2104).
66. KV. Manukyan, S. Kharatyan, S. Rouvimov, AS. Mukasyan, TEM/STEM Analysis of NiO Reduction to Ni during Annealing in H₂ Atmosphere, *Microscopy and Microanalysis*, 20, S3, 1898-1899 (2014).
67. AS. Rogachev, SG. Vadchenko, A.S. Mukasyan, “New Results on Structural Macrokinetics Obtained on Multilayer Nanofoils”, *Advances in Science and Technology*, 2014, 88, pp.85-93

2013

68. KV. Manukyan, A. Cross, S. Roslyakov, S. Rouvimov, AS. Rogachev, EE. Wolf, AS. Mukasyan, Solution Combustion Synthesis of Nano-Crystalline Metallic Materials: Mechanistic Studies, *J. Phys. Chem. C*, 2013, 117 (46), 24417–24427, DOI: 10.1021/jp408260m, (2013).
69. A. Kumar, JT. Miller, AS. Mukasyan, EE. Wolf, In-situ XAS and FTIR studies of a multi-component Ni/Fe/Cu catalyst for hydrogen production from ethanol, *Applied Catalysis A: General*; 467 593-603 (2013).
70. RV. Reeves, AS. Mukasyan, SF. Son, Transition from Impact-induced Thermal Runaway to Prompt Mechanochemical Explosion in Nanoscaled Ni/Al Reactive Systems, *Propellants Explos. Pyrotech.* 38 (5), 611-621 (2013).
71. Ya-C. Lin, AN. Nepapushev, AS Rogachev, PJ McGinn, AS Mukasyan, Combustion joining of carbon/carbon composites by a reactive mixture of titanium and mechanically activated nickel/aluminum powders, *Ceramics International*, 39, 7499-7505 (2013).
72. KV. Manukyan, A. Voskanyan, S. Rouvimov; A.S. Mukasyan, S. Kharatyan, W and Two-dimensional WO₃/W Nano-crystals Produced by Controlled Self-sustaining Reduction of Sodium Tungstate, *Journal of Materials Research*, 28 (18) 2611- 2621 (2013).
73. AS. Rogachev, NF Shkodich, SG Vadchenko, F Baras, D Yu Kovalev, S Rouvimov, AA. Nepapushev, AS Mukasyan, Influence of the high-energy ball milling on structure and reactivity of the Ni+Al powder mixture, *J. Alloys & Compounds*, 577, 600-605 (2013).
74. KV. Manukyan, S. Rouvimov, EE Wolf, AS. Mukasyan, Combustion synthesis of graphene materials, *Carbon*, 62, 3092-311 (2013).
75. BH. Meekins, YC. Lin, JS. Manser, KV. Manukyan, AS. Mukasyan, PV. Kamat, PJ. McGinn, Photoactive Porous Silicon Nanopowder, *ACS Applied Materials & Interfaces* 5 (8), 2943-2951 (2013).
76. SI. Roslyakov, DYu. Kovalev, AS. Rogachev, KV. Manukyan, AS. Mukasyan, Solution Combustion: Dynamic of Phase transformation during synthesis of high porous nickel, *Dokl. Phys. Chem.*, 449 (1), 48-51 (2013).

77. DO. Moskovskikh, AS. Mukasyan, Rogachev AS., Self-Propagating High-Temperature Synthesis of Silicon Carbide Nanopowders, *Dokl. Phys. Chem.*, 449 (1), 41-43 (2013).
78. O. Politano, F. Baras, AS. Mukasyan, SG. Vadchenko, AS. Rogachev, Microstructure development during NiAl intermetallic synthesis in reactive Ni–Al nanolayers: Numerical investigations vs. TEM observations, *Surface and Coating Technology*, 215, 485-492 (2013).
79. G. Carotenuto, A. Kumar, J. Miller, AS. Mukasyan, E. Santacesaria, EE. Wolf Hydrogen production by ethanol decomposition and partial oxidation over copper/copper-chromite based catalysts prepared by combustion synthesis *Catalysis Today* 203 163– 175 (2013).
80. KV. Manukyan, Ya-C. Lin, S. Rouvimov, PJ. McGinn, A.S. Mukasyan, Microstructure-reactivity relationship of Ti-C reactive nanomaterials, *J. Appl. Phys.* 113 (2), 024302-024302-10 (2013).
81. AS. Mukasyan, Ya-C. Lin, AS. Rogachev, DO. Moskovskikh, Direct Combustion Synthesis of Silicon Carbide Nanopowder from the Elements, *J. Am. Ceram. Soc.*, 96 (1), 111-117 (2013)

2012

82. Ya-C. Lin, PJ. McGinn, AS. Mukasyan, High temperature rapid reactive joining of dissimilar materials: Silicon carbide to an aluminum alloy, *J. Eur. Ceram. Soc.*, 32 (14), 3809-3818 (2012)
83. Ya-C. Lin, EM. Ruiz, RG. Rateick Jr., PJ. McGinn, AS. Mukasyan, One-step synthesis of a multi-functional anti-oxidation protective layer on the surface of carbon/carbon composites, *Carbon*, 50(2) 557-565 (2012).
84. KV. Manukyan, BA. Mason, LJ. Groven, Ya-C. Lin, M. Cherukara, SF. Son, A. Strachan, AS. Mukasya, Tailored Reactivity of Ni+Al Nanocomposites: Microstructural Correlations, *J. Phys. Chem. C.*, 116 (39), 21027-21038 (2012).
85. AS. Rogachev, SG. Vadchenko, AS. Mukasyan, Self-sustained waves of exothermic dissolution in reactive multilayer nano-foils, *Appl. Phys. Lett.*, 101(6) Article Number: 063119, (2012).
86. A. Cross, Allison, A. Kumar, EE. Wolf, AS. Mukasyan, Combustion Synthesis of a Nickel Supported Catalyst: Effect of Metal Distribution on the Activity during Ethanol Decomposition, *Ind. & Eng. Chem., Res.*, 51(37), 12004-12008 (2012).
87. AE. Hannora, AS. Mukasyan, ZA. Mansurov, Nanocrystalline Hydroxyapatite/Si Coating by Mechanical Alloying Technique *Bioinor. Chem., & Appl.* , 12, Article Number: 390104, 14 pages, (2012).
88. NO. Golovchenko, O. Bairakova, S. Aknazarov, G. Ksandopulo, AS. Mukasyan, Extraction of ferrotungsten from ores with Low WO₃ content, *International Journal of Self-Propagating High-Temperature Synthesis*, 21(3), 156-161 (2012).
89. R.V. Reeves, A.S. Mukasyan, S.F. Son, Microstructural Effects of Ignition Sensitivity in Ni/Al Systems subjected to High Strain Rate Impacts, AIP Conference Proceedings, 1426, 539 (2012); doi 10.1063/1.3686335.

2011

90. A.S. Mukasyan, Combustion Synthesis of Silicon Carbide, in a book: *Properties and Applications of Silicon Carbide*, ed. by: Prof. R. Gerhardt, INTECH, Vienna, Austria , ISBN 978-953-307-356-9, 389-409 (2011).

91. A. Kumar, EE. Wolf, AS. Mukasyan, Solution combustion synthesis of metal nanopowders: Copper and copper/nickel alloys, *AIChE J.*, 57(12), 3473- 3479 (2011).
92. A. Kumar, EE. Wolf, AS. Mukasyan, Solution combustion synthesis of metal nanopowders: Nickel—Reaction pathways, *AIChE J.*, 57(8), 2207-2214 (2011).
93. AS. Shteinberg, AA. Berlin, AA. Denisaev, A S. Mukasyan, Kinetics of Fast Reactions in Condensed Systems: Some Recent Results (An Autoreview), *Int. J. of Self-Propagating High-Temperature Synthesis*, 20(4), 259–265 (2011).
94. EM. Lennon, MC. Tanzy, VA. Volpert, AS. Mukasyan, A. Bayliss, Combustion of reactive solutions impregnated into a cellulose carrier: Modeling of two combustion fronts, *Chem. Eng. Journal*, 174 (1), 333-340 (2011).
95. AS. Mukasyan, BB. Khina, RV. Reeves, SF. Son, Mechanical activation and gasless explosion: Nanostructural aspects, *Chem. Eng. Journal*, 174 (2-3) 677-686 (2011).
96. A. Kumar, AS. Mukasyan and EE. Wolf, Combustion synthesis of Ni, Fe and Cu multi-component catalysts for hydrogen production from ethanol reforming, *Applied Catalysis A: General*, 401(1-2), 20-28 (2011)

2010

97. A.S. Rogachev, A.S. Mukasyan, Combustion of Heterogeneous Nano-Structured Systems, *Combustion, Explosion and Shock Waves*, 2010, 4 (3), 243-266 (2010).
98. RV. Reeves, AS. Mukasyan. and SF. Son, Thermal and Impact Reaction Initiation in Al-Ni Heterogeneous System, *J. Phys. Chem. C.*, 114, 14772-14780 (2010).
99. A. Kumar, AS. Mukasyan, EE. Wolf, Modeling Impregnated layer Combustion Synthesis of Catalysts for Hydrogen Generation from Oxidative Reforming of Methanol, *Ind. & Engineering Chemistry Research*, 49, 11001-11008 (2010).
100. ZS. Ermekova, ZA. Mansurov, AS. Mukasyan, Influence of Precursor Morphology on the Microstructure of Silicon Carbide Nanopowder produced by Combustion Syntheses, *Ceramics International*, 36 (8), 2297-2305 (2010).
101. ZS. Ermekova, ZA. Mansurov, AS. Mukasyan, Combustion Synthesis of Silicoc Nano powders, *Int. J. of SHS*, 19 (2), 96-103 (2010).
102. A. E. Hannora, A.S. Mukasyan, Z.A. Mansurov, Mechanochemical Synthesis of Nano-crystalline Hydroxyapatite Coating, *Eurasian Chem Tech J.*, 12, 79-95 (2010).
103. AS. Shteinberg, Ya-C. Lin, SF. Son, AS. Mukasyan, Kinetics of High Temperature Reaction in Ni-Al System: Influence of Mechanical Activation, *J. Phys. Chem. A*, 114, 6111–6116 (2010).
104. A. Kumar, AS. Mukasyan, EE. Wolf, Impregnated Layer Combustion Synthesis Method for Preparation of Complex Oxide Catalysts for Oxidative Reforming of Methanol, *Applied Catalysis A: General*, 372(2), 175–183 (2010).
105. AS. Mukasyan, JDE. White, DY. Kovalev, NA. Kochetov, VI. Ponomarev, SF. Son, Dynamics of Phase Transformation During Thermal Explosion in the Al-Ni System: Influence of Mechanical Activation, *Physica B-Condensed Matter.*, 405, 778–784 (2010).

2009

106. R. Reeves, J DE. White, EM. Dufresne, K. Fezzaa, SF. Son, A. Varma, AS. Mukasyan, Microstructural Transformations and Kinetics of High-temperature

Heterogeneous Gasless Reactions by High-speed X-ray Phase-Contrast Imaging, *Physical Review B.*, 80, 224103 (2009).

107. JDE. White, RV. Reeves, SF. Son, AS. Mukasyan, Thermal Explosion in Al-Ni System: Influence of Mechanical Activation, *J. Phys. Chem., A*, 113, 13541–13547 (2009).
108. JDE. White, AS. Mukasyan A.S. Electrically induced liquid infiltration for the synthesis of carbon/carbon-silicon carbide composite, *Ceram. International*, 35, 3291–3299 (2009).
109. RV. Reeves, J. White, AS. Mukasyan, SF. Son, Comparison of Mechanical and Thermal Ignition Characteristics for Reactivity of Enhanced Ni/Al Powders, *Shock Compression of Condensed Matter - 2009*, PTS 1 and 2 Book Series: AIP Conference Proceedings, 1195, 466-46779 (2009).
110. ZS. Ermekova, ZA. Mansurov, AS. Mukasyan, Self-Propagating High Temperature Synthesis of Sub-micron Silicon Powders, *Combustion and Plasm - Chemistry*, 7, 1-6 (2009, in Russian).

2008

111. A.S. Mukasyam A.S. Rogachev, Discrete Reaction Waves: Gasless Combustion of Solid Powder Mixtures”, *J. Progress in Energy and Combustion Science* 34(3), 377-416 (2008).
112. A.S. Mukasyan and Singanahally T. Aruna, Combustion synthesis and Nanomaterials, *Current Opinion in Solid State and Materials Science*, 12, 44–50 (2008).
113. S. Schuyten, P. Dinka, AS. Mukasyan, EE. Wolf, A Novel Combustion Synthesis Preparation of CuO/ZnO/ZrO₂/Pd for Oxidative Hydrogen Production from Methanol, *Catalysis Letters*, 121 (3-4) 189-198 (2008)
114. JDE. White, AH. Simpson, AS. Shteinberg, AS. Mukasyan, Combustion Joining of Refractory Materials: Carbon-Carbon Composites, *J. Mat. Res.*, 23 (1) 160-169 (2008).
115. AD. Lan, AS. Mukasyan, Complex SrRuO₃-Pt and LaRuO₃-Pt Catalysts for Direct Alcohol Fuel Cells, *Ind. & Eng. Chem. Res.* 47(23) 8989-8994 (2008).

2007

116. A.S. Mukasyan, J.D. White, Combustion Joining of Refractory Materials, in a book: *Combustion of Heterogeneous Systems: Fundamentals and Applications for Material Synthesis*, Research Signpost Publisher, 219-245 (2007).
117. AS. Mukasyan, JD. White, Combustion Joining of Refractory Materials, *Int. Journal of Self-Propagating High-Temperature Synthesis*, 16 (3), 154–168 (2007).
118. AS. Mukasyan, P. Dinka, Novel Method for Synthesis of Nano-Materials: Combustion of Active Impregnated Layer, *J. Adv. Eng. Mater.*, 9, 653-657 (2007).
119. A .Lan, AS. Mukasyan, Perovskite-based catalysts for direct methanol fuel cells, *J. Phys. Chem. C.*, 111(26), 9573 – 9582 (2007).
120. A. Lan,, A.S. Mukasyan, Perovskite-based Catalysts for Direct Ethanol Fuel Cells, *Eurasian Chem.-Tech J.*, 9(1) 1-9 (2007).
121. P. Dinka, AS. Mukasyan, Perovskite Catalysts for the Auto-reforming of Sulfur Containing Fuels, *J. Power Sources*, 167(2), 472-481 (2007).

122. A. Lan, A. S. Mukasyan, Perovskite-Based Catalysts for Direct Ethanol Fuel Cells, *ECS Trans.* 2, (24) 1-10 (2007).
123. AS. Mukasyan and P. Dinka, Novel Approaches for Solution Combustion Synthesis of Nano-Materials, *International Journal of Self-Propagating High-Temperature Synthesis*, 16 (1), 23-35 (2007).
124. J. White, AS. Mukasyan, M. La Forest, A. Simpson, Novel apparatus for joining of carbon-carbon composites, *Review of Scientific Instruments*, 78 (1) Article Number: 015105 (2007)
125. AS. Mukasyan, P. Epstein and P. Dinka, Solution combustion synthesis of nanomaterials, *Proc. Combustion Institute*, 31(2), 1789-1795 (2007).

2006

126. K. Deshpande, AS. Mukasyan and A. Varma, High-throughput Evaluation of the Perovskite-based Catalysts for Direct Methanol Fuel Cells, *J. Power Sources*, **158** (1), 60-68 (2006).
127. Yue-Ying Fan, A. Kaufmann, AS. Mukasyan, A. Varma, Single and Multi-Wall Carbon Nanotubes Produced Using the Floating Catalyst Method: Synthesis, Purification and Hydrogen-uptake, *Carbon*, **44**(11), 2160-2170 (2006).
128. C. Norfolk, A. Kaufmann, AS. Mukasyan, A. Varma, Processing of Mesocarbon Microbeads to High-Performance Materials: Part III. High-Temperature Sintering and Graphitization, *Carbon*, **44** (2), 293-300 (2006).
129. C. Norfolk, AS. Mukasyan, D. Hayes, P. McGinn, A. Varma, Processing of Mesocarbon Microbeads to High-Performance Materials: Part II. Reaction bonding by silicon carbide and nitride, *Carbon*, **44**(2), 301-306 (2006).
130. P. Dinka, AS. Mukasyan, Solution Combustion Synthesis of Nano Materials, *Nano Science and Technology Institute, Cambridge, MA*, **2139**, 7-11 (2006).

2005

131. A.S. Mukasyan, C. Lau, A. Varma, Influence of Gravity on Combustion Synthesis of Advanced Materials, *AIAA Journal*, **43**(2), 225-246 (2005).
132. P. Dinka, AS. Mukasyan, In Situ Preparation of the Supported Catalysts by Solution Combustion Synthesis, *J. Phys. Chem. B.*, **109**(46), 21627-21633 (2005).
133. A. Lan, and AS. Mukasyan, Hydrogen Storage Capacity Characterization of Carbon Nanotubes by Micro-Gravimetric Approach, *J. Phys. Chem. B.*, **109**(33), 16011-16016 (2005).
134. AS. Mukasyan, Combustion synthesis of Nitrides: Mechanistic Studies, *Proceed, Combust. Inst.* **30**, 2529-2535 (2005).
135. K. Deshpande, M. Nersesyan, AS. Mukasyan. and A. Varma , Novel Ferromagnetic Iron Oxide Nanopowders, *Ind. Eng. Chem. Res.* **44**, 6196-6199 (2005).
136. G. Galstyan, HA. Chatilyan, A. Kirakosyan, SL. Kharatyan, AS. Mukasyan, A. Varma, Reaction diffusion in Mo-Si system above melting point of silicon, *Defects and Diffusion Forum*, **237-240**, 873-878 (2005).
137. SL. Kharatyan, HA. Chatilyan, AS. Mukasyan, DA. Simonetti, A. Varma, Influence of Heating Rate on Kinetics of Rapid High-Temperature Reactions in Condensed Heterogeneous Media: Mo-Si System, *AIChE J.*, **51**(1) 261-270 (2005)

2004

138. AS. Mukasyan, AS Rogachev, M. Mercedes, A. Varma, Microstructural Correlations between Reaction Medium and Combustion Wave Propagation in Heterogeneous Systems, *Chem. Eng. Sci.*, **59**, 5099-5105 (2004).
139. K. Deshpande, AS. Mukasyan, A. Varma, Direct Synthesis of Iron Oxide Nanopowders Combustion Approach: Reaction Mechanism and Properties, *Chem. Mater.* **16** (24), 4896-4904 (2004).
140. Varma, A. and Mukasyan, A. "Combustion Synthesis of Advanced Materials: Fundamentals and Applications", *Korean J. Chem. Eng.*, **21** (2), 527-536 (2004).
141. E. Shafirovich, AS. Mukasyan, L. Thiers, A. Varma, C. Legrand, I. Chauveau, I Gökalp, Allumage et Combustion de Particules d'Aluminium Recouvertes de Nickel, *Combustion*, **2** (4), 275-293 (2004).
142. C. Norfolk, AS. Mukasyan, D. Hayes, P. McGinn, A. Varma, Processing of Mesocarbon Microbeads to High-Performance Materials: Part I. Studies Toward the Sintering Mechanism, *Carbon*, **42** (1), 11-19 (2004).

2003

143. A.S. Mukasyan, Non Classical Problems in SHS", in a book: *Concepts of Self-Propagating High-Temperature Synthesis*, (in Russ.) ed. by A. Merzhanov, Territoria, Moscow. 48-54 (2003).
144. Varma, A, Mukasyan A. S, Deshpande K., Pranda P., Erii, P., "Combustion Synthesis of Nanoscale Oxide Powders: Mechanism, Characterization and Properties", *Mat. Res. Soc. Symp. Proc.*, 800, 113-124 (2003).
145. E. Shafirovich, AS. Mukasyan, C. Zhou, A. Varma, G. Kshirsagar, JC. Cannon, Combustion Fluctuations in Low-Exothermic Condensed Systems for Emergency Oxygen Generation, *Comb. & Flame*, **135** (4), 557-561 (2003).
146. B. Li, AS. Mukasyan, A. Varma, Combustion Synthesis of CoCrMo (F-75) Implant Alloys: Microstructure and Properties, *Mater. Res. Inov*, **7** (4) 245-252 (2003).
147. K. Deshpande, AS. Mukasyan, A. Varma, Aqueous Combustion Synthesis of Strontium-Doped Lanthanum Chromate Ceramics, *J. Am. Ceram. Soc.*, **86** (7), 1149-1154 (2003).
148. C. Lau, AS. Mukasyan, A. Varma, Reaction and Phase Separation Mechanisms during Synthesis of Alloys by Thermite Type Combustion Reactions, *J. Mat. Res.*, **18**(1), 121-129 (2003).
149. AS. Rogachev, AS. Mukasyan, A. Varma, Quenching of Gasless Combustion Wave: Time-Resolved Thermal Vision Studies, *Comb. Sci. & Tech.*, **175**(2), 357-372 (2003).

2002

150. A. Vama, A.S. Mukasyan, Combustion Synthesis of Intermetallic Compounds," in a book: *Self-Propagating High-Temperature Synthesis of Materials*, (A. Borisov, L. DeLuca and A. Merzhanov, Eds.), Taylor & Francis, New York, 1-34 (2002).
151. C. Lau, Mukasyan AS., A. Varma, Materials Synthesis by Reduction-Type Combustion Reaction: Influence of Gravity, *Proceed. Combustion Institute*, **29**, 1101-1108 (2002).

152. Varma A., KL. Yeung, R. Souleimanova, AS. Mukasyan, Novel Approach for Thin Dense Nanoscale Grained Metal Films, *Ind. & Eng. Chem. Res.*, **41** (25), 6323-6325 (2002).
153. AS. Rogachev, AS. Mukasyan, A. Varma, Thermal Explosion Modes in Gasless Heterogeneous Systems, *J. Mater. Synth. Proc.*, **10** (1), 29-34 (2002).
154. L. Thiers, AS. Mukasyan, A. Varma, Thermal Explosion in Ni-Al System: Influence of Reaction Medium Microstructure, *Combustion & Flame*, **131** (1-2), 198-209, (2002).
155. A. Varma, B. Li, AS. Mukasyan, Novel Synthesis of Orthopaedic Implant Materials, *J. Adv. Eng. Mater.* **4**(7), 482-487 (2002).
156. EA. Shafirovich, AS. Mukasyan, L. Thiers, A. Varma, B. Legrand, C. Chauveau and I. Gökalp "Ignition and Combustion of Al Particles Clad by Ni", *Combust. Sci. Tech.*, **174** (3), 127-142 (2002).
157. R. Souleimanova, AS. Mukasyan, A. Varma, Pd Membranes Formed by Electroless Plating with Osmosis: H₂ Permeation Studies, *AIChE Journal*, **48** (2) 262-268 (2002).
158. EA. Shafirovich, AS. Mukasyan, A. Varma, G. Kshirsagar, JC. Cannon, Mechanism of Combustion in Low-Exothermic Mixtures of Sodium Chlorite and Metal Fuel, *Comb. & Flame*, **128**, 133-144 (2002).

2001

159. AS. Mukasyan, C. Lau, A. Varma, Gasless Combustion of Aluminum Particles Clad by Nickel, *Combust. Sci. Tech.*, **170**, 67-85 (2001).
160. Filimonov I.A, Kidin N.I. and Mukasyan,A.S., "The Influence of Filtration and Reactant Gas pressure on Spin Combustion in Gas-solid System", *Int. J. SHS*, **10** (2), 151-176 (2001).
161. R. Souleimanova, AS. Mukasyan, A. Varma, Pd –composite membranes preparation by electroless plating and osmosis: synthesis, characterization and properties, *Separ. & Purif. Thec.*, **25**, 79-86 (2001)
162. AS. Mukasyan, C. Costello, KP. Sherlock, D. Lafarga, A.Varma, Perovskite Membranes by Aqueous Combustion Synthesis: Synthesis and Properties, *Sep. & Purif. Tech.*, **25**, 117-126 (2001).
163. C. Lau, AS. Mukasyan, A. Pelekh, A. Varma, Mechanistic Studies in Combustion Synthesis of NiAl-TiB₂ Composites: Effects of Gravity, *J. Mat. Res.* **16** (6), 1614-1625 (2001).
164. L. Thiers, AS. Mukasyan, A. Pelekh, A. Varma, Kinetics of High-Temperature Reaction in Titanium-Nitrogen System: Nonisothermal Conditions, *Chem. Eng. J.*, **82**, 303-310 (2001).
165. A. Varma, AS. Mukasyan, S. Hwang, Dynamics of Self-Propagating Reactions in Heterogeneous Media: Experiments and Model, *Chem. Eng. Sci.*, **56**, 1459-1466, 2001.

2000

166. IA. Filimonov. NI. Kidin, AS. Mukasyan, The Effect of Filtration and Reactant Gas pressure on spin Combustion in Gas-solid System, *Proceedings of the Combustion Institute*, **28**(1), 1421-1430 (2000).

167. AS. Mukasyan, AS. Rogachev, A. Varma, Microstructural Mechanisms of Combustion in Heterogeneous Reaction Media, *Proceedings of the Combustion Institute*, **28(1)**, 1413-1419, (2000).
 168. L. Thiers, B. Leitenberger, AS. Mukasyan, A. Varma, Influence of Preheating Rate on Kinetics of High-Temperature Gas-Solid Reactions, *AIChE*, **46(12)**, 2518-2524 (2000).
 169. AS. Mukasyan, JA. Marasia, IA. Filimonov A. Varma, Role of Infiltration on Spin Combustion in Gas-Solid Systems, *Combust. Flame*, **122(3)**, 368-374 (2000).
 170. A. Pelekh, AS. Mukasyan, A. Varma, Electrothermography apparatus for kinetics of rapid high-temperature reactions, *Rev. Sic. Instrum.*, **71** (1), 220-223 (2000).
 171. R. Souleimanova, AS. Mukasyan, A. Varma, Effects of Osmosis on Microstructure of Pd-Composite Membranes Synthesized by Electroless Plating Technique, *J. Memb. Sci.*, **166(2)**, 249-257 (2000).
-

1999

172. Souleimanova R., Mukasyan A.S., Varma A., Dynamics of Structure Formation during Electroless Plating of Thin Metal-Composite Membranes. *Chem. Eng. Sci.*, **54**, 3369-3377 (1999).
173. Mukasyan A.S., Rogachev A.S., Varma A., Microscopic Mechanisms of Pulsating Combustion in Gasless Systems, *AIChE*, **45(12)**, 2580-2585, (1999).
174. Mukasyan A.S., Rogachev A.S., Varma A., Mechanism of Reaction Wave Propagation during Combustion Synthesis of Advanced Materials, *Chem. Eng. Sci.*, **54**, 3357-3367 (1999).
175. Pelekh A., Mukasyan A.S., Varma A., Kinetics of Rapid High-temperature Reactions: Titanium-Nitrogen System, *Ind. & Eng. Chem. Res.*, **38**, 793-798 (1999).
176. Rogachev A.S, Mukasyan A.S., Varma A., Microstructure of Self-Propagating Reaction Exothermic Wave in Heterogeneous Media, *Dokl. Chemistry*, **366** (6), 777-780 (1999).
177. Klimchuk E.G., Avetisyan G.M., Khodak A.A., Minasyan V.T., Gazaryan K.G., Mukas'yan A.S., Merzhanov A.G., Regularities of Self-Propagating High-Temperature Synthesis in the Solid 8-hydroxyquinoline-chloramine B System, *Russian Chemical Bulletin*, **48**, No.12, 2245-2258, 1999 (Engl.), *Izves. Akad. Nauk. Seria Khim.*, No 12, 2271-2283 (1999).

1998

178. Varma A., Rogachev A.S., Mukasyan A.S., Hwang S., Combustion Synthesis of Advanced Materials: Principles and Applications", *Advances in Chemical Engineering*, **1998**, **24**, 79-226 (1998).
179. Varma A., Mukasyan A.S., Combustion Synthesis of *Advanced Materials*", in *ASM Handbook: Powder Metal Technologies and Applications*, **7**, 523-540 (1998).
180. Varma A., Rogachev A.S., Mukasyan A.S., Hwang S., Complex Behavior of Self-Propagating Reaction Waves in Heterogeneous Media, *Proc. Natl. Acad. Sci. USA*, **95**, 11053-11058 (1998).

181. Hwang S, Mukasyan A.S., Varma A., Mechanism of Combustion Wave Propagation in Heterogeneous Reaction systems, *Combust. Flame*, 115, 354-363 (1998).

1997

182. Mukasyan A.S., Khomenko I.O, Ponomarev V.I., Non-uniqueness of Combustion Mode in Heterogeneous System, *Combust. Sci. Tech.*, 128, 1-6, 215 (1997).
183. Hwang S, Mukasyan A.S., Rogachev A.S., Varma A., Combustion Wave Microstructures in Gas-Solid System: Experiments and Theory, *Combust. Sci. Tech.*, 123, 165-183 (1997).
184. Vadchenko S.G, Gordopolov A.Yu., Mukasyan A.S., The Effect of Molecular and Conductive Mechanism of Heat Transfer on the Propagation of Heterogeneous Combustion Waves, *Physics- Doklady*, 42 (6) 288-290 (1997).
185. Mukasyan A.S., Pelekh A., Varma A., Rogachev A.S., Jenkins A., The Effects of Gravity on Combustion Synthesis in Heterogeneous Gasless Systems, *AIAA*, 35, 11, 1821-1828 (1997).
186. Mukasyan A.S., Vadchenko S.G, Khomenko I.O., Combustion Modes in the Titanium-nitrogen System at Low Nitrogen Pressure, *Combust. Flame*, 111, 65-72 (1997).
187. Mukasyan A.S., Pelekh A., Varma A., Combustion Synthesis in Gasless Systems under Microgravity Conditions, *J. Mater. Synth. Proc.*, 5(5), 391-400 (1997).

1996

188. Kudriashov V.A., Mukasyan A.S. and Filimonov I.A., Chemo-Ionization Waves in Heterogeneous Combustion Processes, *J. of Mater. Synth. & Proc.*, 4(5), 353-358 (1996).
189. Merzhanov A.G., Mukasyan A.S., Rogachev A.S., Sytchev A.E., Varma A., Microstructure of Combustion Wave in Heterogeneous Gasless Systems, *Combust. Explos. Shock Waves*, 32(6), 655-665 (1996).
190. Mukasyan A.S., Hwang S., Rogachev A.S., Sytchev A.E. Merzhanov A.G., Varma A., Combustion Wave Microstructure in Heterogeneous Gasless Systems, *Combust. Sci. Tech.*, 115 (4-6), 335-353 (1996).
191. Gordopolov Yu.A., Zotov N.A., Mukasyan A.S., and Shikhverdiev R.M. Formation of Graded Ceramics Under Shock Wave Loading of SHS Products, *Int. J. SHS*, 5 (2), 191-196 (1996).

1995

192. Merzhanov A.G., Borovinskaya I.P., Khomenko I.O., Mukasyan A.S., Ponomarev V.I., Rogachev A.S., and Shkiro V.M., Dynamics of Phase Formation during SHS Processes, *Annales de Chimie*, 20, 123-138 (1995).
193. Mukasyan A.S., Postnikov S.V. and Merzhanov A.G., Hydraulic Effects in the Processes of Gasless Combustion, *Dokl. Chemistry*, 343(3), 340-342 (1995).

1994

194. Vadchenko S., Merzhanov A.G., Mukasyan A.S., and Sytchev A.E., The Influence of Uniaxial Loading on the Macrokinetics of Gasless Systems Combustion, *Dokl. Phys. Chem.*, 337 (5), 618-621 (1994).

195. Sharivker S.Yu., Mamyas S.S., Vlasov V.A, Mukasyan A.S., Activated sintering of silicon nitride powder made by SHS, *Powder Metallurgy and Metal Ceramics*, 33(9), 541-544 (1994).

1993

196. Sharivker, S.Yu., Borovinskaya, I.P., Mukasyan, A.S. and Karpov, V.V. Mechanical Activation of Powders of Silicon and Aluminium Nitrides Produced by the Method of Self-Propagating High-Temperature Synthesis, *Powder Metallurgy and Metal Ceramics*, 32 (3), 183-194 (3-8 Rus.) (1993).
197. Grigor'ev Yu.M, Zharkov A.B., Mukasyan A.S., and Shugaev V.A., Macrokinetics of Boron Carbides Fibers Formation by Chemical-Vapor-Deposition, *Izvestia Academ. Nauk, Inorg Mater.*, 29(3), 359-365 (1993).
198. Mukasyan A.S., Shugaev V.A. and Kiryakov N.B., The Influence of Gaseous Fluid Phase on Combustion of Titanium in Air, *Combust. Explos. Shock Waves*, 29(1), 7-11 (1993).
199. Khomenko I.O., Mukasyan A.S., Ponomarev V.I., Borovinskaya I.P., Merzhanov, A., Dynamics of Phase-forming Processes in Metal-gas System during Combustion, *Combust. Flame*, 92, 201-208 (1993).
200. Mukasyan A.S., Rogachev A.S., Figush V., Panek Z. and Kozankova Ya., Structure Formation Mechanisms of Titanium Inflammation in a Nitrogen Atmosphere, *J. Eng. Phys. Thermophys.*, 64, 146-152 (1993).
201. Skibska M., Szulc A., Mukasyan A.S. and Rogachev A.S., Microstructural Peculiarities of Silicon Nitride Formation under High Nitrogen Pressures. Part I: The influence of initial Si particle size distribution on Si₃N₄ SHS morphology, *Int. J. SHS*, 2(1), 39-49 (1993).
202. Skibska M., Szulc A., Mukasyan A.S., Shugaev V.A. and Shiryaev A.A., Microstructural Peculiarities of Silicon Nitride Formation under High Nitrogen Pressures. Part II: The effect of nitrogen pressure on SHS Si₃N₄ morphology and phase composition, *Int. J. SHS*, 2(3), 247-261 (1993).

1992

203. Khusid B.M., Khina B.B., Mukasyan A.S. and Bukreev E.V., Macrokinetics of Structure and Phase Formation in Titanium Nitrogen Self-Propagation Synthesis, *Int. J. SHS*, 1(3), 366-370 (1992).
204. Mukasyan A.S., Borovinskaya I.P., Structure Formation in SHS Nitrides, *Int. J. SHS*, 1(1), 55-63 (1992).
205. Molokov, I.V. and Mukasyan A.S., Explosive Treatment of SHS Gas - Solid Systems, *Int. J. SHS*, 1(1), 155-159 (1992).
206. Khomenko I.O., Mukasyan A.S., Ponomarev V.I., Borovinskaya I.P., Merzhanov A.G., Dynamics of Phase-forming Processes in Metal-gas System, *Dokl. Akad. Nauk SSSR*, 326(4), 673-677 (1992).
207. Borovinskaya I.P., Merzhanov A.G., Mukasyan A.S., Rogachev A.S., and Khusid B.M., Macrokinetics of Structure Formation during Infiltration Combustion of Titanium in Nitrogen, *Dokl. Akad. Nauk USSR*, 322(5), 912-917 (1992).

208. Sharivker S.Yu., Borovinskaya I.P., Vishnyakova G.A., Barinov Yu. N., Mukasyan A.S. and Knyazik A.M., Morphological and Technological Characteristics of Silicon Nitride Powder prepared by Self-Propagating High-Temperature Synthesis, *Soviet Powder Metallurgy and Metal Ceramics* (Poroshkovaya Metallurgiya, No.11(359), pp.16-21), 3(11), 915-920 (1992).

1991

209. Grigor'ev Yu.M., Shugaev V.A., Mukasyan A.S., Samoilenko N.G. and Shiryaev A.A., The Chemical Vapor Deposition of Boron Carbide from BCl₃-C₇H₈-H₂ mixture on to a Heated Support, *Russian J. of Inorganic Chemistry*, 36(8), 1031-1935 (1991).

1990

210. Mukasyan A.S., Stepanov B.V., Gal'chenko Yu.A. and Borovinskaya I.P., Mechanism of Structure Formation of Silicon Nitride with Combustion of Silicon in Nitrogen, *Combust. Explos. Shock Waves*, 26(1), 39-45(1990).
211. Merzhanov A.G., Rogachev A.S., Mukasyan A.S. and Khusid B.M., Macrokinetics of Structural Transformation during the Gasless Combustion of a Titanium and Carbon Powder Mixture, *Combust. Explos. Shock Waves*, 26(1), 92-102 (1990).
212. Merzhanov A.G., Rogachev A.S., Mukasyan A.S., Khusid B.M., Borovinskaya I.P., and Khina B.B., The role of gas-phase transport in combustion of tantalum-carbon system, *J. Eng. Phys. Thermophys.*, 59(1), 809-816 (5-13) (1990).

1989

213. Mukasyan A.S., Blinov M.Yu., Borovinskaya I.P., Merzhanov A.G., Some Properties of Nitrogen Ceramics By Direct SHS Method, *Proceedings of International Conference, Engineering Ceramics'89*, Ed. by M. Havier, Bratislava, pp. 161-171 (1989).

1988

214. Stepanov B.V., Mukasyan A.S., and Shkadinskii K.G., Macrokinetics of Si₃N₄ Formation with Gas Transport of Silicon, *Dokl. Phys. Chem.*, 302(1), 814-817 (145-149) (1988).
215. Karpov A.V., Emel'anov A.N., Mukasyan A.S., Thermophysical Properties of Silicon Nitride - Silicon Carbide Based Ceramic, *Izvestia Akademii Nauk, Inorganic Materials*, 24(7), 1049-1051 (1988).
216. Borovinskaya, I.P., Loryan V.E. Mukasyan A.S., Gasostatic Technology for Ceramic Materials (Газостатическая Технология Керамических Изделий), *Technology* No.1, 16-20 (1988) (in Russian).

1987

217. Rogachev A.S., Mukasyan A.S., and Merzhanov A.G., Structural Transitions in the Gasless Combustion of Titanium-Carbon & Titanium-Boron Systems, *Dokl. Phys. Chem.*, 297(6), 1240-1242 (1425-1428) (1987).

1986

218. Mukasyan A.S., Merzhanov A.G., Martinenko V.M., Borovinskaya I.P., and Blinov M.Y., Mechanism and Principles of Silicon Combustion in Nitrogen, *Combust. Explos. Shock Waves*, 22(5), 534-540 (1986).

US Patents

1. A. Mukasyan, K. Manukyan, Method for Production of Graphene and Other Carbon Materials, US Patent 9,580,323 B2, February 2017
2. M. Koucouthakis, D.J. Steinke, A. Mukasyan, J. D. E. White, Rapid synthesis of silicon carbide-carbon composites, US Patent 9,321,692, April, 2016.
3. RV Reeves, SF Son, LJ Groven, AS Mukasyan, Gasless ignition system and method for making same, US Patent 9,175,937, B1, November, 2015.
4. Simpson; Allen H., La Forest; Mark L., Mukasyan Alexander, Combustion synthesis to bond metal inserts to C-C composite surfaces, US Patent 8,574,470, C01B, November 15, 2013.
5. Allen H. Simpson, Slawomir T. Fryska, Mark L. La Forest, Roger L. Klinedinst, Alexander Mukasyan, Charles D. D'Amico, Bonding carbon-carbon composites through a reactant layer, US Patent 8448685, B2, May 28, 2013.
6. La Forest; Mark L., Simpson; Allen H., Fryska; Slawomir, Mukasyan; Alexander, Titanium carbide or tungsten carbide with combustion synthesis to block porosity in C-C brake discs for antioxidation protection, US Patent 8,383,197, February 26, 2013.
7. Simpson; Allen H., La Forest; Mark L., Mukasyan Alexander, Functionally graded high temperature bonding of fiberglass fibers to steel, No.US 8,178,212, B2F, May 15, 2012.
8. Mukasyan A., Mukasyan, V., Nersesyan M., Method of Manufacturing High-surface Area Silicon, US Patent 7,964,172, B2, June 21, 2011.
9. Mukasyan A., Mukasyan, V., Nersesyan M., Kharatyan, S., Khachatryan, H., Method of Manufacturing Sub-micron Silicon Carbide Powder, US Patent 7,939,044, B2, May 10, 2011.
10. Simpson, A., Fryska, B. La Forest M., Klinedinst R., Mukasyan A., D'Amico, C., Apparatus and Method for Bonding Carbon-Carbon Composite through a Reactive Layer, US Patent, 7,922,845 B2, April 12, 2011.
11. Simpson, A., Fryska, B. La Forest M., Klinedinst R. Mukasyan A., D'Amico, C., Bonding of Carbon-Carbon Composites Using Titanium Carbide, US Patent 7,858,187, B2, Dec. 28, 2010.
12. Simpson, A., La Forest M., Mukasyan A., Steinke, D., Bonding of Carbon Fibers to Metal Inserts for Use in Composites, US Patent 7,588,179, B2, Sept. 15, 2009.
13. Varma, A., Mukasyan A., Li, B. Synthesis of Orthopedic Implant Materials, US Patent 6,896,846, May 24, 2005.

Russian Patents

1. Rogachev AS, D.O.Moskovskikh OD., Mukasyan, A. S., Method for manufacturing of nano powders of silicon carbide:, RU 2493937, C01B31/36 B82Y30/00 B22F9/16, October 2013;

2. Merzhanov, A. G.; Borovinskaya, I. P.; Loryan, V. E.; Blinov, M. Yu.; Mukasyan, A. S. "Manufacture of Ceramic Articles based on Refractory Nitrides", written in Russian. Application: SU 89-4642877, Patent No. SU 1720258, A1, (1995).
3. Levashov E.A., Vadchenko S.G., Terenin E.P., Antonova N.N, Pituilin A.P., Borovinskaya I.P., Merzhanov A.G., Mukasyan A.S. " Manufacture of refractory metal nitrides by self-propagating high-temperature synthesis comprising briquetting", Russian Patent, No. 5049609/02, class C22C 1/04, (1992).
4. Merzhanov, A. G.; Borovinskaya, I. P.; Lorian, V. E.; Blinov, M. J.; Mukasian, A. S. "Manufacture of nitride ceramics having high heat resistance", Int. Appl. (1990), 26 pp. Designated States W: BG, HU, JP, US. Designated States RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE. Patent written in Russian. Application: WO 89-SU74 19890324
5. Pavlov A.M., Mukasyan A.S., Ermakov V.I., and Okolovich E.V. " Methods for Production of Refractory Compounds" USSR Patenr SU No.1782054, class C04B 35/58, (1990).
6. Borovinskaya I.P., Blinov M.Y., Loryan V. Ed. and Mukasyan A.S., "Methods for Production of Ceramic Articles", USSR Patent, No.5049609, class C04B 35/58, (1989).
7. Varlamov A.G., Grigor'ev Yu.M., Mukasyan A.S., Samoilenko N.G., and Shul'ga Yu.M., "Methods of Thin Film Production form Amorphouse Boron Nitride", USSR Patent, SU No.1584309, class C 01 B 21/068, (1987).
8. Blinov M.Y., Mukasyan A.S., Borovinskaya I.P., and Merzhanov A.G., "Reaction Mixture for Production of Ceramic Articles", USSR Patent, SU No.14661190, class C 04 B 35/58 (1987).
9. Blinov M.Y., Mukasyan A.S., Borovinskaya I.P., and Merzhanov A.G., "Reaction Mixture for Production of Ceramic Articles", USSR Patent, SU No.14661191, class C 04 B 35/58 (1987).
10. Blinov M.Y., Mukasyan A.S., Martinenko V.M., Borovinskaya I.P., and Merzhanov A.G., "Methods for Production of Silicon Nitride Based Ceramics", USSR Patent, SU No.1383321, class C 04 B 35/58 (1986).
11. Borovinskaya I.P., Plotnikov B.V., Merzhanov A.G., Martinenko V.M., Mukasyan A.S., Kurchatkin V.M., Boldov V.V., and Krivchenko A.L., "Reaction Mixture for Boron Nitride Production", USSR Patent, SU No.126881, class C 04 B 35/58 (1985).
12. Borovinskaya I.P., Kondakov S.F., Martinenko V.M., Merzhanov A.G., Mukasyan A.S., and Petrov L.N., "Methods for Production of Ceramic Material Based on Silicon Nitride", USSR Patent, SU No.1096254, class C 04 B 35/58 (1983).
13. Borovinskaya I.P., Vikulin V.V., Martinenko V.M., Merzhanov A.G., Mukasyan A.S., Paranosenkov V.P., Romashin A.G., Rudikina V.N., and Shatalin A.S., "Methods for Production of Silicon Nitride Based Materials", USSR Patent, SU No.1073229, class C 04 B 35/58 (1981).

OTHER PUBLICATIONS:

1. Nepapushev AA, Rogachev, AS Mukasyan AS., Combustion Joining of carbon/carbon Composite using Reactive Mixture of Ti and MA-Ni/Al Powders, *Chemistry Today*, 87-89 (2014).

2. Dinka P. and A. Mukasyan, *Proceed. NSTI Nanotechnology Conference*, 1, 456-459 (2006).
3. Lang A., Mukasyan AS, Perovskite-Based Catalysts for Direct Alcohol Fuel Cells, 209th ECS Meeting-Denver, Colorado, Vol. 209 (2006).
4. Mukasyan A.S, Rogachev A.S. and Varma, A., "Microstructure Correlations between Reaction Media and Combustion Wave in Heterogeneous Systems", Abstract for the 18th International Symposium on Chemical Reaction Engineering, ISCRE-18, Chicago, IL, (2004).
5. Deshpande, K., Mukasyan A. S, and Varma A., "Novel Synthesis of Nanoscale Iron Oxides", Proceedings for Annual AIChE Meeting, San-Francisco, CA, pp. (2003).
6. Varma, A., C. Lau and Mukasyan A.S., "Mechanistic Studies of Combustion and Structure Formation during Combustion Synthesis of Advanced Materials: Phase Separation Mechanism for Bio-Alloys", *Proceedings of Seventh International Microgravity Combustion Workshop*, Cleveland, OH, pp. 65-68 (2003).
7. Varma, A., and Mukasyan, A.S. "Combustion of Complex Metal Particles", *Proceedings of Third Joint Meeting of the Combustion Section of The Combustion Institute*, Chicago, March (2003).
8. Varma, A., C. Lau, Mukasyan, A.S., "Combustion Synthesis of Bio-alloys: phase separation mechanism", *AIAA paper # 2003-0984*, 41th AIAA Aerospace Sciences Meeting, Reno, Nevada, January (2003).
9. Shafirovich, E., Mukasyan, A.S., Varma, A., Kshirsagar, G., and Cannon, J.C., "Combustion of Low-Exothermic Condensed Systems for Oxygen Generation", *Proceedings of Technical Meeting of the Central States Section/The Combustion Institute*, Knoxville, TN, April, (2002).
10. Varma, A., C. Lau, Mukasyan, A.S., "Mechanistic Studies of Combustion and Structure Formation during Synthesis of Advanced Materials", *AIAA paper # 2002-1079*, 40th AIAA Aerospace Sciences Meeting, Reno, Nevada, January (2002).
11. Varma, Arvind; Mukasyan, Alexander; Deshpande, Kishori T. "Novel synthesis route for perovskite membranes", Abstracts of Papers, 222nd ACS National Meeting, Chicago, IL, United States, August 26-30, 2001 (2001).
12. Shafirovich, E., Mukasyan, A.S., Varma, A., Thiers, L., Legrand, B., Chauveau, C., and Gokalp, I., "Combustion of Levitated Al/Ni Particles", *Proceedings of 2-nd Joint Meeting of the USA sections of the Combustion Institute*, Oakland, California, March (2001)
13. Varma, A., Lau, C., and Mukasyan A.S. "Mechanistic Studies of Combustion and Structure Formation during Synthesis of Advanced Materials", *Proceedings of Six International Microgravity Combustion Workshop*, Cleveland, Ohio, May, ppg. 277-280 (2001).
14. Varam, A., Pelekh, A., and Mukasyan A.S. "The Effects of Gravity on Combustion and Structure Formation during the Synthesis of the Advanced Materials", *Proceedings of Fifth International Microgravity Combustion Workshop*, Cleveland, OH, ppg.421-423 (1999).

15. Varma A., Mukasyan A.S., Pelekh A "The Effects of Gravity on Combustion and Structure Formation during Combustion Synthesis in Gasless System", *Proceedings of Fourth International Microgravity Combustion Workshop*, Cleveland, Ohio, May, ppg.31-36 (1997).
16. Vadchenko S.G., Merzhanov A.G., Mukasyan A.S., and Sytchev A.E., "A Study on a Deformation of the Combustion Zone", *Proceedings of the II-Eur. Symposium on Fluids, in Space*, Naples, Italy, April, 343 (1996).
17. Trofimov, A. I.; Mukasyan, A. S.; Borovinskaya, I. P. "Influence of titanium sample density on ignition and structure formation in electromagnetic field. In Combust., Detonation, Shock Waves, Proc. Zel'Dovich Meml. Int. Conf. Combust. Editor(s): Frolov, S. M. (1994), 2, 144-6. Publisher: Russian Section of the Combustion Institute, Moscow, Russia
18. Merzhanov A.G. and Mukasyan A.S., "The Peculiarities of Combustion in Heterogeneous Systems", *Proceedings of the Russian-Japanese Seminar on Combustion*, Chernogolovka, Russia, October, 153 (1993).
19. Grigor'ev Yu.M., Zharkov A.V., Mukasyan A.S. and Shugaev V.A., "Macrokinetics Features of Boron Carbide Fiber Formation by the CVD Method" , *Preprint*, Chernogolovka, ISMAN (1992).
20. Vershinnikov, V.I., Mamyas, S.S., Shiriaev, A.A., Mukasyan, A.S., Pesotskaya, N.S. and Belikova, A.F., "Synthesis of Powder and Material based on TiB₂-Al₂O₃ Composition", *Preprint*, Chernogolovka, Institute of Structural Macrokinetics, pppg.1-39 (1992).
21. Mukasyan A.S., Bukreev B.M., Khusid B.M., Khina B.B., Rogachev A.S., Merzhanov A.G. and Borovinskaya, I.P., "Structural Macrokinetics of Reaction between Titanium and Nitrogen in the Combustion Mode", *Preprint*, Minsk, ITMO, ppg.1-55 (1991).
22. Molokov I.V. and Mukasyan A.S., "Quenching of Combustion Wave by Explosive Treatment in Ti-N-O System," *Preprint*, Chernogolovka, Institute of Structural Macrokinetics, ppg.1-30 (1990).
23. Nersisyan M.D., Lisikov S.V., Mukasyan A.S., Karpov L.G., Ponomarev V.I. and Borovinskaya I.P., " Self-Propagation High-Temperature Synthesis of HTSC-Ceramics in Bi-Sr-Ca-Cu-O System", *Preprint*, Chernogolovka, Institute of Structural Macrokinetics, ppg.1-37, (1990).
24. Blinov M.Y, Mukasyan A.S., Sytchev A.E., Pesotskaya N.S., Borovinskaya I.P., Boiarchenko, V.I. and Emel'ianov A.N., "Combustion Synthesis of High Density Ceramics based on Silicon Nitride", *Preprint*, Chernogolovka, Institute of Chemical Physics, ppg.1-15 (1989).
25. Blinov M.Y, Mukasyan A.S., Sytchev A.E., Borovinskaya I.P., and Boiarchenko V.I., "Composite SHS-Ceramics Based on Silicon Nitride", in *Proceedings: Structure, Properties and Technology of Metallic Systems and Ceramics*, Moscow Institute Steel and Alloy, ppg.13-29 (1988).

26. Mukasyan A.S., Blinov M.Y. and Gal'chenko Yu.A., "About Mechanism of Structure Formation during Combustion of silicon in Nitrogen", *Preprint # 147*, Chernogolovka, Institute of Chemical Physics, ppg. 1-8 (1988).
27. Borovinskaya, I.P., Blinov, M.Y, Mukasyan, A.S., Sytchev, A.E.and Boiarchenko V.I., " Synthesis and Physico-Mechanical Properties of SHS Silicon Nitride Based Ceramics", in *Proceedings: Nitride Based Materials*, Kiev, 188 (1988).
28. Borovinskaya I.P., Blinov M.Y, Mukasyan A.S., Sytchev A.E., "Influence of Hight - Temperatures and Gas Pressures on the Structure and Properties of SHS Silicon Nitride Based Ceramics", in *Proceedings: Constriction and Technology of Articles Production from nonmetals Materials*", VIAM, 18 (1988).
29. Merzhanov A.G., Borovinskaya I.P., Mukasyan A.S, Blinov M.Y. and Abramov A.P., "SHS Technology of Electro Insulating Materials", *Scientific Report*, No.0187.009.8028, 12-41 (1988).
30. Merzhanov A.G., Borovinskaya I.P., Filonenko A.K., Mukasyan A.S., Blinov M.Y. and Abramov A.P., "SHS Technology of Silicon Nitride and Silicon Carbade Based Ceramic", *Scientific Report*, No. 81.001.234, ppg. 1-76 (1987).
31. Mukasyan A.S., Merzhanov A.G., Martinenko V.M., Borovinskaya I.P., "Coagulation Phenomena during Combustion of Silicon Powder in Nitrogen", *Preprint #59*, Chernogolovka, Institute of Chemical Physics, ppg.1-10 (1986)
32. Mukasyan A.S., Merzhanov A.G., Martinenko V.M., Gal'chenko Yu.A., Borovinskaya I.P., Kudriashov V.A. " Mechanism of Silicon Nitride Structure Formation in Combustion Wave", *Preprint #38*, Chernogolovka, Institute of Chemical Physics, ppg. 1-16, (1986).
33. Merzhanov A.G., Borovinskaya I.P., Filonenko A.K., Mukasyan A.S., Blinov M.Y. and Abramov A.P., "SHS Technology of Silicon Nitride and Silicon Carbade Based Ceramic", *Scientific Report*, No. 81.001.234, ppg. 1-76 (1987).
34. Mukasyan A.S., Merzhanov A.G., Martinenko V.M., Borovinskaya I.P., "Coagulation Phenomena during Combustion of Silicon Powder in Nitrogen", *Preprint #59*, Chernogolovka, Institute of Chemical Physics, ppg.1-10 (1986)
35. Mukasyan A.S., Merzhanov A.G., Martinenko V.M., Gal'chenko Yu.A., Borovinskaya I.P., Kudriashov V.A. " Mechanism of Silicon Nitride Structure Formation in Combustion Wave", *Preprint #38*, Chernogolovka, Institute of Chemical Physics, ppg. 1-16, (1986).