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- ✓ Institute of Chemical Physics of National Academy of Sciences of Armenia

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Time Table of SHS-2024

| Time | Monday 09.09 | | Tuesday 10.09 | | Wednesday 11.09 | | Thursday 12.09 | | Friday 13.09 |
|--------------|---|---------------------------------|--|--|---|--|--|--|----------------------|
| | Room 1 | | Room 1 | | Room 1 | | Room 1 | | |
| 9:00 | Registration | | <i>Session 3</i> High entropy materials (1 keynote + 3 oral) | 9:00-9:30 -1 keynote 9:30-9:50 -1 oral 9:50-10:10 -2 oral 10:10-10:30 - 3 oral | <i>Session 7</i> Functional materials: bio, catalytic, energetic, magnetic, electronics, optics, etc. (2 keynote + 9 oral) | 9:00-9:30 -1 keynote 9:30-10:00-2 keynote 10:00-10:20 -1 oral 10:20-10:40 -2 oral 10:40-11:00 - 3 oral 11:00-11:20 – 4 oral 11:20-11:40 – 5 oral 11:40-12:00 – 6 oral 12:00-12:20 – 7 oral 12:20-12:40 -8 oral 12:40-13:00 -9 oral | <i>Session 9</i> Solution combustion synthesis (1 keynote + 6 oral) | 9:00-9:30 -1 keynote 9:30-10:00 -2 keynote 10:00-10:20 - 1 oral 10:20-10:40 – 2 oral 10:40-11:00 – 3 oral 11:00-11:20 – 4 oral 11:20-11:40 – 5 oral | <i>Social events</i> |
| 10:00 | Opening Ceremony 10:00-10:20 | | | 10:30-10:50 Coffee Break | | | | | |
| 10:20 | Plenary Session 1 (4 x 40 min) | 10:20-11:00 -1 | | <i>Session 4</i> Refractory and ultra-high-temperature materials (1 keynote + 5 oral) | | 10:50-11:20 -1 keynote | | | |
| 11:00 | | 11:00-11:40 -2 | | | | 11:20-11:40 - 1 oral | | | |
| 11:40 | | 11:40-12:00 Coffee Break | | | | 11:40-12:00 -2 oral | | | |
| | | 12:00-12:40 -3 | | | | 12:00-12:20 - 3 oral | | | |
| 12:20 | | 12:40-13:20-4 | 12:20-12:40 -4 oral | | | | | | |
| | | | 12:40-13:00 – 5 oral | | | | | | |
| 13:00 | Lunch 13:20-14:20 | | Lunch 13:00-14:00 | | Lunch 13:00-14:00 | | Lunch 12:10-13:10 | | |
| 14:00 | <i>Session 2</i> Scientific School of SHS in Armenia. Achievements and Future Prospects (1 keynote + 4 oral) | 14:20-14:50-1 keynote | <i>Session 5</i> SHS in metallurgy, welding, soldering (1 keynote + 5 oral) | 14:00-14:30-1 keynote | <i>Session 8</i> Kinetics and mechanisms of chemical and structure transformations (1 keynote + 6 oral) | 14:00-14:30 -1 keynote | <i>Session 10</i> SHS in surface engineering (1 keynote +4 oral) | 13:10-13:40 -1 keynote | |
| | | 14:50-15:10 - 1 oral | | 14:30-14:50 - 1 oral | | 14:30-14:50 - 1 oral | | | |
| | | 15:10-15:30 -2 oral | | 14:50-15:10 -2 oral | | 14:50-15:10 -2 oral | | | |
| | | 15:30-15:50 –3 oral | | 15:10-15:20 –3 oral | | 15:10-15:30 – 3 oral | | | |
| | | 15:50-16:10-4 oral | | 15:20-15:30- 4 oral | | 15:30-15:50-4 oral | | | |
| | | | 15:30-15:50 - 5 oral | 15:50-16:10-5 oral | 16:10-16:30-6 oral | 14:40-15:00-4 oral | | | |
| | | | Coffee break - 20 min 15:50-16:10 | | Coffee break - 20 min 16:30-16:40 | | | | |
| 16:10 | <i>Welcome party</i> | | <i>Session 6</i> Consolidation, hybrid and additive technologies (1 keynote+4 oral) | 16:10-16:40-1 keynote | Poster session 16:40 – 18:00 | <i>Banquet</i> | | | |
| | | | | 16:40-17:00- 1 oral | | | | | |
| | | | | 17:00-17:20- 2 oral | | | | | |
| | | | | 17:20-17:40- 3 oral | | | | | |
| | | | | 17:40-18:10- 4 oral | | | | | |

DAY 1: MONDAY, SEPTEMBER 9, 2024

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| 09.00 – 10.00 | Registration: <i>NAS of RA, Conference Hall</i> |
| 10.00 – 10.20 | OPENING CEREMONY |

Session 1: Plenary Session

Session Chairmen: *Aram Papoyan, Mikhail Alymov*

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|---------------|--|
| 10.20 – 11.00 | Plenary lecture <i>Alexander Mukasyan, K. Manukyan and A. Manukyan (USA, Armenia)</i> COMBUSTION SYNTHESIS AND “HOT” DIRECTIONS IN MATERIAL SCIENCE |
| 11.00 – 11.40 | Plenary lecture <i>Mikhail Alymov (Russia)</i> ISMAN: NEW RESULTS AND ACHIEVEMENTS IN SHS |
| 11.40 – 12.00 | |
| 12.00 – 12.40 | Plenary lecture <i>Dmitry Shtansky (Russia)</i> INNOVATIVE APPROACHES TO CREATING BACTERICIDAL SURFACES |
| 12.40 – 13.20 | Plenary lecture <i>Makis Angelakeris (Greece)</i> SYNTHETIC CONTROLS FOR DIVERSE BIOMEDICAL APPLICABILITY SCENARIOS |
| 13.20 – 14.20 | Lunch |

Session 2: Scientific School of SHS in Armenia. Achievements and Future Prospects

Session Chairmen: *Suren Kharatyan, Khachatur Manukyan*

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|---------------|--|
| 14.20 – 14.50 | Keynote lecture <i>Khachatur Manukyan, S. Dolukhanyan, S. Kharatyan, A. Mukasyan, M. Zakaryan (USA, Armenia)</i> HISTORICAL MILESTONES AND RECENT PROGRESS OF COMBUSTION SYNTHESIS AND PROCESSING OF MATERIALS IN ARMENIA |
| 14.50 – 15.10 | <i>S. Aydinyan (Armenia)</i> HIGH ENTROPY MATERIALS IN THE LIGHT OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS |
| 15.10 – 15.30 | <i>M. Zakaryan, K. Nazaretyan, K. Manukyan, S. Kharatyan (Armenia, USA)</i> SYNTHESIS AND AIRFLOW OXIDATION BEHAVIOR OF HAFNIUM CARBIDE |
| 15.30 – 15.50 | <i>T.M. Ayvazyan, V.S. Vardanyan, S. L. Kharatyan, K.V. Manukyan (Armenia, USA)</i> ADVANCED ANALYSIS OF REFRACTORY CARBIDES OXIDATION USING ULTRA-FAST SCANNING ELECTRO-THERMOGRAPHY |
| 15.50 – 16.10 | <i>D. Hambardzumyan, H. Gyulasaryan, A. Kuzanyan, A. Sargsyan, V. Avagyan, A. Manukyan, A.S. Mukasyan (Armenia, USA)</i> INFLUENCE OF EXTERNAL PRESSURE ON SOLUTION COMBUSTION SYNTHESIS AND PHASE EVOLUTION OF THE IRON OXIDES |
| 16.30 – 20.00 | WELCOME PARTY |

DAY 2: TUESDAY, SEPTEMBER 10, 2024

Session 3: High entropy materials

Session Chairmen: *Alexander Rogachev, Vadim Savich*

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|---------------|---|
| 9.00 – 9.30 | Keynote lecture <i>Alexander Rogachev (Russia)</i> SHS OF THE HIGH-ENTROPY ALLOYS, COMPOUNDS AND CERAMIC-METAL COMPOSITES: AN OVERVIEW |
| 9.30 – 9.50 | <i>I.D. Kovalev, S.G. Vadchenko, A.R. Bobojanov, A.S. Rogachev (Russia)</i> FABRICATION OF HIGH-ENTROPY NITRIDE CERAMICS BY COMBUSTION IN NITROGEN OF THE MECHANICAL ALLOYING PRECURSOR TIZRHFTANB |
| 9.50 – 10.10 | <i>H. Kirakosyan, Kh. Nazaretyan, M. Zakaryan, S. Aydinyan, S. Kharatyan (Armenia)</i> COMBUSTION SYNTHESIS OF (TiVCRMO) ₄ ALC ₃ HIGH-ENTROPY MAX PHASE AND ITS TWO DIMENSIONAL DERIVATIVE MXENE |
| 10.10 – 10.30 | <i>S.V. Melkonyan, M.K. Zakaryan, Y.G. Grigoryan, S.V. Aydinyan (Armenia, Estonia)</i> SYNTHESIS OF NOVEL (Ti,Ta,V,Nb,Cr) ₂ ALC HIGH-ENTROPY MAX PHASE AND ITS 2D DERIVATIVE MXENE |
| 10.30 – 10.50 | Coffee Break |

Session 4: Refractory and ultra-high-temperature materials

Session Chairmen: *Evgeny Levashov, Xuanru Ren*

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| 10.50 – 11.20 | Keynote lecture <i>Evgeny Levashov, V.V. Kurbatkina, Yu.S. Pogozhev, A.A. Zaitsev, A.Yu. Potanin (Russia)</i> COMBUSTION SYNTHESIS OF HIGH-TEMPERATURE CERAMICS: FROM SOLID SOLUTIONS TO HETEROPHASE EUTECTIC COMPOSITIONS |
| 11.20 – 11.40 | <i>Xuanru Ren, X. Ji, Y. Chen, Ph.V. Kiryukhantsev-Korneev, E. A. Levashov, P. Feng (China, Russia)</i> HIGH OXIDATION RESISTANT COATING BASED ON SELF-PROPAGATING COMBUSTION SYNTHESIS AND SPARK PLASMA SINTERING TECHNIQUE |
| 11.40 – 12.00 | <i>Yu.S. Pogozhev, A.Yu. Potanin, E.I. Patsera, S.I. Rupasov, E.A. Levashov (Russia)</i> SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF ADVANCED BORIDE-SILICIDE CERAMICS |
| 12.00 – 12.20 | <i>A.P. Amosov, Yu.V. Titova, G.S. Belova, I.A. Uvarova, A.F. Yakubova (Russia)</i> AZIDE SHS OF COMPOSITIONS OF HIGHLY DISPERSED NITRIDE POWDERS WITH CARBIDES |
| 12.20 – 12.40 | <i>D. Moskovkikh, S. Yudin, A. Sedegov, S. Volodko, V. Suvorova, A. Nepapushev (Russia)</i> MEDIUM- AND HIGH-ENTROPY ULTRAHIGH-TEMPERATURE CARBIDES: FABRICATION AND PROPERTIES |
| 12.40 – 13.00 | <i>A.A. Nepapushev, V.S. Suvorova, D.O. Moskovskikh (Russia)</i> SYNTHESIS AND CHARACTERIZATION OF ULTRA-HIGH TEMPERATURE HFCN AND (TA,HF)CN CERAMICS |
| 13.00 – 14.00 | Lunch |

Session 5: SHS in metallurgy, welding, soldering

Session Chairmen: *Aleksandr Amosov, Roberto Rosa*

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|---------------|--|
| 14.00 – 14.30 | Keynote lecture <i>Aleksandr Amosov, E.I. Latukhin, E.R. Umerov (Russia)</i> CERMET FABRICATION BY SHS OF CERAMIC SKELETON WITH SUBSEQUENT SPONTANEOUS INFILTRATION BY MOLTEN METAL |
| 14.30 – 14.50 | <i>R. Rosa (Italy)</i> ENVIRONMENTAL SUSTAINABILITY OF SHS |
| 14.50 – 15.10 | <i>V. I. Yukhvid, D. E Andreev, and V. N. Sanin (Russia)</i> SHS METALLURGY: NEW ALLOYS AND COMPOSITE MATERIALS FOR SCIENCE AND PRODUCTION |
| 15.10 – 15.20 | <i>D.A. Martynov, V.N. Sanin (Russia)</i> THE TECHNOLOGY FOR PRODUCING CAST HIGH-PURITY CHROMIUM BY CENTRIFUGAL SHS METALLURGY |
| 15.20 – 15.30 | <i>D.A. Martynov, V.N. Sanin (Russia)</i> THE PILOT INDUSTRIAL CENTRIFUGAL MACHINE. DEVELOPMENT, PRODUCTION AND SUCCESSFUL APPROBATION FOR PRODUCING CAST MATERIALS BY CENTRIFUGAL SHS METALLURGY |
| 15.30 – 15.50 | <i>A. Liushinskii (Russia)</i> METHODS OF INTENSIFICATION THE PROCESS OF DIFFUSION WELDING HETEROGENEOUS MATERIALS |
| 15.50 – 16.10 | Coffee Break |

Session 6: Consolidation, hybrid and additive technologies: SHS + (SPS, HIP, HP, SLS, shock-assisted etc.)

Session Chairmen: Yongting Zheng, Svetlana Oglezneva

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| 16.10 – 16.40 | <p>Keynote lecture <i>Yongting Zheng, Y. Yu, X. Liu, R. Wang (China)</i> MAKING ULTRA-TOUGH AL₂O₃/ZRO₂ NANOCERAMICS THROUGH COLUMNAR SUBMICROCRYSTALS WITH THREE-LEVEL MICRO-NANO STRUCTURES</p> |
| 16.40 – 17.00 | <p>S.A. Oglezneva (Russia) THE INFLUENCE OF MECHANICAL ACTIVATION ON THE PHYSICAL AND MECHANICAL PROPERTIES OF ALN OBTAINED BY SPARK PLASMA SINTERING</p> |
| 17.00 – 17.20 | <p><i>M.I. Alymov, A.B. Ankudinov, S.I. Averin, V.A. Zelensky, F.F. Galiev (Russia)</i> CALCULATION OF THE MAXIMUM GAS PRESSURE IN A PORE DEPENDING ON THE PORE RADIUS</p> |
| 17.20 – 17.40 | <p><i>A.N. Muranov, A.B. Semenov (Russia)</i> ASSESSMENT OF THE FORMABILITY OF POWDER-POLYMER MIXTURES WITH THE MAIN TYPES OF BINDERS FOR THE PRODUCTION OF METAL PARTS USING PIM TECHNOLOGY</p> |
| 17.40 – 18.10 | <p><i>M.I. Alymov, A.I. Epishin, F.F. Galiev (Russia)</i> GAS PRESSURE IN THE CRITICAL SIZE PORE IN THE COMPACTS OBTAINED BY GAS EXTRUSION OF NICKEL NANOPOWDERS</p> |

DAY 3: WEDNESDAY, SEPTEMBER 11, 2024

Session 7: Functional SHS-materials: bio, catalytic, energetic, magnetic, electronics, optics, etc.

Session Chairmen: *Christopher Shuck, Karen Martirosyan*

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| 9.00 – 9.30 | Keynote lecture <i>Christopher Shuck (USA)</i> CURRENT AND FUTURE OF SHS FOR MAX PHASES AND 2D MXENES |
| 9.30 – 10.00 | Keynote lecture <i>Karen Martirosyan (USA)</i> NANOENERGETIC MATERIALS: RECENT TRENDS AND EMERGING APPLICATIONS |
| 10.00 – 10.20 | <i>C. Italiano, C.W. Moncada Quintero, A. Vita, S. Specchia (Italy)</i> SCALABLE IN-SITU SOLUTION COMBUSTION SYNTHESIS FOR THE PREPARATION OF MULTICHANNEL CERAMIC STRUCTURED CATALYSTS |
| 10.20 – 10.40 | <i>S. Tolendiuly, S. Fomenko and A. Sovet (Kazakhstan)</i> COMBUSTION SYNTHESIS OF YBCO SUPERCONDUCTING COMPOSITES |
| 10.40 – 11.00 | <i>H. Gyulasaryan, D. Hambardzumyan, A. Kuzanyan, A. Sargsyan, V. Avagyan, A. Manukyan and A.S. Mukasyan (Armenia, USA)</i> MAGNETIC HEATING PROPERTIES OF IRON-OXIDE NANOPARTICLES OBTAINED BY SOLUTION COMBUSTION SYNTHESIS |
| 11.00 – 11.20 | <i>A. Saffar Shamshirgar, R. Ivanov, L. Qin, S. Aydiyanyan, I. Hussainova, J. Rosen (Sweden, Estonia, Armenia)</i> (MO ₂ /3Y ₁ /3)2ALC I-MAX PHASE THROUGH SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS |
| 11.20 – 11.40 | <i>W.J. Guo, X.W. Xu, Z.X. Pang, X.P. Cai, B.J. Zhang, F. Akhtar, P.Z. Feng (China, Sweden)</i> LOW-PT NANOPARTICLES-DECORATED MICRO-NANOPOROUS CUOX CONIFEROUS ELECTROCATALYSTS VIA THERMAL EXPLOSION REACTION AND DEALLOYING |
| 11.40 – 12.00 | <i>A.O. Sivakova, A.V.Karpov, A.E. Sychev (Russia)</i> FORMATION OF A TERNARY ALLOY BASED ON CU-MN-AL SYSTEM UNDER HIGH-TEMPERATURE SYNTHESIS CONDITIONS: COMBUSTION, STRUCTURE AND PHASE FORMATION AND THERMOELECTRIC PROPERTIES |
| 12.00 – 12.20 | <i>N.P. Cherezov, M.I. Alymov, A.B. Ankudinov, V.A. Zelenskiy², V.S. Erasov, V.S. Shustov, I.V. Saikov (Russia)</i> APPLICATION OF TiH ₂ POWDER PRODUCED BY THE SHS METHOD TO THE PREPARATION OF POROUS TITANIUM AND STUDY OF ITS MECHANICAL PROPERTIES |

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| 12.20 – 12.40 | S.A. Seropyan, A.Yu. Malakhov, I.V. Denisov, A.V. Smirnov (Russia) PREPARATION OF NIAL-STEEL GRADED COMPOSITE DURING SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS |
| 12.40 – 13.00 | L. Farsiyan, J. Tumoyan, Sh. Kazaryan, A. Arsenyan, A. Hovhannisyan (Armenia) PROPERTIES OF BIOCOMPATIBLE IRON OXIDE 'CORE-SHELL' TYPE NANOPARTICLES OBTAINED WITH CAMELLIA SINENSIS EXTRACTS |
| 13.00 – 14.00 | Lunch |

Session 8: Kinetics and mechanisms of chemical and structure transformations

Session Chairmen: *Aliaksandr Ilyushchanka, Hayk Nersisyan*

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| 14.00 – 14.30 | <p>Keynote lecture <i>Aliaksandr. Ph. Ilyushchanka, T.L. Talako, Yu. A. Reutenok, A.I. Letsko (Belarus)</i> POWDERS BASED ON TITANIUM DIBORIDE AND CARBIDE FOR WEAR-RESISTANT THERMAL SPRAY COATINGS OBTAINED BY MECHANICALLY ACTIVATED SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS</p> |
| 14.30 – 14.50 | <p><i>A. Yu. Dolgoborodov, A.N. Streletskii, T.I. Borodina, V. G. Kirilenko, B.D. Yankovskii1, G.E. Valyano (Russia)</i> FEATURES OF MECHANICAL ACTIVATION OF AL+CUO THERMITE MIXTURE</p> |
| 14.50 – 15.10 | <p><i>A.Yu. Potanin, E.A. Bashkirov, E.A. Levashov (Russia)</i> ADVANCED SHS TECHNOLOGY FOR THE PRODUCTION OF A NOVEL PROMISING CLASS OF MAB PHASE BASED MATERIALS</p> |
| 15.10 – 15.30 | <p><i>E.I. Patsera, N.A. Kochetov, D.Yu. Kovalev, E.A. Levashov (Russia)</i> MECHANICALLY ACTIVATED SHS OF HIGH ENTROPY SILICIDES: MECHANISMS OF COMBUSTION AND STRUCTURE FORMATION</p> |
| 15.30 – 15.50 | <p><i>A. Margaryan, A. Aprahamian, V. Kakoyan, S. Zhamkochyan, S. Abrahamyan, A. Ghalumyan, H. Elbakyan, A. Kakoyan, H. Rostomyan, A. Safaryan, G. Sughyan, J. Annand, K. Livingston, R. Montgomery, P. Achenbach, J. Pochodzalla, D. L. Balabanski, S. N. Nakamura, V. Sharyy, D. Yvon, K. Manukyan (Armenia, UK, USA, Germany, Romania, Japan, France, USA)</i> TIME RESOLVED PHOTOEMISSION SPECTROMETER</p> |
| 15.50 – 16.10 | <p><i>H. Nersisyan, J. Hyeon Lee (Korea)</i> SHS SYNTHESIS OF MICRO- AND NANOCRYSTALS EXPOSED WITH FACETS: THE FORMATION MECHANISM AND APPLICATION NOTES</p> |
| 16.10 – 16.30 | <p><i>V. G. Kirilenko, A. Yu. Dolgoborodov, M.A. Brazhnikov (Russia)</i> FAST REACTION PROPAGATION IN NANOTHERMITES</p> |
| 16.30 – 16.40 | Coffee Break |
| 16.30 – 18.00 | Poster Session |

DAY 4: THURSDAY, SEPTEMBER 12, 2024

Session 9: Solution combustion synthesis

Session Chairmen: *Zulhair Mansurov, Alexander Mukasyan*

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| 9.00 – 9.30 | Keynote lecture <i>Khachatur Manukyan (USA)</i> FUNDAMENTALS AND APPLICATIONS OF SOLUTION COMBUSTION SYNTHESIS |
| 9.30 – 10.00 | Keynote lecture <i>Zulhair A. Mansurov, A. Keneshbekova, G.T. Smagulova (Kazakhstan)</i> PRODUCTION OF METAL OXIDES BY SOLUTION COMBUSTION METHOD |
| 10.00 – 10.20 | <i>A.G. Bannov, T.S. Gudyma, P.B. Kurmashov (Russia)</i> SOLUTION COMBUSTION SYNTHESIS OF NI-CONTAINING CATALYSTS FOR DECOMPOSITION OF METHANE |
| 10.20 – 10.40 | <i>M. Werle van der Merwe, G. Ercolino, P. Kooyman, S. Roberts, J.V. Fletcher, N. Luchters, J. Fletcher, S. Specchia (Russia, Germany)</i> WATER GAS SHIFT ACTIVITY OF PT/CEO ₂ PREPARED BY SOLUTION COMBUSTION SYNTHESIS: INFLUENCE OF THE SYNTHESIS PARAMETERS |
| 10.40 – 11.00 | <i>D.A. Permin, S.S. Balabanov, V.A. Koshkin, L.A. Ketkova, O.V. Timofeev (Russia)</i> IR-TRANSPARENT MGO-RE ₂ O ₃ (RE = Y,GD,LU,SC) CERAMIC COMPOSITES |
| 11.00 – 11.20 | <i>Zh. S. Yermekova, E. V. Chernyshova, S. S. Yurlov, S. I. Roslyakov, S.N. Yudin (Russia)</i> THE MODIFICATION OF THE ZNO STRUCTURE DURING THE SPRAY SOLUTION COMBUSTION PROCESS FOR LATER USE IN THE FABRICATION OF MATERIALS WITH THERMOELECTRIC PROPERTIES |
| 11.20 – 11.40 | <i>N.S. Sisakyan, G.N. Chilingaryan, H. Gyulasaryan, A. Manukyan, A.S. Mukasyan (Armenia, USA)</i> INFLUENCE OF THE COMBUSTION MODE ON THE MICROSTRUCTURE AND PROPERTIES OF THE NI-BASED MATERIALS |
| 12.10 – 13.10 | LUNCH |

Session 10: SHS in surface engineering

Session Chairmen: *Peizhong Feng, Dmitry Shtansky*

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| 13.10 – 13.40 | Keynote lecture <i>X. Wang, X. Wang, X. Ren, Ph. V. Kiryukhantsev-Korneev, E. A. Levashov, Peizhong Feng (China, Russia)</i> PREPARATION AND 1000-1600 °C HIGH-TEMPERATURE ANTI-OXIDATION MECHANISM OF MOSI ₂ -BASED COMPOSITE COATING BY DOPING ZRB ₂ -SiC ON NB SUBSTRATE |
| 13.40 – 14.00 | Ph.V. Kiryukhantsev-Korneev, A.D. Chertova, S.I. Rupasov, P. Feng, X. Ren, E.A. Levashov (Russia, China) NEW GENERATION OF SHS-MATERIALS FOR HIGH POWER IMPULSE MAGNETRON SPUTTERING AND SPARK PLASMA SINTERING OF OXIDATION RESISTANT COATINGS |
| 14.00 – 14.20 | X. Ji, X. Ren, Y. Chen, Ph.V. Kiryukhantsev-Korneev, E. A. Levashov, P. Feng (China, Russia) ENHANCED OXIDATION RESISTANCE OF ZRB ₂ -MOSI ₂ COATING THROUGH MOSI ₂ -TASI ₂ DOUBLE-SILICIDE ALLOYING MODIFYING |
| 14.20 – 14.40 | M.I. Petrzhik, S.K. Mukanov, A.E. Kudryashov, X. Ren, P. Feng, E.A. Levashov (Russia, China) IN SITU PHASE FORMATION AT ELECTRIC SPARK TREATMENT OF METALLIC ALLOYS |
| 14.40 – 15.00 | A.D. Chertova, Yu.A. Vypritskaya, F.I. Chudarin, E.I. Patsera, E.A. Levashov, Ph.V. Kiryukhantsev-Korneev (Russia) INFLUENCE OF COMPOSITION ON THE STRUCTURE AND PROPERTIES OF HEA-SI-B-C-N COATINGS DEPOSITED BY DCMS AND HIPIMS METHODS USING SHS-TARGETS |

Poster session participants

1. NACRE-LIKE (V,ZR,TA,NB,MO)₂ALC/AL₂O₃ HIGH-ENTROPY CERAMIC COMPOSITE BY SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS
L. Minasyan, S. Aydinyan, I. Hussainova (Armenia, Estonia)
2. SYNTHESIS OF IRON NITRIDE POWDER IN THE MODE OF THERMALLY COUPLED SHS PROCESS
E.I. Volchenko, T.V. Barinova, M.I. Alymov (Russia)
3. STRUCTURE AND PROPERTIES OF ZR-B-C, TI-B-C, AND ZR-TI-B-C HARD FILMS DEPOSITED BY MAGNETRON SPUTTERING USING COMPOSITE SHS- TARGETS BASED ON BORIDE-CARBIDE EUTECTIC COMPOSITIONS
Ph.V. Kiryukhantsev-Korneev, A.D. Chertova, I.O. Vakhrusheva, A.Yu. Potanin, Yu.S. Pogozhev, E.A. Levashov (Russia)
4. INVESTIGATION OF THE EFFECT OF SILICON CONTENT ON THE CHARACTERISTICS OF SHS COMPOSITIONS SI₃N₄-YB₂O₃
I.A. Shibakov, V.V. Zakorzhevsky (Russia)
5. DESIGN AND COMBUSTION SYNTHESIS OF NICOCRMNALB & NICOCRMNALC SYSTEMS
A. Zurnachyan, A. Ginosyan, S. Aydinyan (Armenia, Estonia)
6. PREPARATION OF CERAMIC MATERIALS BASED ON TI-B-C-N SYSTEM BY SHS-COMPACTION AND INFLUENCE OF MECHANOACTIVATION ON SYNTHESIS PARAMETERS AND PHYSICAL-MECHANICAL AND OPERATIONAL PROPERTIES
Z. Aslamazashvili, G. Zakharov, G. Mikaberidze, M.Chikhradze, N. Aslamazashvili, D. Kvashvadze (Georgia)
7. SPECIFIC OF PLASTIC DEFORMATION LOCALISATION IN CYLINDRICAL BRONZE SAMPLES UNDER IMPACT LOADING
V.O. Kopytskiy, E.V. Petrov (Russia)
8. INVESTIGATION OF THE INFLUENCE OF MECHANICAL ACTIVATION AND IMPURITY GAS RELEASE ON MACROKINETIC COMBUSTION PATTERNS OF THE TI-C-B SYSTEM FOR GRANULAR AND POWDER MIXTURES
D.S. Vasilyev, B.S. Seplyarskii, N.A. Kochetov (Russia)
9. SHS OF ADVANCED CERAMICS BASED ON MOALB
E.A. Bashkirov, A.Yu. Potanin, E.A. Levashov (Russia)
10. STRUCTURE AND COMPOSITION OF MATERIALS SYNTHESIZED FROM MECHANOACTIVATED CHASMS OF TI-BN, TI-BN-C, TI-B₄C COMPOSITION BY SHS COMPACTION
Z. Aslamazashvili, G. Zakharov, G. Mikaberidze, M. Chikhradze, N. Aslamazashvili, D. Kvashvadze (Georgia)
11. SYNTHESIS OF CAST REFRACTORY HIGH-ENTROPY ALLOYS USING CENTRIFUGAL SHS METALLURGY AND PRODUCTION OF OXIDE-FIBRE/ALLOY MATRIX COMPOSITES BASED ON THEM
V.N. Sanin, D.M. Ikornikov, O.A. Golosova, A.O. Sivakova, S.T. Mileiko (Russia)
12. COMBUSTION SYNTHESIS OF CERMETS FROM GRANULAR MIXTURES TI+C-NICR
N. I. Abzalov, B. S. Seplyarskii, R. A. Kochetkov, T. G. Lisina (Russia)

13. SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF THERMOELECTRIC MATERIAL BASED ON CU₂SE WITH SIC DOPING
G.R. Nigmatullina, D.Yu. Kovalev (Russia)
14. STRUCTURE AND PROPERTIES OF SHS- SOLID SOLUTIONS (HF1-XTAX)B₂
V.V. Kurbatkina, E.I. Patsera, P.A., Loginov, E.A. Levashov (Russia)
15. THERMAL ANALYSIS TECHNIQUES IN STUDY OF MECHANISM AND KINETICS OF SOLUTION COMBUSTION SYNTHESIS
Y.G. Grigoryan, L.A. Abovyan, A.B. Harutyunyan (Armenia)
16. MECHANICAL AND THERMAL PROPERTIES OF ZRN REINFORCED ALSI10MG-BASED MATRIX COMPOSITES
V.S. Suvorova, S.V. Chernyshikhin (Russia)
17. INFLUENCE OF RELATIVE DENSITY OF CHARGE BILLETS ON TEMPERATURE AND BURNING RATE OF TI-C-NICRALY AND TI-C-NICRAL COMPOSITIONS AND COMPARISON WITH TI-C-NICR
A.S. Ivanov, A.M. Stolin, M.S. Antipov (Russia)
18. DEVELOPMENT OF ENERGY-EFFICIENT TECHNOLOGY FOR ZIRCONIUM POWDER PRODUCTION USING SHS METHOD
A.O. Kirillov, N.P. Cherezov (Russia)
19. FEATURES IN LOW-TEMPERATURE ELECTRICAL RESISTIVITY OF THE HIGH-ENTROPY SINGLE-CRYSTALLINE (BI₂/3SB₁/3)₂(TE₂/5SE₂/5S₁/5)₃ ALLOY
O. Ivanov, M. Yaprintsev, E. Yaprintseva, T. Nikulicheva, A. Vasil'ev (Russia, Armenia)
20. SHS METALLURGY OF CAST MOLYBDENUM CARBIDES UNDER GAS PRESSURE
O.M. Miloserdova, P.A. Miloserdov, V.I. Yuhvid (Russia)
21. USE OF SURFACE-LOCALIZED SELF-PROPOGATING HIGH-TEMPERATURE SYNTHESIS (SHS) TO PRODUCE A POROUS PERMEABLE COMPOSITE MATERIAL BASED ON TITANIUM SPONGE POWDER
A.Ph. Ilyushchanka, V.V. Savich, R.P. Golodok, A.M. Taraykovich, O.O. Kuznechik (Belarus)
22. THE MECHANISM OF FORMATION OF A "FINGER" DURING THE COMBUSTION OF A GRANULAR MIXTURE OF ZR+0.5C IN THE ARGON STREAM
B.S. Seplyarskii, R.A. Kochetkov, T.G. Lisina, D.S. Vasilyev (Russia)
23. SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS FOR PRODUCING 2D BI, SB-CHALCOGENIDE BASED MATERIALS AND THEIR SOLID SOLUTION FOR FUNCTIONAL APPLICATIONS
A. Vasil'ev (Armenia)
24. FEATURES IN MICROSTRUCTURE AND ELECTRIC PROPERTIES OF THE COMPOSITE CONSISTING OF MATRIX MEDIUM-ENTROPY BISBTE1.5SE1.5 ALLOY AND CARBON NANOTUBES FILLER
M. Yaprintsev, E. Yaprintseva, O. Ivanov, A. Vasil'ev (Russia, Armenia)
25. THERMOELECTRIC PROPERTIES OF HIGH-ENTROPY (BI₂/3SB₁/3)₂(TE₂/5SE₂/5S₁/5)₃ ALLOY PREPARED BY SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS
E. Yaprintseva, A. Vasil'ev, M. Yaprintsev, O. Ivanov (Russia, Armenia)

26. THERMAL STABILITY OF OXIDATION-RESISTANT
MOTANBHFZR-SI-B COATINGS UNDER IN SITU TEM HEATING
*F. I. Chudarin, A. D. Chertova, D. A. Sidorenko, E. A. Levashov, Ph. V. Kiryukhantsev-
Korneev (Russia)*
27. EFFECT OF HIGH HEATING RATE ON THE FORMATION OF TAC
Kh. Nazaretyan, H. Kirakosyan (Armenia)
28. THE SPARK PLASMA SINTERING OF MAGNETIC (COZNFEMNNI)O HIGH ENTROPY
OXIDE SYNTHESIZED BY SCS METHOD
H. Kirakosyan, A. Sargsyan, M. Zakaryan, S. Aydinyan, S. Kharatyan (Armenia)
29. SHS OF MAX PHASES BASED ON (CR1-XMNX)2ALC AND A CAPILLARY INTERACTION
WITH COPPER MELTS
V.A. Gorshkov, S.N. Zhevnenko (Russia)
30. COMPOSITE RODS BY METHOD COMBINING SHS AND HOT GAS EXTRUSION OF
REACTIVE POWDER MIXTURE NI-AL AND MG-B
F.F. Galiev, V.D. Berbentsev, K.S. Pervakov, V.A. Vlasenko, I.V. Saikov, M.I. Alymov (Russia)
31. SHS OF ADVANCED HIGH-STRENGTH TITANIUM ALLOY FOR LASER POWDER BED
FUSION
P.A. Loginov, G.M. Markov, E.A. Levashov (Russia)
32. SYNTHESIS OF TITANIUM NITRIDE BY COMBUSTION IN A REACTOR WITH A
CONTROLLED FEED OF REAGENTS
A.V. Linde, V.V. Grachev (Russia)
33. STUDY OF STRUCTURE OF ALMG6-STAINLESS STEEL WELD INTERFACE AFTER
EXPLOSIVE AND DIFFUSION WELDING
N. Niyozbekov, A. Malakhov, I. Denisov, I. Saikov, V. Tkachenko (Russia)
34. BIOLOGICAL AND PHYSICAL PROPERTIES OF NEWLY SYNTHESIZED NI-FE
PLASMONIC NANOPARTICLES
*M. Galstyan, L. Farsiyan, L. Rshtuni, S. Ohanyan, H.T. Gyulasaryan, A. Manukyan,
A. Hovhannisyan (Armenia)*
35. COMBUSTION SYNTHESIS AND SINTERING OF SINGLE-PHASE ALUMINUM
OXYNITRIDE ALON
T.G. Akopdzhanyan, D.I. Abzalov (Russia)
36. SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF LIGHT ALLOYS IN THE TI-
AL-MG SYSTEM
P.A. Lazarev, A.E. Sytshev, O.D. Boyarchenko (Russia)
37. INVESTIGATION OF MGALON SYNTHESIS PROCESSES IN THE MODE OF SELF-
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D. Abzalov (Russia)
38. SHS OF COMPOSITE MATERIAL OF 3NI-AL MECHANICALLY ACTIVATED PARTICLES
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V.E. Loryan, M.A. Ponomaryev, N.A. Kochetov (Russia)
39. PULSED ELECTROSPARK DEPOSITION OF PROTECTIVE COATINGS USING V2ALC-
BASED SHS-ELECTRODE
*E.I. Zamulaeva, E.A. Levashov, E.A. Bashkirov, Yu. Yu. Kaplanskii, A.N. Sheveyko, V.A.
Gorshkov (Russia)*

40. SYNTHESIS OF V₂ALC CERAMICS BY SHS USING VO₂ AS A STARTING MATERIAL
D.Yu. Kovalev, V.I. Vershinnikov (Russia)
41. THERMOELECTRIC PROPERTIES OF HEUSLER ALLOYS CO₂TIAL SYNTHESIZED BY SHS METALLURGY
M. L. Busurina, A.V. Karpov, D.E. Andreev, A.E. Sytshev (Russia)
42. MA-SHS CONSOLIDATION OF (TI,ZR)C SOLID SOLUTIONS
I.E. Semenchuk, V.A. Shcherbakov, A.N. Gryadunov (Russia)
43. THE INFLUENCE OF STRETCHING AND COMPRESSION OF THE REACTION ZONE ON THE STABILITY OF THE FILTRATION FRONT
P.M.Krishenik, S.A.Rogachev, S.V. Kostin (Russia)
44. MODIFICATION BY ALUMINUM NITRIDE NANOSIZED PARTICLES OF MATERIALS BASED ON THE TI-B-FE SYSTEM PRODUCED BY SHS EXTRUSION
A.V. Bolotskaia, M.V. Mikheev, P.M. Bazhin, A.M. Stolin (Russia)
45. SYNTHESIS OF CAST CHROMIUM-CONTAINING MASTER ALLOYS WITH MO, W AND AL BY CENTRIFUGAL SHS METALLURGY
A.N. Kubanova, D.M. Ikornikov, D.A. Martynov, V.N. Sanin (Russia)
46. PREPARATION OF FETI ALLOYS BY ELECTROMETALLURGY AND CENTRIFUGAL SHS-METALLURGY FOR METAL-HYDRIDE TECHNOLOGIES
V.V. Sanin, S.A. Melniko, V.N. Sanin, Solntseva E.B (Russia)
47. ENHANCED METHANE REDUCTION OF NICKEL OXIDE THROUGH HYDROGEN PRETREATMENT: KINETIC AND MORPHOLOGICAL INSIGHTS
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48. SYNTHESIS OF EXPERIMENTAL SMALL-TONNAGE BATCHES OF NICKEL B-ALLOYS BY CENTRIFUGAL SHS CASTING AND INFLUENCE OF THE SCALE FACTOR ON THE STRUCTURE AND PROPERTIES
V.V. Sanin, M.I. Aheiev, V.N. Sanin, E.A. Levashov (Russia)
49. OBTAINING MAGNETIC – ABRASIVE POWDER MATERIALS BASED ON TI-C-FE SYSTEM BY SHS – GRINDING METHOD
M.V. Mikheev, A.V. Bolotskaia, A.M. Stolin, P.M. Bazhin (Russia)
50. STRUCTURE AND PROPERTIES OF PROTECTIVE ELECTROSPARK COATINGS OBTAINED USING ZRSI₂-MOSI₂-ZRB₂ AND HFSI₂-MOSI₂-HFB₂ SHS-ELECTRODES
A. E. Kudryashov, E. I. Zamulaeva, S. K. Mukanov, M. I. Ageev, A. D. Chertova, E. A. Levashov (Russia)
51. STUDY OF THE BARRIER SURFACE LAYER AFTER HIGH-ENERGY POWDER PARTICLE IMPACT
E.V. Petrov, V.O. Kopytskiy, V.S. Trofimov (Russia)
52. HIGH-ENTROPY COATINGS FOR PROTECTION OF STEEL STRUCTURES OF MARINE AND COASTAL INFRASTRUCTURE
M. N. Fatykhova, K. A. Kuptsov, A. N. Sheveyko, D. V. Shtansky (Russia)
53. STRUCTURE AND PROPERTIES OF TI-AL-C COATINGS DEPOSITED BY DCMS AND HIPIMS USING A TI₂ALC TARGET
Yu.A. Vypritskaya, A.D. Chertova, P. Feng, X. Ren, E.A. Levashov, Ph.V. Kiryukhantsev-Korneev (Russia, China)

54. SHS OF HIGH-ENTROPY ALLOYS FOR THE PRODUCTION OF MULTIFUNCTIONAL CATALYSTS
Ks. A. Romazeva, E.V. Pugacheva, S. Ya. Zhuk, I. M. Bystrova, D. M. Ikornikov, V.N. Sanin, V. N. Borshch (Russia)
55. PREPARATION OF SILICON CARBIDE FROM SILICON POWDERS AND SOOT
N.S. Shibakova (Russia)
56. OPOKA SUPPORTED CO-NI AND CO-MN CATALYSTS PRODUCED BY LOW-TEMPERATURE COMBUSTION
R.I. Jussupkaliyeva, S. I. Pomogailo, E.V. Pugacheva, I. M. Bystrova, V. N. Borshch (Kazakhstan, Russia)
57. SYNTHESIS AND STUDY OF CATALYSTS ON TIB₂ AND TICB SUPPORTS WITH NI, NICO AND CO₂ ACTIVE PHASE
E.V. Pugacheva, S. Ya. Zhuk, R.A. Kochetkov, N.I. Abzalov, B.S. Seplyarskii, V.N. Borshch (Russia)
58. FORMATION, STRUCTURE AND PHASE COMPOSITION LAYERED COMPOSITE MATERIALS BASED ON TIB-TI AND TNM ALLOY
M.S. Antipov, P.M. Bazhin, A.P. Chizhikov, A.S. Konstantinov, A.D. Bazhina, A.S. Ivanov, A.M. Stolin (Russia)
59. SHS OF PYROCHLORE TYPE CERAMIC MATRICES FOR IMMOBILIZATION OF ACTINIDE-CONTAINING NUCLEAR WASTE
T.V. Barinova, V. A. Shcherbakov, A. V. Shcherbakov, V.Yu. Barinov, V.N. Semenova (Russia)
60. STRUCTURAL MACROKINETICS OF COMBUSTION OF GRANULAR SHS MIXTURES BASED ON TITANIUM
B. S. Seplyarskii, R. A. Kochetkov, and T. G. Lisina (Russia)
61. THE RHEOLOGICAL BEHAVIOR OF SHS POWDER COMPOUNDS WITH THIXOTROPIC PROPERTIES DURING COLD UNIAXIAL PRESSING
O. Averichev, A. Stolin (Russia)
62. SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF A CO₂-BASED COMPOSITE MATERIAL
A.O. Zhidovich, A.P. Chizhikov (Russia)
63. PREPARATION OF W-CU PSEUDOALLOY BY COMBINING OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS AND INFILTRATION
V.Yu. Barinov, S.S. Manokhin, A.E. Ligachev, Yu.R. Kolobov (Russia)
64. THE INFLUENCE OF MECHANICAL ACTIVATION ON THE SUPERCONDUCTING PROPERTIES OF YBCO OBTAINED BY COMBUSTION METHOD
S. Fomenko, S.Tolendiuly and A. Sovet (Kazakhstan)
65. SALT ASSISTED SOLUTION COMBUSTION SYNTHESIS OF NI/NIO NANOPOWDERS WITH ENHANCED SPECIFIC SURFACE AREA
Sisakyan N.S., Chilingaryan G.N., Avagyan V., Manukyan A., Mukasyan A.S. (Armenia, USA)
66. SHS OF ULTRA-HIGH TEMPERATURE BORIDE-CARBIDE CERAMICS IN THE HFB₂-HFC SYSTEM
I.O. Vakhrusheva, A.A. Zaitsev, Yu.S. Pogozhev, A.Yu. Potanin, E.A. Levashov (Russia)

67. THE KINETICS AND MECHANISM OF SOLUTION COMBUSTION SYNTHESIS IN
NI(NO₃)₂ + HEXAMETHYLENETETRAMINE AND CO(NO₃)₂ +
HEXAMETHYLENETETRAMINE SYSTEMS

N.H. Amirkhanyan, M.K. Zakaryan, S.L. Kharatyan, K.V. Manukyan (Armenia, USA)

68. THE INFLUENCE OF TECHNOLOGICAL PARAMETERS OF MAGNETRON SPUTTERING
ON THE STRUCTURE AND PROPERTIES OF FILMS OF A HIGH-ENTROPY ALLOY OF
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M.V. Poliakov, D.Yu. Kovalev, S.G. Vadchenko, L.S Volkova, A.S Rogachev (Russia)

69. SYNTHESIS AND INVESTIGATION OF NOVEL HAFNIUM-ZIRCONIUM CARBONITRIDE
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PROPERTIES AND OXIDATION BEHAVIOR

V.S. Suvorova, A.A. Nepapushev, D.O. Moskovskikh (Russia)