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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)	<b>9:00-9:30 -1 keynote</b> 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)	<b>9:00-9:30 -1 keynote</b> <b>9:30-10:00-2 keynote</b> 10:00-10:20 -1 oral 10:20-10:40 -2 oral 10:40-11:00 - 3 oral 11:00-11:20 – 4 oral <b>11:20-11:40 Coffee Break</b> 11:40-12:00 – 5 oral 12:00-12:20 – 6 oral 12:20-12:40 – 7 oral 12:40-13:00 -8 oral 13:00-13:20 -9 oral	<i>Session 9</i> Solution combustion synthesis (1 keynote + 6 oral)	<b>9:00-9:30 -1 keynote</b> 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	<b>Opening Ceremony 10:00-10:20</b>			10:30-10:50 Coffee Break								
10:20	Plenary Session 1 (4 x 40 min)	<b>10:20-11:00 -1</b>		<i>Session 4</i> Refractory and ultra-high-temperature materials (1 keynote + 5 oral)		<b>10:50-11:20 -1 keynote</b>						
11:00		<b>11:00-11:40 -2</b>				11:20-11:40 - 1 oral						
11:40		<b>11:40-12:20 -3</b>				11:40-12:00 -2 oral		12:00-12:20 - 3 oral		12:20-12:40 -4 oral	12:40-13:00 – 5 oral	
12:20		<b>12:20-13:00-4</b>										
<b>13:00</b>	<b>Lunch 13:00-14:00</b>		<b>Lunch 13:00-14:00</b>		<b>Lunch 13:20-14:20</b>		<b>Lunch 12:10-13:10</b>					
14:00	<i>Session 2</i> Scientific School of SHS in Armenia. Achievements and Future Prospects (1 keynote + 4 oral)	<b>14:00-14:30-1 keynote</b>	<i>Session 5</i> SHS in metallurgy, welding, soldering (1 keynote + 5 oral)	<b>14:00-14:30-1 keynote</b>	<i>Session 8</i> Kinetics and mechanisms of chemical and structure transformations (1 keynote + 6 oral)	<b>14:20-14:50 -1 keynote</b>	<i>Session 10</i> SHS in surface engineering (1 keynote +4 oral)	<b>13:10-13:40 -1 keynote</b>				
		14:30-14:50 - 1 oral		<b>14:30-5:00 - 2 keynote</b>		14:50-15:10 - 1 oral		13:40-14:00 - 1 oral				
		14:50-15:10 -2 oral		15:00-15:20 -1 oral		15:10-15:30 -2 oral		14:00-14:20 -2 oral				
		15:10-15:30 –3 oral		15:20-15:30 –2 oral		15:30-15:50 – 3 oral		14:20-14:40 -3 oral				
		15:30-15:50-4 oral		15:30-15:40- 3 oral		15:50-16:10-4 oral		14:40-15:00-4 oral				
		15:40-16:00 - 4 oral	16:10-16:30-5 oral	16:30-16:50-6 oral								
			<b>Coffee break - 20 min 16:00-16:20</b>		<b>Coffee break - 20 min 16:50-17:00</b>							
16:00	<i>Welcome party</i>		<i>Session 6</i> Consolidation, hybrid and additive technologies (1 keynote+4 oral)	<b>16:20-16:50-1 keynote</b>	Poster session 17:00 – 18:40		<i>Banquet</i>					
		16:50-17:10- 1 oral										
		17:10-17:30- 2 oral										
		17:30-17:50- 3 oral										
			17:50-18:10- 4 oral									

## DAY 1: MONDAY, SEPTEMBER 9, 2024

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

### Session 1: Plenary Session

**Session Chairmen:** *Aram Papoyan, Mikhail Alymov*

10.20 – 11.00	<b>Plenary lecture</b> <i>Alexander Mukasyan, K. Manukyan and A. Manukyan (USA, Armenia)</i> COMBUSTION SYNTHESIS AND “HOT” DIRECTIONS IN MATERIAL SCIENCE
11.00 – 11.40	<b>Plenary lecture</b> <i>Mikhail Alymov (Russia)</i> ISMAN: NEW RESULTS AND ACHIEVEMENTS IN SHS
11.40 – 12.20	<b>Plenary lecture</b> <i>Dmitry Shtansky (Russia)</i> INNOVATIVE APPROACHES TO CREATING BACTERICIDAL SURFACES
12.20 – 13.00	<b>Plenary lecture</b> <i>Makis Angelakeris (Greece)</i> SYNTHETIC CONTROLS FOR DIVERSE BIOMEDICAL APPLICABILITY SCENARIOS
13.00 – 14.00	<b>Lunch</b>

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

Session Chairmen: *Suren Kharatyan, Khachatur Manukyan*

14.00 – 14.30	<b>Keynote lecture</b> <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
14.30 – 14.50	<i>S. Aydinyan (Armenia)</i> HIGH ENTROPY MATERIALS IN THE LIGHT OF SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS
14.50 – 15.10	<i>M. Zakaryan, N. Amirkhanyan, K. Manukyan, S. Kharatyan (Armenia, USA)</i> SOLUTION COMBUSTION SYNTHESIS OF Ni <sub>3</sub> CuN COMPLEX NITRIDE: REACTION MECHANISM
15.10 – 15.30	<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
15.30 – 15.50	<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
16.00	<b>WELCOME PARTY</b>

## DAY 2: TUESDAY, SEPTEMBER 10, 2024

### Session 3: High entropy materials

Session Chairmen: *Alexander Rogachev, Vadim Savich*

9.00 – 9.30	<b>Keynote lecture</b> <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) <sub>4</sub> ALC <sub>3</sub> 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) <sub>2</sub> ALC HIGH-ENTROPY MAX PHASE AND ITS 2D DERIVATIVE MXENE
10.30 – 10.50	<b>Coffee Break</b>

## Session 4: Refractory and ultra-high-temperature materials

Session Chairmen: *Evgeny Levashov, Xuanru Ren*

10.50 – 11.20	<b>Keynote lecture</b> <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	<b>Lunch</b>

## Session 5: SHS in metallurgy, welding, soldering

**Session Chairmen:** *Aleksandr Amosov, Roberto Rosa*

14.00 – 14.30	<b>Keynote lecture</b> <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 – 15.00	<b>Keynote lecture</b> <i>Roberto Rosa (Italy)</i> ENVIRONMENTAL SUSTAINABILITY OF SHS
15.00 – 15.30	<i>V. I. Yukhvid, D. E Andreev, and V. N. Sanin (Russia)</i> SHS METALLURGY: NEW ALLOYS AND COMPOSITE MATERIALS FOR SCIENCE AND PRODUCTION
15.20 – 15.30	<i>D.A. Martynov, V.N. Sanin (Russia)</i> THE TECHNOLOGY FOR PRODUCING CAST HIGH-PURITY CHROMIUM BY CENTRIFUGAL SHS METALLURGY
15.30 – 15.40	<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
15.40 – 16.00	<i>A. Liushinskii (Russia)</i> METHODS OF INTENSIFICATION THE PROCESS OF DIFFUSION WELDING HETEROGENEOUS MATERIALS
16.00 – 16.20	<b>Coffee Break</b>

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

**Session Chairmen: *Yongting Zheng, Svetlana Oglezneva***

16.20 – 16.50	<p><b>Keynote lecture</b>  <i>Yongting Zheng, Y. Yu, X. Liu, R. Wang (China)</i>            MAKING ULTRA-TOUGH AL<sub>2</sub>O<sub>3</sub>/ZRO<sub>2</sub> NANOCERAMICS THROUGH COLUMNAR SUBMICROCRYSTALS WITH THREE-LEVEL MICRO-NANO STRUCTURES</p>
16.50 – 17.10	<p><b>S.A. Oglezneva (Russia)</b>            THE INFLUENCE OF MECHANICAL ACTIVATION ON THE PHYSICAL AND MECHANICAL PROPERTIES OF ALN OBTAINED BY SPARK PLASMA SINTERING</p>
17.10 – 17.30	<p><b>M.I. Alymov, A.B. Ankudinov, S.I. Averin, V.A. Zelensky, F.F. Galiev (Russia)</b>            CALCULATION OF THE MAXIMUM GAS PRESSURE IN A PORE DEPENDING ON THE PORE RADIUS</p>
17.30 – 17.50	<p><b>A.N. Muranov, A.B. Semenov (Russia)</b>            ASSESSMENT OF THE FORMABILITY OF POWDER-POLYMER MIXTURES WITH THE MAIN TYPES OF BINDERS FOR THE PRODUCTION OF METAL PARTS USING PIM TECHNOLOGY</p>
17.50 – 18.10	<p><b>M.I. Alymov, A.I. Epishin, F.F. Galiev (Russia)</b>            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*

9.00 – 9.30	<b>Keynote lecture</b> <i>Christopher Shuck (USA)</i> CURRENT AND FUTURE OF SHS FOR MAX PHASES AND 2D MXENES
9.30 – 10.00	<b>Keynote lecture</b> <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. Aydinian, I. Hussainova, J. Rosen (Sweden, Estonia, Armenia)</i> (MO <sub>2</sub> /3Y <sub>1</sub> /3)2ALC I-MAX PHASE THROUGH SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS
11.20 – 11.40	<b>Coffee Break</b>
11.40 – 12.00	<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
12.00 – 12.20	<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
12.20 – 12.40	<i>N.P. Cherezov, M.I. Alymov, A.B. Ankudinov, V.A. Zelenskiy<sup>2</sup>, V.S. Erasov, V.S. Shustov, I.V. Saikov (Russia)</i> APPLICATION OF TiH <sub>2</sub> POWDER PRODUCED BY THE SHS METHOD TO THE PREPARATION OF POROUS TITANIUM AND STUDY OF ITS MECHANICAL PROPERTIES

12.40 – 13.00	<p><b>S.A. Seropyan, G.R. Saikova, I.V. Saikov, E.I. Volchenko (Russia)</b>  REACTION MECHANISM DURING COMBUSTION OF ENERGETIC MATERIALS  W/PTFE/AL</p>
13.00 – 13.20	<p><b>L. Farsiyan, J. Tumoyan, Sh. Kazaryan, A. Arsenyan, A. Hovhannisyan (Armenia)</b>  PROPERTIES OF BIOCOMPATIBLE IRON OXIDE 'CORE-SHELL' TYPE  NANOPARTICLES OBTAINED WITH CAMELLIA SINENSIS EXTRACTS</p>
13.20 – 14.20	<b>Lunch</b>

## Session 8: Kinetics and mechanisms of chemical and structure transformations

**Session Chairmen: *Aliaksandr Ilyushchanka, Hayk Nersisyan***

14.20 – 14.50	<p><b>Keynote lecture</b>  <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>
14.50 – 15.10	<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>
15.10 – 15.30	<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>
15.30 – 15.50	<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>
15.50 – 16.10	<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>
16.10 – 16.30	<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>
16.30 – 16.50	<p><i>V. G. Kirilenko, A. Yu. Dolgoborodov, M.A. Brazhnikov (Russia)</i>            FAST REACTION PROPAGATION IN NANOTHERMITES</p>
16.50 – 17.00	<b>Coffee Break</b>
17.00 – 18.30	<b>Poster Session</b>

## DAY 4: THURSDAY, SEPTEMBER 12, 2024

### Session 9: Solution combustion synthesis

Session Chairmen: *Zulhair Mansurov, Alexander Mukasyan*

9.00 – 9.30	<b>Keynote lecture</b> <i>Khachatur Manukyan (USA)</i> FUNDAMENTALS AND APPLICATIONS OF SOLUTION COMBUSTION SYNTHESIS
9.30 – 10.00	<b>Keynote lecture</b> <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 <sub>2</sub> 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 <sub>2</sub> O <sub>3</sub> (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	<b>LUNCH</b>

## Session 10: SHS in surface engineering

Session Chairmen: *Peizhong Feng, Dmitry Shtansky*

13.10 – 13.40	<b>Keynote lecture</b> <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 <sub>2</sub> -BASED COMPOSITE COATING BY DOPING ZRB <sub>2</sub> -SiC ON NB SUBSTRATE
13.40 – 14.00	<b>Ph.V. Kiryukhantsev-Korneev, A.D. Chertova, S.I. Rupasov, P. Feng, X. Ren, E.A. Levashov (Russia, China)</b> NEW GENERATION OF SHS-MATERIALS FOR HIGH POWER IMPULSE MAGNETRON SPUTTERING AND SPARK PLASMA SINTERING OF OXIDATION RESISTANT COATINGS
14.00 – 14.20	<b>X. Ji, X. Ren, Y. Chen, Ph.V. Kiryukhantsev-Korneev, E. A. Levashov, P. Feng (China, Russia)</b> ENHANCED OXIDATION RESISTANCE OF ZRB <sub>2</sub> -MOSI <sub>2</sub> COATING THROUGH MOSI <sub>2</sub> -TASI <sub>2</sub> DOUBLE-SILICIDE ALLOYING MODIFYING
14.20 – 14.40	<b>M.I. Petrzhik, S.K. Mukanov, A.E. Kudryashov, X. Ren, P. Feng, E.A. Levashov (Russia, China)</b> IN SITU PHASE FORMATION AT ELECTRIC SPARK TREATMENT OF METALLIC ALLOYS
14.40 – 15.00	<b>A.D. Chertova, Yu.A. Vypritskaya, F.I. Chudarin, E.I. Patsera, E.A. Levashov, Ph.V. Kiryukhantsev-Korneev (Russia)</b> 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)<sub>2</sub>ALC/AL<sub>2</sub>O<sub>3</sub> 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 SI<sub>3</sub>N<sub>4</sub>-YB<sub>2</sub>O<sub>3</sub>  
*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-B<sub>4</sub>C 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 CU<sub>2</sub>SE WITH SIC DOPING  
*G.R. Nigmatullina, D.Yu. Kovalev (Russia)*
14. STRUCTURE AND PROPERTIES OF SHS- SOLID SOLUTIONS (HF1-XTAX)B<sub>2</sub>  
*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 (BI<sub>2</sub>/3SB<sub>1</sub>/3)<sub>2</sub>(TE<sub>2</sub>/5SE<sub>2</sub>/5S<sub>1</sub>/5)<sub>3</sub> ALLOY  
*O. Ivanov, M. Yaprntsev, E. Yaprntseva, T. Nikulicheva, A. Vasil'ev (Russia, Armenia)*
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*O.M. Miloserdova, P.A. Miloserdov, V.I. Yuhvid (Russia)*
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*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. Yaprntsev, E. Yaprntseva, O. Ivanov, A. Vasil'ev (Russia, Armenia)*
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*E. Yaprntseva, A. Vasil'ev, M. Yaprntsev, O. Ivanov (Russia, Armenia)*



26. THERMAL STABILITY OF OXIDATION-RESISTANT  
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*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  
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*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  
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*V.A. Gorshkov, S.N. Zhevnenko (Russia)*
30. COMPOSITE RODS BY METHOD COMBINING SHS AND HOT GAS EXTRUSION OF  
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*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  
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*P.A. Loginov, G.M. Markov, E.A. Levashov (Russia)*
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*A.V. Linde, V.V. Grachev (Russia)*
33. STUDY OF STRUCTURE OF ALMG6-STAINLESS STEEL WELD INTERFACE AFTER  
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*N. Niyozbekov, A. Malakhov, I. Denisov, I. Saikov, V. Tkachenko (Russia)*
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*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  
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*T.G. Akopdzhanyan, D.I. Abzalov (Russia)*
36. SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF LIGHT ALLOYS IN THE TI-  
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*P.A. Lazarev, A.E. Sytshev, O.D. Boyarchenko (Russia)*
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*D. Abzalov (Russia)*
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*V.E. Loryan, M.A. Ponomaryev, N.A. Kochetov (Russia)*
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*E.I. Zamulaeva, E.A. Levashov, E.A. Bashkirov, Yu. Yu. Kaplanskii, A.N. Sheveyko, V.A.  
Gorshkov (Russia)*



40. SYNTHESIS OF V<sub>2</sub>AlC CERAMICS BY SHS USING VO<sub>2</sub> AS A STARTING MATERIAL  
*D.Yu. Kovalev, V.I. Vershinnikov (Russia)*
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*M. L. Busurina, A.V. Karpov, D.E. Andreev, A.E. Sytshev (Russia)*
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*I.E. Semenchuk, V.A. Shcherbakov, A.N. Gryadunov (Russia)*
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*P.M.Krishenik, S.A.Rogachev, S.V. Kostin (Russia)*
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*A.V. Bolotskaia, M.V. Mikheev, P.M. Bazhin, A.M. Stolin (Russia)*
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*A.N. Kubanova, D.M. Ikornikov, D.A. Martynov, V.N. Sanin (Russia)*
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*V.V. Sanin, M.I. Aheiev, V.N. Sanin, E.A. Levashov (Russia)*
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*M.V. Mikheev, A.V. Bolotskaia, A.M. Stolin, P.M. Bazhin (Russia)*
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*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)*
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*M. N. Fatykhova, K. A. Kuptsov, A. N. Sheveyko, D. V. Shtansky (Russia)*
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*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)*
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*N.S. Shibakova (Russia)*
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*R.I. Jussupkaliyeva, S. I. Pomogailo, E.V. Pugacheva, I. M. Bystrova, V. N. Borshch (Kazakhstan, Russia)*
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*E.V. Pugacheva, S. Ya. Zhuk, R.A. Kochetkov, N.I. Abzalov, B.S. Seplyarskii, V.N. Borshch (Russia)*
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*M.S. Antipov, P.M. Bazhin, A.P. Chizhikov, A.S. Konstantinov, A.D. Bazhina, A.S. Ivanov, A.M. Stolin (Russia)*
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*B. S. Seplyarskii, R. A. Kochetkov, and T. G. Lisina (Russia)*
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*O. Averichev, A. Stolin (Russia)*
62. SELF-PROPAGATING HIGH-TEMPERATURE SYNTHESIS OF A CO<sub>2</sub>B-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 HFB<sub>2</sub>-HFC SYSTEM  
*I.O. Vakhrusheva, A.A. Zaitsev, Yu.S. Pogozev, A.Yu. Potanin, E.A. Levashov (Russia)*

67. THE KINETICS AND MECHANISM OF SOLUTION COMBUSTION SYNTHESIS IN  
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*N.H. Amirkhanyan, M.K. Zakaryan, S.L. Kharatyan, K.V. Manukyan (Armenia, USA)*
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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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*V.S. Suvorova, A.A. Nepapushev, D.O. Moskovskikh (Russia)*
70. PREPARATION OF NIAL-STEEL GRADED COMPOSITE DURING SELF-PROPAGATING  
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*S.A. Seropyan, A.Yu. Malakhov, I.V. Denisov, A.V. Smirnov (Russia)*
71. OBTAINING PRODUCTS FROM TUNGSTEN-FREE HARD ALLOYS USING THE SHS  
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*A.A. Filippenkov, V.G. Tsikarev, A.V. Alabushev*