SHS 2011

XI International Symposium of Self-Propagating High Temperature Synthesis

5 - 9 September 2011
EDEN Beach Resort Hotel,
Anavyssos, Attica, GREECE

PROGRAMME

REVISION 1

PROGRAMME

SHS 2011

XI International Symposium of Self-Propagating High Temperature Synthesis

Organised by:

Institute of Materials Science, NCSR Demokritos, Greece

Institute of Structural Macrokinetics and Materials Science of RAS, Russia

Supported by:

World Academy of Ceramics (WAC)

International Association on Self-Propagating High Temperature Synthesis (SHS-AS)

Russian Foundation for Basic Research (RFBR)

Local Secretariat:

Chair: Professor Galina Xanthopoulou, **Co-Chair:** Dr George Vekinis
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Sunday 4 September 2011

18:00 – 20:00 Registration and Welcoming "Social-by-the-sea"

Monday 5 September 2011

09:00 – 10:00 Registration

10:00 – 10:50 **Opening Ceremony**
Welcoming Comments and Symposium Overview by the SHS2011 Local Organising Committee Chair, Professor Galina Xanthopoulou

10:50 – 11:30 **Plenary address by Professor Academician Alexander G. Merzhanov (VIDEO ADDRESS)**

11:30 – 11:50 **Coffee**

11:50 – 12:30	**Session 1P: PLENARY**
	Chair: A. G. Merzhanov
P1: Thomas Katsaros, "Re-discovering Ancient Greek Technology - from daily life's crafts to high Technology Achievements"	

12:30 – 13:30 **Lunch**

13:30 – 14:15	**Session 2P: PLENARY**
	Chair: G. Xanthopoulou
P2: Jean-Marie Muylaert, "Characterization of Advanced Thermal Protection Systems for Spacecraft Using Plasma Facilities: Facilities Overview and Critical Issues and Challenges"	

14:30 – 17:20 Parallel sessions

	Session Parallel 2A: Combustion theory and modelling -A1	Session Parallel 2B: Structural Macrokinetics of SHS processes - B1
	Chair:: V. Grachev	Chair: B. Derin
14:30	2A-K: Keynote Talk: V.V. Grachev, A.V. Linde "Layer and Surface Modes of Filtration Combustion: Theory and Experiment"	2B-K: Keynote Talk:. A.S. Shteinberg, A. A. Berlin, A. A. Denisaev, A. S. Moukasyan, "Macrokinetics of Fast Reactions in Condensed Energetic Materials"
15:00	2A-1: Baras F., A. Linde and O. Politano, "Study of the reactivity of nanometric NiAl multilayers by molecular dynamics simulations"	2B-1: I. D. Kovalev, V.I. Ponomarev, V.I. Vershinnikov, S.V. Konovalikhin, "Mystery of boron carbide structure"
15:20	2A-2: A. Markov, I. A. Filimonov, Karen S. Martirosyan, "Gasdynamic aspects of CCSO as a smoldering combustion wave"	2B-2: G.I. Ksandopulo, "Adiabacity of SHS wave under the conditions of rotation and characteristic concentration limits of combustion on the example of oxide systems"

15:40 – 16:00 **Coffee**

16:00	2A-3: V. Yu. Filimonov, K.B. Koshelev, "Thermal modes of synthesis in non isothermal diffusion processes considering the crystallization kinetics of the product phase"	2B-3: Ya-Cheng Lin, P.J. McGinn, A.S. Shteinberg, A.S. Mukasyan, "Kinetics of Thermite Reactions: Ti/Fe_2O_3 System" CANCELLED
16:20	2A-4: O.V. Ivanova, S.A. Zelepugin, "Simulation of solid phase reaction synthesis under shock wave loading"	2B-4: Kiyotaka Matsuura, J. Yu, M. Ziemnicka, M. Ohno, D. Kata, J. Lis "Synthesis of titanium-based cemented carbides and bonding to steel"
16:40	2A-5: E. Colombini, R. Rosa, P. Veronesi, C. Leonelli, G. Poli, "Microwave ignited combustion synthesis as a joining technique for dissimilar materials: modeling and experimental results"	2B-5: Min Xia, Changchun Ge, Hongyan Guo, "Single Crystalline silicon nitride nanowires prepared with Self-propagating high temperature-synthesis"

17:00	2A-6: Zac Doorenbos, Deepak Kapoor, Chris Haines, J.A. Puszynski, "Oxidation Kinetics and Mathematical Modeling of Self-Propagating Reaction in an Inert Substrate Filled with Pyrophoric Iron Nanoparticles"	2B-6: E. Patsera, E.A. Levashov, V.V. Kurbatkina, A.S. Rogachev, N.A. Kochetov, "The combustion and structure formation in the mechanoactivated Ti–Cr–B mixture"

17:20 – 18:30 **Poster Session PS1**

A) Combustion theory and modelling

P-A1	S.A. Bostandzhiyan, I.S. Gordopolova, V.A. Shcherbakov, "Modelling of an electrothermal explosion in the Ti+C sample encircled with a final product layer"
P-A2	R.S. Burkina, V.V. Burkin, A.M. Domukhovskii, "Research of formation of the transitive layer and its influence on process of condensed reactive substances initiation at influence of powerful radiation pulse"
P-A3	H. A. Chatilyan, M.A. Aghayan, S.L. Kharatyan, "Interaction Modes in Molybdenum/Silicon Diffusion Couple at Non Isothermal Conditions"
P-A4	I.A. Filimonov, "Interaction between thermal diffusion and gas filtration as a key parameter managing spin combustion in reactive Gas-Solid systems"
P-A5	B. Formanek, B.B. Khina, A.I. Letsko, A.F. Ilyushchenko, "Thermodynamic modeling of ilmenite reduction in the SHS regime for producing composite powders for thermal spraying"
P-A6	Stanisław Jóźwiak, Krzysztof Karczewski, Zbigniew Bojar, "The DTA investigation of SHS reaction changes during non-isothermal sintering process of Fe and Al powders"
P-A7	V. Klyucharev, "The topological reform of combustion science"
P-A8	A. S. Sharipov, A.M. Starik, "Low temperature conversion of carbon oxide to carbon dioxide promoted by singlet delta oxygen"
P-A9	Victor Smolyakov, Oleg Lapshin, Vadim Prokofyev, "High-temperature synthesis in mechanoactivated system with three reagents"

P-A10	A.M. Starik, N. S. Titova, S. A. Torokhov, "Pre-flame phenomena and low temperature ignition mechanisms in kerosene-air mixture"

B) Structural Macrokinetics of SHS processes

P-B1	H. Boutefnouchet, C. Curfs, A. Triki, A. Boutefnouchet, D. Vrel, "Time-Resolved X-Ray Diffraction of the Combustion Synthesis of TiC-Ni Composites"
P-B2	Yu.S. Naiborodenko, N.G. Kasatsky, L.I. Tsapalo, L.A. Arkatova, O.V. Pakhnutov, "The mode effect of self-propagating high-temperature synthesis of transitive metal alluminides on catalytic properties during carbon dioxide methane conversion"
P-B3	N. Radishevskaya, O.V. Lvov, N.G. Kasatsky, A.Yu. Chapskaya, Yu.S. Naiborodenko, "Features of Alumo-Cobalt spinel SHS-synthesis"
P-B4	L.G. Raskolenko, O.A. Shkoda," Plotting of dynamic structure under experimental research of behavior of SHS systems with complex organization"
P-B5	O.A. Shkoda, O.G. Terekhova, "Investigation of influence of mechanical activation time summation mode on SHS for powder system Nb-Si"

C) Chemistry and Technology of SHS processes

P-C1	Rafiqa Aliyeva, Ulviyya Abilova, Famil Chiragov, "Preparation of xelat adsorbent contains arsenate group and study of adsorbtion of this adsorbent with Pd(II) ion"
P-C2	L.N. Chukhlomina, Yu.M. Maksimov, "Coupled synthesis of ceramic compositions on the basis of silicon nitride"
P-C3	Gianluca Corrias, Roberta Licheri, Roberto Orrù. Giacomo Cao, "Self-Propagating High-Temperature Synthesis Reactions for ISRU and ISFR Applications"
P-C4	N. Golovchenko, O. Bayrakova, G.I. Ksandopoulo, S. Kh. Aknazarov, "Reception ferrotungsten under pressure from raw materials with low content of tungsten and tungsten scrap"

P-C5	O.Yu. Golovchenko, S. Kh. Aknazarov. "Mechanical activation and SHS difficult to remove metals"
P-C6	Denis M. Ikornikov, D. E. Andreev, V. N. Sanin, and V. I. Yukhvid, "Combustion of termite type systems in thin layers and formation of cast granules in-situ SHS"
P-C7	Alexander R. Kachin, V.I. Yukhvid, V.A. Yashin, "SHS surfacing: effect of aluminum particle size and brand"
P-C8	Yu.G. Morozov, M.V. Kuznetsov, "Electrochemistry and dynamic ionography of SHS: New methods of heterogeneous combustion diagnostics"
P-C9	Ch.G. Pak, V.M. Batrashov, "Obtaining and regulation of the phosphate materials structure in the mode of the self-propagating exothermal reaction"
P-C10	T.L. Talako, A.I. Letsko, "Effect of microstructural changes during mechanical activation on the combustion process in Fe-Al powder mixtures"
P-C11	A.A. Voskanyan, O.M. Niazyan, Kh.V. Manukyan, S.L. Kharatyan, R.A. Mnatsakanyan, A.S. Mukasyan, "Mechanism for SHS-Reduction of Na_2WO_4 by Magnesium"

D) SHS of advanced materials: nanomaterials, metals, ceramics, intermetallics, composites, etc.

P-D1	D.S. Abdulkarimova, I.M.Vongai, A.Gubarevich, W. Wen-Wen, O. Odawara, Z.A. Mansurov, "Submicrone size single crystal CrB_2 fibers"
P-D2	R.G. Abdulkarimova, A.S.Suleimenova, D.S. Abdulkarimova, Z.A. Mansurov, "Self-propagating high temperature synthesis of composition materials using mineral raw materials"
P-D3	N.N. Aghajanyan, S.K. Dolukhanyan, "Investigation of combustion in Ti-Nb-W-C-H system and synthesis of complex carbohydrides"
P-D4	H. Amel-Farzad, A.H. Ghavimi, "Dense Ni-TiC Composites Produced Through Under-Pressure Combustion Synthesis"

P-D5	Hossein Amel-Farzad, Sharzad Nazari, Famoosh Emam, “Production of Ti Nanoparticles via Combustion Synthesis”
P-D6	Hossein Amel-Farzad, Vafa Jahangor, Saeed Vakilpur, ”Nanoporous Cu Parts Production via Combustion Synthesis”
P-D7	S. Arroussi, M. Ali Rachedi, A. Benaldjia, M. Andasmas, M. Guerioune, D. Vrel, “Formation of the nanocrystalline NiAl phase by Mechanically Activated Self-propagating High-temperature Synthesis reaction”
P-D8	A. Benaldjia, N. Sehab, A. Otmani, A. Amara, A. Otmani, D. Vrel, J.M. Grénèche, ”X rays and thermal study of $Ti_{2-x}Fe_xO_3$ synthesis by the SHS method”

Tuesday 6 September 2011

09:00 – 9:45	**Session 3P: PLENARY**
	Chair: O. Odawara
P3: Steven Son, "The effect of doping on the combustion and reaction kinetics of silicon reactives"	

10:00 – 12:30 Parallel Sessions

	Session Parallel 3A: Combustion theory and modelling - A2	Session Parallel 3B: Structural Macrokinetics of SHS processes-B2
	Chair: J.A. Sekhar	Chair: A.S. Rogachev
10:00	3A-K: Keynote Talk: Jainagesh A. Sekhar, Hung-Pin Li, Georg Weber, Gautam K. Dey, Yaw Bensah, "Relating Entropy Rate Models to Combustion Kinetic Models for Nano-Feature Formation Especially for Structural and Oncological Use"	3B-K: Keynote Talk:. A.S. Rogachev, "Exothermic reactions in nano-heterogeneous systems as novel routes of SHS"
10:30	3A-1: Vladimir Leitsin, Maria Dmitrieva, "Kinetics model of shock synthesis processes"	3B-1: Isabelle Gallet, Florence Baras, F. Bernard, "Modification of SHS parameters via a mechanical activation in various intermetallics" CANCELLED
10:50	3A-2: V. Prokofyev, Victor Smolyakov, "Modeling of combustion of layered gasless compositions "	3B-2: O. Shkoda, L. G. Raskolenko, "Reseach in the nonlinear self-consistent system 'mechano-activated powder mixture of Ti-Ni–explosion wave–synthesized product' POSTER IN PS2

11:10 – 11:30 **Coffee**

11:30	3A-3: S. Rashkovskiy, "3D Simulation of Discrete Combustion Waves: From Microstructure to Combustion"	3B-3: L.H. Sloyan, A.M. Baghdasaryan, H.L. Khachatryan, M.A. Hobosyan, Y.G. Grigoryan, O.M. Niazyan, S.L. Kharatyan, "Activated combustion features in the Ni-Al system" POSTER IN PS2

11:50	3A-4: S.N. Sorokova, A.G. Knyazeva, "Simulation of coating structure formation on the base of cylindrical form"	3B-4: B. Derin, O. Altinordu, M. Alkan, S. Sonmez, O. Yucel, V. Sanin, D. Andreev, V. Yukhvid, "Some thermodynamic aspects for SHS of cast alloys and experiments under normal and high gravity"
12:10		3B-5: G.I. Ksandopulo, A.N. Baideldinova, "Macrokinetics of SHS-process under the effect of centrifugal force"

12:30 – 13:30 **Lunch**

13:30 – 14:15 **Session 4P: PLENARY**
Chair: G Vekinis
P4: Osamu Odawara, "SHS Research and International Collaboration on in-situ Resource Utilization beyond Low-Earth Orbit"

14:30–17:00 Parallel Sessions

	Session Parallel 4A: SHS of advanced materials: nanomaterials, metals, ceramics, intermetallics, composites, etc-D1	Session Parallel 4B: Non–conventional SHS processes: New methods and applications-E1	Session Parallel 4C: Structural Macrokinetics of SHS processes-B3
	Chair: T. Weihs	Chair: S. Kharatyan	Chair: D. Vrel
14:30	4A-K: Keynote Talk: T. P. Weihs, "Reaction Properties, Phase Transformations and Novel Applications for Reactive Laminate Foils and Particles"	4B-K: Keynote Talk:. S. Kharatyan, A.G. Merzhanov, "Coupling Reactions in SHS. New Possibilities for Materials Synthesis"	4C-K: Keynote Talk: I.P. Borovinskaya, "Structural polymorphism and self-organization of combustion products at nitride synthesis by SHS"

15:00	4A-1: I. Perraud, F. Rouessac, R.M. Ayral, A. Ayral, "Preparation of ZnO porous monoliths via SHS of ZnS perform"	4B-1: Miguel A. Lagos, I. Agote, N. Azurmendi, T. Minster-Blondeau, "Synthesis and densification of TiAl alloys by alternative sintering techniques"	4C-1: Florence Rouessac, Rose-Marie Ayral, "Preparation of Zinc Antimonide compounds using SHS"
15:20	4A-2: Ewelina Pocheć, Stanisław Jóźwiak, Zbigniew Bojar, "The influence of technological parameters on the Fe-Al phase formation close to SHS reaction under isothermal conditions"	4B-2: Joerg Braeuer, Jan Besser, Maik Wiemer, Thomas Gessner, "Nano scale Al/Pd multilayer systems for reactive bonding in Microsystems technology"	4C-2: S.M. Zharkov, R.R. Altunin, Yu.G. Semenova, E.T. Moiseenko, S.N. Varnakov "In situ transmission electron microscopy investigations of solid-state synthesis in thin films"

15:40 – 16:00 **Coffee**

16:00	4A-3: B. M. Nagabhushana, H. Nagabhushana, "Solution Combustion synthesis of nanomaterials and their properties"	4B-3: Y.S. Kotolevich, P.E. Mikenin, V.B. Goncharov, A.I. Nizovskii, P.G. Tsyrul'nikov, "Heat impulse thermosynthesis method of (Pd- Ag)/glass fibres catalysts of acetylene selective hydrogenation"	4C-3: A.R. Zurnachyan, R.A. Mnatsakanyan, Kh.V. Manukyan, S.L. Kharatyan, "Combustion synthesis of WC/C & Mo_2C/C catalytic systems"
16:20	4A-4: V. N. Sanin, V.N. Borshch, D.E. Andreev, V.I. Yukhvid, A.L. Lapidus, O.L. Eliseev, R.V. Kazantsev, "SHS Catalysts based on Ni and Co intermetallides for deep oxidation and fisher-tropsh processes"	4B-4: J.P. Goudon, P. Yvart, F. Bernard, "Non conventional solid combustion of new redox binary mixture for hydrogen generation"	4C-4: Y.T. Zheng, T. Zhou, X.K. Zhang, X.D. He, "Combustion synthesis and characteristic of aluminum oxynitride ceramic form"

16:40	*4A-5: Keynote Talk: Qiao Feng, Changchun Ge, Qingzhi Yan, "Frontal polymerization of hydrogel" (Abstract as PE-4)	4B-5: M. A. Dmitrieva, V.N. Leitsin, "Study of dynamic conditions of the shock initiation of powder and layered energy materials"	4C-5: D. Yu. Kovalev, V. I. Ponomarev, N. A. Kochetov, "Structural state of Ti–Al and Ni–Al powder mixtures under mechanical activation"

*The talk by A.M. Shulpekov, O.K. Lepakova, "Obtaining of carbide or titanium silicides-carbide with SHS method with the use of titanium alloys" will be presented as poster in PS2

17:00 – 18:00 **Poster Session PS2**

D) SHS of advanced materials: nanomaterials, metals, ceramics, intermetallics, composites, etc. (continued)

P-D9	O.D. Boyarchenko, N.F. Shkodich, N.V. Sachkova, S.G. Vadchenko, A.S. Rogachev, A.E. Sytschev, "Effect of mixing and sample preparation conditions on ignition and combustion characteristics of Ni - Al mixtures"
P-D10	B.Sh. Braverman, Yu.V. Tsibulnik, Yu.M. Maksimov, Combustion of iron-vanadium alloy in flow of nitrogen containing gas
P-D11	F. Chouit, M. Guerioune, S. Boukhezar, O. Guellati, "Synthesis of High density polyethylene carbon nanotube composites by SHS"
P-D12	F. Chouit, S. Boukhezar, O. Guellati, M. Guerioune, "Combustion Synthesis of Ni-Ti composites reinforced by carbon nanotubes"
P-D13	M. A. F. Del Nero de Freitas, T. de F. Silva, J. M. Assaf, R. H. G.A. Kiminami, "Microwave combustion synthesis of $LANi_{1-x}Fe_xO_3$ nanopowders"
P-D14	V.L. Efremov,"Self-propagating high-temperature synthesis of electroconductive ceramics based on $MoSi_2$"
P-D15	V.A. Gorshkov, P.A. Miloserdov, V.I. Yukhvid, N.V. Sachkova, "On the mechanism of chemical conversions in the combustion wave of the MoO_3/TiO_2/Al/Si system"
P-D16	T.I. Ignat'eva, I.P. Borovinskaya, V.N. Semenova, I.D. Kovalev, Yu.N. Barinov, "Ultrafine and nanosized $MoSi_2$ powders: synthesis and

	separation"
P-D17	M.A. Kale, C.P. Joshi , S.V. Moharil, "Combustion synthesis of some compounds in Li_2O-Al_2O_3 system"
P-D18	Kh.G. Kirakosyan, Y.G. Grigoryan, O.M. Niazyan, A.V. Yeghishyan, A.G. Kirakosyan, Kh.V. Manukayn, S.L. Kharatyan, "On the mechanism of molten-salt-controlled thermite reactions"
P-D19	V.P. Kobyakov, I.V. Novikov, M.A. Sichinava, V.I. Ratnikov, A.V. Bokov, N.V. Sachkova, "Dispersion hardening of cermet Al_2O_3/TiC with iron-titanium bond"
P-D20	Arvanitis Konstantinos, Galina Xanthopoulou, George Vekinis, Loukas Zoumpoulakis, Thomas Katsaros and Thomas Ganetsos, "SHS production of structural units of lunar regolith simulant"
P-D21	Maksim V. Kuznetsov, "SHS of complex oxides"
P-D22	Chong Li, Xiaodong He, Yibin Li, Ming Wu, "Frictional properties against Cu of Ti-Al-C prepared by combustion synthesis and simultaneous densification"
P-D23	V.E. Loryan, I.P. Borovinskaya, S.G. Titov, "Investigation of SHS α-Si_3N_4, α-, β-SiAlON sintering and their phase formation regularities"
P-D24	N.N. Mofa, S.Kh. Aknazarov, B.S. Sadykov, "The peculiarities of combustion and phase formation in the course of SHS of mechanoactivated mixtures quartz-calcite"
P-D25	Yu.G. Morozov, M.V. Kuznetsov, T.I. Ignat'eva, "Self-propagating high-temperature synthesis of a superoxide compound in Na-Fe-Y-O system"
P-D26	H.H. Nersisyan, H.I. Won, C. W. Won, "Rare-earth doped silicon nitride blue-emitting phosphor"
P-D27	G.S. Oniashvili, Z.G. Aslamazashvili, G.V. Zakharov, M.N. Chikhradze, "Obtaining of radiation resistant materials by SHS"
P-D28	V.M. Orlov, M.V. Kryzhanov, "Self-propagating high-temperature synthesis of tantalum powder"
P-D29	Michael A. Ponomarev, "Growth Of Single Crystal TiB_2 And TiC By Plasma-Arc Melting Of SHS Products"

P-D30	Michael A. Ponomarev, Vazgen Edvardovich Loryan, Alexander Grigorievich Merzhanov, "Structure Formation At Densification Of Titanium Monodispersed Spherical Particles In The Mixture With Boron"
P-D31	V.K. Prokudina, V.I. Ratnikov, I.P. Borovinskaya, N.V. Sachkova, "Dehydrated titanium powder: properties and use in SHS-materials"
P-D32	J.F. Qiu, J.T. Li, K.L. Smirnov, "Combustion Synthesis of High Porosity SiC Foam"
P-D33	C.F.V. Raigoza, D. Garcia, J.A. Eiras, Ruth H. G. A. Kiminami, "Combustion Synthesis of PZN-10PT Nanopowders"
P-D34	Roberto Rosa, Paolo Veronesi, Elena Colombini, Cristina Leonelli, Giorgio Poli, Angelo Casagrande, "β-NiAl coated γ-TiAl intermetallic based alloy by contemporary combustion synthesis"
P-D35	J. Selig, S. Lin, H.T. Lin, D. R. Johnson, Self-propagating high-temperature synthesis of thermoelectric oxides
P-D36	N. Sehab, A. Benaldjia, A. Amara, M. Ali Rachedi, P. Langlois, D. Vrel, "Mechanical activation powders and electric current maintaining effects on the synthesis of Ti2AlC MAX phase by ETEPC"
P-D37	D. Siemiaszko, M. Czarnecki, "Structure and properties of Fe40Al intermetallic sintered with additional pressing during SHS reaction"
P-D38	S.L. Silyakov, V.A. Gorshkov, V.I. Yukhvid, N.V. Sachkova, T.I. Ignat'eva, "SHS-metallurgy of cast aluminium oxynitrides"
P-D39	I.A. Studenikin, V.V. Grachev, "Combustion synthesis of silicon oxynitride under air pressure"
P-D40	V.I. Uvarov, I.P. Borovinskaya, I.G. Malevannaya, "Membrane-catalytic systems in the processes of vapor conversion of ethanol and acetic acid as the main products of biomass fermentation"

Wednesday 7 September 2011

09:00 – 9:45 **Session 5P: PLENARY**
Chair: I. Gotman
P5: Boris .P. Tolochko, A.S. Rogachev, M.R. Sharafutdinov, "New Perspective of the Time-resolved Investigations of SHS at new synchrotron radiation sources".

10:00 – 12:10 Parallel Sessions

	Session Parallel 5A: Non–conventional SHS processes: New methods and applications - E2	Session Parallel 5B SHS of advanced materials: nanomaterials, metals, ceramics, intermetallics, composites, etc.-D2
	Chair: K. Martirosyan	Chair: H. Nersisyan
10:00	5A-K: Keynote Talk:. K.S. Martirosyan, "High Density Nanoenergetic Gas Generators: Fundamentals and Perspectives"	5A-1: H.H. Nersisyan, C.W. Won, H.I. Won, "A new strategy for the synthesis of high luminescence red-emitting $Sr_2Si_5N_8:Eu^{+2}$ phosphor"
10:30	5A-1: R. Rosa, P. Veronesi, E. Colombini, M. Michelazzi, C. Leonelli, A.R. Boccaccini, "Innovative combinations between combustion synthesis and electrophoretic deposition techniques"	5B-2: P.J. Yadav, C.P. Joshi, S.V. Moharil, "Synthesis of multicomponent ceramic Phosphors for solid state lighting using SHS process"
10:50	5A-2: O.L. Pervukhina, I.V. Saikov, "New composite materials by shock wave and SHS processing"	5B-3: D. Kata, J. Lis, "Activation of SHS by rapid decompostion of Silicon Nitride"

11:10 – 11:30 **Coffee**

11:30	5A-3: J.Y. Guigné, "Containerless combustion synthesis processing in microgravity leading to product fabrication and resource utilization on ISS"	5B-4: Krzysztof Karczewski, Stanisław Jóźwiak, Michał Chojnacki, Wojciech Stępniowski, Zbigniew Bojar, "Porous FeAl intermetallics materials fabricated by SHS reaction"

11:50	5A-4: Yu.S. Pogozhev, A.E. Kudryashov, A.V. Novikov, E.A. Levashov, N.A. Kochetov, A.S. Rogachev, "Advanced SHS-electrodes based on TiC-TiNi for pulsed electrospark deposition"	5B-5: A. Asatryan, A. Avetisyan, A. Davidova, H.L. Khachatryan, "Combustion synthesis of ferrotitanium alloy reinforced by ceramic phase"

Free remainder of the day for Social Activities.

Bus Tour to Archaeological Sites to Peloponnese (Mycenae, Epidaurus), with packed Lunch and Dinner by the sea at Epidaurus.

Partly negotiable to motorically challenged persons.

Return to EDEN Resort Hotel at about 10pm.

Thursday 8 September 2011

09:00 – 9:45 **Session 6P: PLENARY**
Chair: B. Tolochko
P6: Irena Gotman, "Medical implant materials with designed microstructure and controlled biological and mechanical properties"

10:00 – 12:30 Parallel Sessions

	Session Parallel 6A: Industrialization of SHS - F1	Session Parallel 6B: Non–conventional SHS processes: New methods and applications - E3
	Chair: E. Levashov	Chair: J. Lis
10:00	5A-K: Keynote Talk: Evgeny A. Levashov, "Contribution of SHS to Decision of Problems of Surface Engineering"	6B-1: Kh.G. Kirakosyan, N.H. Amirkhanyan, A.V. Yeghishyan, Kh.V. Manukyan, S.L. Kharatyan, J. Bossert ,"Combustion synthesis of porous zirconium alloys with controlled properties"
10:30	6A-1: Yu.M. Maksimov, A.I. Kirdyashkin, "Production and application of porous SHS ceramics"	6B-2: A. Marinou, G. Xanthopoulou, G. Vekinis, A. Lekatou, M. Vardavoulias, "Composite coatings in the systems Ni-Al and NiO-Al by *in-flight* combustion sythesis during Thermal Spraying"
10:50	6A-2: Hossein Amel-Farzad, Hamid Youssefi-Mashouf, "Alumina nanofibers mass production via air-exposed combustion synthesis" CANCELLED	6B-3: Z.A.Mansurov, E.E. Dilmukhambetov, S.M. Fomenko, "combination of the sol-gel and SHS-technologies for obtaining carbonaceous refractories"

11:10 – 11:30 **Coffee**

11:30	6A-3: R.D. Kapustin, L.B. Pervukhin, "Alumosilicate refractory composite materials for heating aggregates insulation from high temperatures"	6B-4: V.V. Kurbatkina, E.A. Levashov, E. I. Patsera, S.I. Rupasov, "Mechanical activation assisted SHS of MAX-phases $Cr_xTi_{(2-x)}AlC$"
11:50	6A-4: A. Hadjiafxenti, I.E. Gunduz, T. Kyratsi, C.C. Doumanidis, C. Rebholz, "Exothermic reaction characteristics of continuously ball-milled Al/Ni powder compacts"	6B-5: R.V. Minin, V.I. Itin, E.P.Naiden, V.A. Zhuravlev, Yu.M. Maksimov, "Magnetic properties and microstructure parameters of cobalt-bearing hexaferrites synthesized by SHS POSTER IN PS3
12:10	6A-5: N.N. Mofa, Z. A. Mansurov, "Mechanochenical activation and reactivity of SHS-systems on the basis of quartz"	

12:30 – 13:30 **Lunch**

13:30 - 14:15 **Session 7P – PLENARY**
Chair: J.-M. Muylaert
P7: Galina Xanthopoulou, "Combustion synthesis of materials addresses current and future industrial challenges"

14:30 – 17:00 Parallel Sessions

	Session Parallel 7A: Chemistry and Technology of SHS processes-C1	Session Parallel 7B: SHS of advanced materials: nanomaterials, metals, ceramics, intermetallics, composites, etc.- D3	Session Parallel 7C: SHS of advanced materials nanomaterials, metals, ceramics, intermetallics, composites, etc.-D4
	Chair: S.-L. Chung	Chair: A. Sytschev	Chair: V.I. Yukhvid
14:30	7A-K: Keynote Talk:. Shyan-Lung Chung, Cheng-Yu Hsieh, Chih-Wei Chang, "Combustion Synthesis of AlN Powder towards High Thermal Conductivity Ceramics through Microwave Sintering and Reheating"	7B-1:O.D. Boyarchenko, V.Yu. Barinov, S.G. Vadchenko, A.E. Sytschev, "SHS of inorganic materials with desired structure and porosity"	7C-K: Keynote Talk:. V.I. Yukhvid, "SHS of cast oxide and oxynitride ceramics"
15:00	7A-1: H. Tanaka, A.V. Gubarevich, H. Wada, O. Odawara, "Combustion Synthesis and Structure Changes of Strontium Aluminates "	7B-2: N.F. Shkodich, S.G. Vadchenko, A.S. Rogachev, N.V. Sachkova, R.B.Neder, A. Magerl, "Influence of mechanical activation on SHS and structure formation in nanostructured Ti-BN and Ti-SiC-C systems"	7C-1: E.Bahrami Motlagh, J. Vahdati Khaki, M. Haddad Sabzevar, "Welding of aluminum alloys using Al-CuO combustion synthesis reaction" CANCELLED
15:20	7A-2: V. V. Zakorzhevsky, I.P. Borovinskaya, "Self-propagating High-temperature Synthesis of α-Si_3N_4 Using Submicron Silicon Powder and Gasifying Additives"	7B-3: L. Chlubny, J. Lis, "Sintering and hot-pressing of SHS derived powders in Ti-Al-C and Ti-Al-N systems"	7C-2: Andrzei Huczko, Michał Suszyński, "Ultra-fast growth of silicon carbide nanowires: parametric studies"

15:40 – 16:00 **Coffee**

16:00	7A-3: N. A. Kochetov, A.S. Rogachev, Yu.S. Pogozhev, "The Effect of Mechanical Activation of a Reaction Mixture on the Velocity of the Wave Propagation of SHS Reactions and Microstructure of the TiC–Ni Hard Alloy"	7B-4: M. Chojnacki, S. Jóźwiak, K. Karczewski, Z. Bojar, "Modification of the SHS assisted sintering of Fe-Al intermetallic materials by small additions of low melting elements"	7C-3: W.W. Wu, A.V. Gubarevich, H. Wada, O. Odawara, "Ceramic Joining by Combustion Synthesis of NiO-Al System"
16:20	7A-4: D.E. Andreev , V.N. Sanin, D.M. Ikornikov, V.I. Yukhvid, B. Derin, S. Sonmez, O. Yücel, "Formation of cast Ni–Cr(Co)–Al and Fe–Co–V–Al alloys during SHS in the field of centrifugal forces"	7B-5: R. Baghdasaryan, H.V. Kirakosyan, A.S. Kharatyan, H.L. Khachatryan, "Fabrication of shape memory alloy in Mn-Ni-Sn thernary system"	7C-4: Guobing Ying, Xiaodong He, Shanyi Du, Mingwei Li, Yongting Zheng, Chuncheng Zhu, "In Situ synthesis and mechanical properties of TI_2ALC-TI_3ALC_2 composite by SHS/PHIP"
16:40	7A-5: S.V. Aydinyan, A.A. Aghajanyan, Kh.V. Manukyan, E.G. Grigoryan, O.M. Niazyan, S.L. Kharatyan, "Phase formation mechanism in the molybdenum oxide reduction by Mg + C mixture"	7B-6: Tatsuya Ohmi, Masutaka Omura, Takehiko Kumagai and Manabu Iguchi, "Fabrication of Microchannel-Type Transpiration Cooling Devices by Reaction Sintering and SHS"	7C-5: V.Yu. Filimonov, D.V. Dudina, I.A. Ditenberg, A.N. Tyumentsev, M.A. Korchagin, N.Z. Lyakhov, I.V.Baryshnikov, "Macrokinetic formation features of Ti_3Al in the thermal explosion mode in mechanically activated powder mixtures"
17:00	7A-6: A.S. Maznoy, A.I. Kirdyashkin, Yu.M. Maksimov, N.Yu. Kazazaev, "prospects for synthesis of porous oxynitride ceramics by SHS"		7C-6: L. Han, J.T. Li, I.P. Borovinskaya, K.L. Smirnov, "Combustion Synthesis of Eu-doped α-SiAlON phosphors for white LEDs"

17:20 – 18:30 **Poster Session PS3**

D) SHS of advanced materials: nanomaterials, metals, ceramics, intermetallics, composites, etc. (continued)

P-D41	S.G. Vadchenko, O.D. Boyarchenko, "Modes of thermal explosion development in Fe-Al, B-Al systems"
P-D42	S.G. Vadchenko, O.K. Kamynina, A.E. Sytschev, "Effect of microgravity ON structure formation in SHS"
P-D43	D. Vrel, A.E. Sytschev, N. Fagnon, A.M. Stolin, S.N. Galyshev, P.M. Bazhin, "One step synthesis and densification of TiC-Ni and Ti_2AlC-Ni composites"
P-D44	Min Xia, Changchun Ge, Hongyan Guo, "Aligned single-crystalline β-Si_3N_4 whiskers prepared with Self-propagating high temperature-synthesis"
P-D45	Yongting Zheng, Hongbo Li, Tao Zhou, Xiadong He, "Microstructure and mechanical properties of H-BN-SiC ceramic composite prepared by SHS"
P-D46	C. Zanotti, P. Giuliani, P. Bassani, "Porous equiatomic NiTi alloy produced by SHS"
P-D47	Y.S. Zhao, Y. Yang, J.T. Li, I.P. Borovinskaya, K.L. Smirnov, "Microstructure formation of Y-α-SiAlON under infiltration assisted combustion synthesis"

E) Non–conventional SHS processes: New methods and applications

P-E1	A.G. Aleksanyan, S.K. Dolukhanyan, O.P. Ter-Galstyan, M.V. Martirosyan, "Formation of alloys in the Ti-Nb system by hydride cycle method and $Ti_xNb_{1-x}H_Y$ hydrides synthesis in combustion regime"
P-E2	H.G. Hakobyan, A.G. Aleksanyan, S.K. Dolukhanyan, V.Sh. Shekhtman, N.L. Mnatsakanyan, "Hafnium Intermetallides and their Hydrides Obtained in SHS regime and "Hydride Cycle"
P-E3	N.S. Athanasakou, G. Xanthopoulou, G. Vekinis, L. Zoumpoulakis, "Pigments on the base of Cr-, Mn- and Co-modified wollastonite for industrial applications"
P-E4	Qiao Feng, Changchun Ge, Qingzhi Yan, "Frontal polymerization of hydrogel" To be presented as KEYNOTE TALK 4A-5, Tues. 6/9, 16:40

P-E5	V. Fortov, V. Efremov, E. Dianov, I. Bufetov, A. Frolov, E. Krasnoperov, G. Dorofeev, Yu. Kuroedov, E. Bespalov, A. Eremin, A. Emelianov, H. Jander, H.Gg. Wagner, "Condensation, light and electrical detonations"
P-E6	Yu.M. Grishin, N.P. Kozlov, A.S. Skriabin, I.D. Kovalev, N.I. Mukhina, A.S. Shukin, A.E. Sytschev, "Examination of silicon production from quarz by aluminium with the help of vacuum electric arc"
P-E7	Ph.V. Kiryukhantsev-Korneev, E.A. Levashov, A.N. Sheveiko, K.A. Kuptsov, Yu.S. Pogozhev, V.V. Kurbatkina, C. Paternoster, M.P. Delplancke-Ogletree, D.V. Shtansky, "Application of SHS-Targets for Deposition of Nanostructured Films Using Pulsed Magnetron Sputtering and Pulsed Arc Evaporation"
P-E8	V.L. Kvanin, N.T. Balikhina, V.G. Karabakhin, A.G. Merzhanov, "Combined SHS/argon-arc deposition of protective coatings"
P-E9	Liquan Li, Yunfeng Zhu, "Hydrogen Production by Hydrolysis of Magnesium-based Hydrides Prepared by Hydriding Combustion Synthesis and Mechanical Milling"
P-E10	A. Marinou, G. Xanthopoulou, G. Vekinis, "Highly active Cu–Cr–O mixed spinel SHS catalyst for the oxidation of CO"
P-E11	A.S. Maznoy, A.I. Kirdyashkin, Yu.M. Maksimov, N.Yu. Kazazaev, "Methods for determination of pore size distribution in the volume of porous materials"
P-E12	D.G. Mayilyan, S.K. Dolukhanyan, "Investigation of hydrogen interaction with titanium based high-density alloys in the SHS mode"
P-E13	O.O. Mironenko, V.B. Goncharov, P.G. Tsyrul'nikov, "Investigation of Pd/fiber glass and Pd/γ-Al_2O_3/fiber glass catalysts prepared by surface self-propagating thermosynthesis (SSTS)"
P-E14	O.Sh. Okrostsvaridze, G.F. Tavadze, Z.G. Aslamazashvili, G.V. Zakharov, T.V. Badzoshvili, "Solar energy/self-propagating high-temperature synthesis - new approach for increase of technological energy efficiency"
P-E15	N. Pagonis, G. Xanthopoulou, G. Vekinis, S. Polymenis, "SHS of Mo-based Hydrogenation Catalysts"
P-E16	D.V. Sakhvadze, G.F.Tavadze, A.S. Shteinberg, J.V. Khantadze, G.V. Jandieri, "Method for Application of SHS-Compacting in Vacuum"

P-E17	I.V. Shishkovsky, M.V. Kuznetsov, Yu.G. Morozov, "3D ceramic fabrication via selective laser sintering (SLS) and combined SLS – self-propagating high-temperature synthesis (SHS)"
P-E18	D. Vrel, M. Redolfi, O. Brinza, L.C. Delacqua, G. Lombardi, X. Bonnin, "Mechano-synthesis of W-C alloys by planetary ball milling"
P-E19	O. Thoda, G. Xanthopoulou, G. Vekinis, L. Zoumpoulakis, N. Boukos, "Solution Combustion Synthesis of cobalt pigments"
P-E20	G. Xanthopoulou, G. Vekinis, "Joining of SiC, MgO and $MgAl_2O_4$ and ferrous metals using SHS"
P-E21	Naoto Yasuda, Tohru Tsuchiya, Shino Sasaki, Noriyuki Okinaka, Tomohiro Akiyama, "Initial activation behavior of LaNi5 produced by self-ignition combustion synthesis using hydrogenation heat of calcium"
P-E22	Chuncheng Zhu, Xiaodong He, Xunkun Qian, Guobing Ying, "Combustion synthesis and thermal stability of Ti_3AlC_2"

F) Industrialization of SHS

P-F1	E.E. Dilmukhambetov, Z.A. Mansurov, S.M. Fomenko, "Electric conductivity of carbon containing SHS-refractory materials"
P-F2	A.E. Kudryashov, E.A. Levashov, Yu.S. Pogozhev, I.I. Kurbatkin, "Pulsed Electrospark Strengthening of Stamp Rigging Using Advanced Nanostructured Electrode Materials"
P-F3	I.I. Kurbatkin, A. E. Kudryashov, "The effects of electrospark alloying on contact surfaces in sliding pairs"
P-F4	V.N. Sanin, D.E. Andreev, D.M. Ikornikov, V.I. Yukhvid, "SHS metallurgy of Heat-Resistant Nonferrous Alloys under high gravity"
P-F5	I.V. Shishkovsky, M.V. Kuznetsov, Yu.G. Morozov, "Comparative microstructural analyses and histomorphological studies of tissue reactions to porous titanium and nitinol implants produced by SHS-SLS"

20:00 - late ***Symposium Banquet-by-the-sea***

Friday 9 September 2011

09:00 – 9:45	**Session 8P – PLENARY**
	Chair: S. Son
P8: George Vekinis, "Strategy development for the transfer of new technologies to industry: converting a clever Invention to a valuable Innovation"	

10:00 – 12:30 Parallel Sessions

	Session Parallel 8A: Industrialization of SHS-F2	Session Parallel 8B: Chemistry and Technology of SHS processes-C2
	Chair: A. Inigo	Chair: X. He
10:00	8A-K: Keynote Talk: E.E. Wolf , A.S. Mukasyan, "Solution Combustion Synthesis of Catalysts: Methodology and Applications"	8B-1: Xiaodong He, Guobing Ying, Shanyi Du, Yongting Zheng, Chuncheng Zhu, "In situ synthesis and mechanical properties of $M_{n+1}AX_n$ phases by SHS/PHIP"
10:30	8A-1: V.P. Kobyakov, "Frontal Combustion of Energetic Composition into the Envelope: Using for the Heat Sources 'Running Heatwave' Type"	8B-2: Maki Hiramoto, Noriyuki Okinaka, Tomohiro Akiyama, "Self-propagating High-temperature Synthesis of Nonstoichiometric Manganese Oxide"
10:50	8A-2: I. Agote, G. De Cortazar, M.A. Lagos, M. Gutierrez, "Production of Ti/TiB master alloy by SHS process for the obtaining Ti composites for the aeronautic industry"	8B-3: K. Hirota, H. Yagura, K. Takaoka, M. Kato, "Fabrication of TiN particle-dispersed Al_2O_3 composites utilizing high N_2-pressure SHS"

11:10 – 11:30 **Coffee**

11:30	8A-3: A.P. Amosov, A.F. Fedotov, A.A. Ermoshkin, S.I. Altukhov, K.S. Smetanin, E.I. Latukhin, V.N. Lavro, "SHS compacting multi-component cathodes on the base of high-melting titanium compounds for arc-physical vapour deposition of nanocomposite coatings"	8B-4: O.K. Kamynina, A.E. Sytschev, O.D. Boyarchenko, S.G. Vadchenko, L.M. Umarov, E. Gutmanas, I. Gotman, "Synthesis of reinforced materials by thermal explosion"
11:50	8A-4: H.I. Won, H. Nersisyan, C. W. Won, "Combustion synthesis of silicon based oxy-nitride phosphor for LED application"	8B-5: A.E. Sytschev, S.G. Vadchenko, D. Vrel, N.V. Sachkova, and D.Yu. Kovalev, "SHS joining of intermetallics with metal substrates"
12:10	8A-5: D. Yu. Kovalev, V. Prokudina, V. Ratnikov, V. Ponomarev, "Thermal decomposition of SHS-produced TiH_2 powder" POSTER IN PS3	8B-6: Ryuichi Tomoshichun, Syun-ya Itaya, Katsunari Oikawa, Kiyohito Ishida, "Preparation of Mo-added zirconium carbosulfides by self-propagating high temperature synthesis"

12:30 – 13:30 **Lunch**

13:30 – 15:00 **Special Session: Round table Discussions**
Chair: Alexander.G. Merzhanov

15:20 – 15:40 **Coffee**

15:40 – 16:30 **CLOSING SESSION – CONCLUSIONS**
LOOKING AHEAD – NEXT SHS SYMPOSIUM XII "SHS2013"
Short presentations by prospective organizers of SHS2013

END OF SHS2011 SYMPOSIUM

SHS 2011
PROGRAMME OVERVIEW

Time	MONDAY 5 September 2011		TUESDAY 6 September 2011			WEDNESDAY 7 September 2011		THURSDAY 8 September 2011			FRIDAY 9 September 2011	
09:00	Registration		S-3P: Plenary P3			S-5P: Plenary P5		S-6P: Plenary P6			S-8P: Plenary P8	
10:00	OPENING CEREMONY Welcoming and Symposium Overview		S-3A Keyn. 3AK		S-3B Keyn. 3BK	S-5A Keyn. 5BK	S-5B Oral 5B-1	S-6A Keyn. 6AK		S-6B Oral 6B-1	S-8A Keyn. 8AK	S-8B Oral 8B-1
10:30			Oral 3A-1		Oral 3B-1	Oral 5A-1	Oral 5B-2	Oral 6A-1		Oral 6B-2	Oral 8A-1	Oral 8B-2
10:50	Address by Prof. Acad. Alexander G. Merzhanov		Oral 3A-2		Oral 3B-2	Oral 5A-2	Oral 5B-3	Oral 6A-2		Oral 6B-3	Oral 8A-2	Oral 8B-3
11:10			Coffee			Coffee		Coffee			Coffee	
11:30	Coffee		Oral 3A-3		Oral 3B-3	Oral 5A-3	Oral 5B-4	Oral 6A-3		Oral 6B-4	Oral 8A-3	Oral 8B-4
11:50	S-1P:Plenary P1		Oral 3A-4		Oral 3B-4	Oral 5A-4	Oral 5B-5	Oral 6A-4		Oral 6B-5	Oral 8A-4	Oral 8B-5
12:10			Oral 3A-5		Oral 3B-4	Bus Tour to Archaeological Sites on the Peloponnese (Mycenae, Epidaurus). Packed lunch and dinner at a traditional "taverna" and return to EDEN at about 10pm		Oral 6A-5			Oral 8A-5	Oral 8B-6
12:30	LUNCH		LUNCH					LUNCH			LUNCH	
13:30	S-2P:Plenary P2		S-4P: Plenary P4					S-7P: Plenary P7			Special Session: Round Table Discussions	
14:30	S-2A Keyn. 2AK	S-2B Keyn. 2BK	S-4A Keyn. 4AK	S-4B Keyn. 4BK	S-4C Keyn. 4CK			S-7A Keyn. 7AK	S-7B Oral 7B-1	S-7C Keyn. 7CK		
15:00	Oral 2A-1	Oral 2B-1	Oral 4A-1	Oral 4B-1	Oral 4C-1			Oral 7A-1	Oral 7B-2	Oral 7C-1		
15:20	Oral 2A-2	Oral 2B-2	Oral 4A-2	Oral 4B-2	Oral 4C-2			Oral 7A-2	Oral 7B-3	Oral 7C-2	Coffee	
15:40	Coffee		Coffee					Coffee			CLOSING CEREMONY Conclusions Looking Ahead - Next Symposium	
16:00	Oral 2A-3	Oral 2B-3	Oral 4A-3	Oral 4B-3	Oral 4C-3			Oral 7A-3	Oral 7B-4	Oral 7C-3		
16:20	Oral 2A-4	Oral 2B-4	Oral 4A-4	Oral 4B-4	Oral 4C-4			Oral 7A-4	Oral 7B-5	Oral 7C-4	END OF SHS2011	
16:40	Oral 2A-5	Oral 2B-5	Oral 4A-5	Oral 4B-5	Oral 4C-5			Oral 7A-5	Oral 7B-6	Oral 7C-5		
17:00	Oral 2A-6	Oral 2B-6	POSTER SESSION PS2					Oral 7A-6		Oral 7C-6		
17:20	POSTER SESSION PS1							POSTER SESSION PS3				
17:40												