TENTATIVE PROGRAM of the SHS'2001 Symposium
October 14 Sunday (Hall)

10:30-13:00 ***Opening Ceremony***
Welcoming speeches

Plenary and invited lectures

(PL-1-210) Conception and development of SHS in Israel
E. Gutmanas - Israel

(IL-1-211) Trends in Ceramic Materials Development into the Third Millennium
R. Brook - UK

SHS on the Pathway to Industrialization
(PL-2-185) *A.G. Merzhanov - Russia*

13:00-14:30 **Lunch**

Minireviews-1

14:30-15:15 Kinetics and Thermodynamics of SHS Reactions
(MR-1-119) *J. Puszynski -USA*
15:15-16:00 SHS in Electric and Magnetic Fields
(MR-2-169) *Yu.M. Maksimov - Russia*

16:00-16:20 **Coffee-break**

Minireviews-2

16:20-17:05 Mechanical Alloying in SHS Research
(MR-3-176) *F. Bernard - France*
17:05-17:50 SHS-Produced Composite Materials
(MR-4-171) *S. Yin - China*

Invited lectures **(Hall)**

October 15 Monday

12:00-13:00 Superconductive Oxides
(IL-2-00) *P. Chu - USA*

October 16 Tuesday

12:00-13:00 Nanocrystalline Ceramics By Solid-State Thermolysis
(IL-3-220) of Metalorganic Polymers
F. Aldinger, A. Zimmermann - Germany

October 17 Wednesday

12:00-13:00 Computational Materials Design: Performance and
(IL-4-219) Processability
G. B. Olson - USA

October 15 Monday Hall #1

S-1.
Combustion and Synthesis-1

8:40-9:10	**Keynote Lecture**
(K-8-178)	SHS of Complex Ceramic Materials and Their Properties *R. Pampuch, J. Lis – Poland*
9:10-9:30	Chemical Activation of SHS of Aluminum and
(O-1-60)	Titanium Nitrides *V. Rosenband, A. Gany – Israel*
9:30-9:50	On Combustion Wave Structure at SHS of Composite
(O-1-25)	Ceramics of BN-SiO_2 *V.E. Loryan, I.P. Borovinskaya - Russia*
9:50-10:10	The Synthesis of Sulfides in Combustion Regime
(O-1-101)	*R.K. Tukhtaev, V.V. Boldyrev, A.I. Gavrilov, S.V. Larionov - Russia*

10:10-10:30 **Coffee-break**

October 15 Monday Hall #1

S-2.
Combustion and Synthesis-2

10:30-10:50	Reaction Parameters of Si_3N_4 Combustion Synthesis
(O-1-142)	*I.G. Cano, V.V. Grachev, M.A. Rodríguez – Spain, Russia*
10:50-11:10	The Laws of Activated Combustion Front Propagation
(O-1-130)	in SiO_2-Al-C System at Directed Gas Infiltration *L.S. Abovyan, H.H. Nersisyan, S.L. Kharatyan, R. Orrù, G. Cao – Armenia, Italy*
11:10-11:30	Obtaining of Single-Phase Compounds of TiAl
(O-1-63)	*G. Oniashvili, G. Tavadze, Z. Aslamazashvili - Georgia*
11:30-11:50	High Pressure Bulk Nitridation of Transition Metal
(O-1-163)	Elements by Combustion *A. Martinelli, M. Ferretti - Italy*

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00	Superconductive Oxides
(IL-2-00)	*P. Chu - USA*

13:00-15:00 **Lunch and *Poster Session #1***

October 15 Monday Hall #1

S-3.
Electromagnetic Fields

15:00-15:30	**Keynote Lecture**
(K-11-180)	Electrothermal Explosion (ETE) Method to Study the Kinetics of Fast High-Temperature Reactions in Condensed Systems *A.S. Shteinberg - Russia*
15:30-15:50	Microwave Sintering of a Combustion Synthesized AlN
(O-1-95)	Powder *J. Cheng, D.K. Agrawal, S-L. Chung, H.-J. Chen, C.-H. Chen - USA, Taiwan*
15:50-16:10	Magnetic and Electric Fields Produced by SHS
(O-1-3)	*D. Luss, M.D. Nersesyan, J.R. Claycomb, J.T. Ritchie, J.H. Miller, Jr., J.T. Richardson – USA, Russia*
16:10-16:30	Electrophysic Peculiarities of SHS Processes in Metallic
(O-1-102)	and Metal-Like Systems

A.I. Kirdyashkin, Yu.M. Maksimov, V.S. Korogodov, V.L. Polyakov, V.D. Kitler, V.V. Burkin - Russia

16:30-16:50 **Coffee-break**

October 15 Monday Hall #1

Organizers:
V.A. Barzykin (Russia)
I. Gotman (Israel)

Round Table-1.

16:50-18:10 **Thermal Explosion**

October 15 Monday Hall #2

S-4.
Ceramics and Composites-1

8:40-9:10 (K-2-189) **Keynote Lecture**
Reactive Casting of Ceramic Composites
N. Claussen – Germany

9:10-9:30 (O-1-9) SHS Fabrication of Alumina-Reinforced High-Temperature Alloys
N. Travitzky, N. Claussen, E.Y. Gutmanas – Germany, Israel

9:30-9:50 (O-1-33) SHS of New Ceramic Composition Materials
O. Okrostsvaridze, G. Tavadze, A. Khvadagiani, K. Lekishvili – Georgia

9:50-10:10 (O-1-93) A New SHS Method for Synthesis of AlN Powder
C.-N. Lin, J.-C. Chen, S.-J. Liou, Sh.-L. Chung – Taiwan

10:10-10:30 **Coffee-break**

October 15 Monday Hall #2

S-5.
Ceramics and Composites-2

10:30-10:50 (O-1-188) SHS-derived oxynitride ceramic materials
D. Zientara, J. Lis - Poland

10:50-11:10 (O-1-135) SHS of Titanium Silicides and Their Properties
J. Lis, M. Cyganik, L. Chlubny -Poland

11:10-11:30 (O-1-145) Carbides and Borides Produced through SHS Process
P.L. De Cola, D. Vallauri, I. Amato - Italy

11:30-11:50 (O-1-197) Fabrication of Ceramic-Metal Layered Composites by SHS/QP
Z.Y. Fu, W.M. Wang, H. Wang, Q.J. Zhang, R.Z. Yuan - China

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-2-00) Superconductive Oxides
P. Chu - USA

13:00-15:00 **Lunch and *Poster Session #1***

October 15 Monday Hall #2

S-6.
Intermetallics

15:00-15:30 (K-4-203) **Keynote Lecture**
Spark Plasma Sintering of Several Intermetallic Compounds Prepared by SHS
K. Hirota, S. Nakane, M. Yoshinaka, O. Yamaguchi - Japan

15:30-15:50 (O-1-7) Structure of Ti-Al Powder Mixture Synthesis Product Realised in Condition of Thermal Explosion with Varied Heat Removal
V.Y. Philimonov, V.V. Evstigneev - Russia

15:50-16:10 (O-1-140) Welding of Intermetallic Nickel Aluminide by SHS Reaction
K. Matsuura, T. Koyanagi, M. Kudoh, J.-H. Oh, S. Kirihara, Y. Miyamoto - Japan

16:10-16:30 (O-1-221) SHS-Fabrication of $MoSi_2$-based composites for High Temperature Applications
E.A. Shtessel, R.C. Castro, A.J. Thom - USA

16:30-16:50 **Coffee-break**

Round Table-3

Organizers:
I.P. Borovinskaya (Russia)
R. Pampuch (Poland)

16:50-18:10 **SHS Ceramics: Synthesis and Application**

October 15 Monday Hall #3

S-7. Combustion Theory and Modeling-1

8:40-9:10 (K-13-38) **Keynote Lecture**
On Spinning Modes of Gasless Combustion
L. Kagan, G. Sivashinsky - Israel, USA

9:10-9:30 (O-1-61) Structure and Variability of Spinning Reaction Waves in Cylindrical Sample
T.P. Ivleva, A.G. Merzhanov - Russia

9:30-9:50 (O-1-50) Modeling of Nonstationary Combustion Wave in Heterogeneous Systems
A.G. Merzhanov, P.M. Krishenik, K.G. Shkadinskii - Russia

9:50-10:10 (O-1-90) Non-Steady-State Modes of Filtration Combustion
V.V. Grachev - Russia

10:10-10:30 **Coffee-break**

October 15 Monday Hall #3

S-8. Combustion Theory and Modeling-2

10:30-11:00 (K-9-13) **Keynote Lecture**
Critical Phenomena at Autowave Propagation
E.N. Rumanov - Russia

11:00-11:20 (O-1-153) Evolution of Routes to Chaos in Condensed Phase Combustion with Melting
C.S. Raymond, A. Bayliss, B.J. Matkowsky, V.A. Volpert - USA

11:20-11:40 (O-1-129) Experimental and Theoretical Study of Solid Product Microstructure Formation During SHS
A.S. Rogachev, S.A. Kirillov, I.M. Kotin - Russia, Belarus

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-2-00) Superconductive Oxides
P. Chu - USA

13:00-15:00 **Lunch and *Poster Session #1***

October 15 Monday Hall #3

S-9.
Combustion Theory and Modeling-3

15:00-15:30 (K-5-179) **Keynote Lecture**
Dynamics of hot spots in solid flame propagation
B.J. Matkowsky - USA

15:30-15:50 (O-1-83) The Convective Mode of the Reaction Front Propagation: A New Mechanism of Combustion of 'Gasless' Systems
B.S. Seplyarskii - Russia

15:50-16:10 (O-1-108) Percolation Combustion: Is It Possible in SHS?
O.S. Rabinovich, B.B. Khina, P.S. Grinchuk, A.V. Belyaev - Belarus

16:10-16:30 (O-1-113) Steady-State Combustion Wave Characteristics
A.P. Aldushin, A. Bayliss, B.J. Matkowsky - Russia, USA

16:30-16:50 **Coffee-break**

October 15 Monday Hall #3

S-10.
Combustion Theory and Modeling-4

16:50-17:10 (O-1-190) Features of Compaction Kinetics of Powder Materials in Nonisothermal Conditions
L.S. Stelmakh, A.M. Stolin - Russia

17:10-17:30 (O-1-162) The Local Ignition of a Solid by the Heat Beam, Both Fixed and Moving Across the Surface
A.D. Margolin, V.G. Krupkin, V.S. Posvianskii - Russia

17:30-17:50 (O-1-19) Novell Evolutionary Modeling of SHS Systems
S.Å. Zakiev - Russia

17:50-18:10 (O-1-181) Qualitative analysis of physical and physicochemical effects leading to the intrinsic electrical voltages in SHS-waves propagation fronts
I.A. Filimonov, N.I. Kidin - Russia

October 16 Tuesday Hall #1

S-11.
Dynamics of Phase Formation

8:40-9:00 (O-2-175) Mechanism of the SHS Reaction Nb+Al ➔$NbAl_3$ Using Synchrotron TRXRD Experiments Coupled with Infrared 2D Observations
V. Gauthier, J.P. Larpin, E. Gaffet, D. Vrel - France

9:00-9:20 (O-2-177) New Improvements of TRXRD Experiments at Lure on H10 Beamline
D. Vrel, S. Paris, N. Girodon-Boulandet, J.-F. Mazué, E. Couqueberg, M. Gailhanou, D. Thiaudière, E. Gaffet, F. Bernard, J.-C. Gachon - France

9:20-9:40 (O-2-79) Dynamics of Phase Formation During Combustion of the Ti-B and Ti-C Systems in Nitrogen and Air
D.Yu. Kovalev, V.M. Shkiro, V.I. Ponomarev - Russia

9:40-10:00 (O-2-120) Pressure-Assisted SHS Synthesis of Ti_2AlC and $Ti_3Al_{1.1}C_{1.8}$
Y. Khoptiar, I. Gotman, E.Y. Gutmanas - Israel

10:00-10:10 (O-2-218) Microstructure and Mechanical Properties of IN-SITU NiAl-Based Composites Strengthened by TiC
J.T. Guo, C.Y. Cui, G.S. Li, D.T. Jiang - China

10:10-10:30 **Coffee-break**

October 16 Tuesday Hall #1

S-12.
Structure Formation

10:30-10:50 (O-2-127) Formation Mechanism of (Mo, W)Si_2 Prepared by Self-Propagating High-Temperature Synthesis
Y. Choi, Y.-S. Kim J.-S. Lee, H. Shim - Korea

10:50-11:10 (O-2-134) A "Micrometallurgical" Model of Phase and Structure Formation in SHS
B.B. Khina, O.S. Rabinovich, B. Formanek, A.V. Belyaev – Belarus, Poland

11:10-11:30 (O-2-57) Microstructure Formation Mechanism of TiO_2—B_2O_3—Mg System During Combustion Synthesis
W. Wang, Z. Fu, H. Wang, R.Z. Yuan - China

11:30-11:50 (O-2-187) Combining SHS and superplastic deformation in titanium carbide
N.G. Zaripov, R.R. Kabirov - Russia

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-3-220) Nanocrystalline Ceramics By Solid-State Thermolysis of Metalorganic Polymers
F. Aldinger, A. Zimmermann - Germany

13:00-15:00 **Lunch and *Poster Session #2***

October 16 Tuesday Hall #1

S-13.
Densification

15:00-15:30 (K-3-195) **Keynote Lecture**
Present Status and Trends of SHS FGM
C.C. Ge - China

15:30-15:50 (O-2-39) Peculiarities of the Functionally Graded Targets Formation in Combustion Wave of the SHS-Systems with Working Layer Ti-Si-B, Ti-Si-C, Ti-B-N, Ti-Al-B, Ti-C
E.A. Levashov, B.R. Senatulin, A.S. Rogachev, A.E. Grigoryan, J.J. Moore – Russia, USA

15:50-16:10 (O-2-156) Quasi-Isostatic Densification of Combustion Synthesized Powder Cermets
E.A. Olevsky, M.A. Meyers - USA

16:10-16:30 (O-2-78) Densification of High-Melting Point Nitrides Compounds under Self-Propagating High-Temperature Synthesis
K.L. Smirnov, I.P. Borovinskaya - Russia

16:30-16:50 **Coffee-break**

Round Table-2.

Organizers:
J.-C. Gachon (France)
A.S. Rogachev (Russia)

16:50-18:10 **Phase and Structure Formations in SHS Processes**

October 16 Tuesday Hall #2

S-14.
Gravity SHS-1

8:40-9:10 (K-7-186) **Keynote Lecture**
Effect of gravity on the combustion synthesis of engineered, advanced materials
X. Zhang, M. Castillo, F.D. Schowengerdt, R. Ayers, H.-C. Yi, J.Y. Guigne, J.J. Moore - USA

9:10-9:30 (O-2-6) SHS of Oxide and Composite Materials under Centrifugal Forces
V.I. Yukhvid, V.N. Sanin, M.D. Nersesyan, D. Luss -

Russia, USA

9:30-9:50 (O-2-114) Ceramic Lined Steel Elbow Made by SHS-Gravitational Process
T. Lin, S. Yin, Z. Guo, S. Guo - China

9:50-10:10 (O-2-182) Gravity induced effects in SHS
H.E. Grigoryan, A.S. Rogachev, A.E. Sytschev, S.E. Zakiev - Russia

10:10-10:30 **Coffee-break**

October 16 Tuesday Hall #2

S-15.
Gravity SHS-2

10:30-10:50 (O-2-151) Studies of Reaction and Solidification of Manufacture Process of Ceramic-Lined Composite Steel Pipes by SHS
S.-G. Zhang, X.-X. Zhou, D.-H. Qian - China

10:50-11:10 (O-2-146) The Effect of Melt Infiltration in High-Gravity Fields
V.N. Sanin, V.I. Yukhvid, A.G. Merzhanov - Russia

11:10-11:30 (O-2-125) Effect of Gravity on High-Temperature Self-Propagating Reactions: The Case of the Fe/TiC and $Cu_2O/Al/Al_2O_3$ Systems
E. Medda, R. Orrù, A.M. Locci, G. Cao - Italy

11:30-11:50 (O-2-160) Mechanistic Studies of Combustion and Structure Formation During Synthesis of Advanced Materials: Effects of Gravity
A.S. Mukasyan, C. Lau, A. Varma - USA

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-3-220) Nanocrystalline Ceramics By Solid-State Thermolysis of Metalorganic Polymers
F. Aldinger, A. Zimmermann - Germany

13:00-15:00 **Lunch and *Poster Session #2***

October 16 Tuesday Hall #2

S-16.
Organic Processes

15:00-15:30 (O-2-152) **Keynote Lecture** Frontal Polymerization Caused by Centrifugal Field
V. Briskman, K. Kostarev, A. Shmyrov - Russia

15:30-15:50 (O-2-12) Self-Propagating High-Temperature Synthesis of Polymers of Acrylamide Complexes of Transient Metals
A.G. Merzhanov, A.M. Stolin, L.S. Stelmakh - Russia

15:50-16:10 (O-2-107) The Role of Liquid- and Gas-Phase Constituents of the Organic SHS Mechanism in Formation of Piperazine Malonate Microstructure
E.G. Klimchuk, V.I. Ponomarev, A.G. Merzhanov - Russia

16:10-16:30 (O-2-66) Joining of Carbon Fibre Reinforced SiC (C/SiC) to Ni-based Superalloy with Multiple Interlayer
S. Li, X. Liang, H. Duan - China

16:30-16:50 **Coffee-break**

Round Table-4

Organizers:
V.I. Yukhvid
O. Odawara

16:50-18:10 **Gravitational SHS Technology**

October 16 Tuesday Hall #3

S-17.
Films and Coatings

8:40-9:00 (O-2-40) Structure and Properties of Multicomponent Thin Films Based on the Systems Ti-Si-N and Ti-X-B-N (X=Al,Si or Cr) Deposited by Magnetron Sputtering Using SHS-Targets
D.V. Shtansky, A.N. Sheveiko, E.A. Levashov, S.A. Kulinich, J.J. Moore – Russia, USA

9:00-9:20 (O-2-20) Self-Propagating High-Temperature Synthesis and Solid-State Reactions in Thin Films
V.G. Miagkov, L.E. Bykova - Russia

9:20-9:40 (O-2-44) Structure and Properties of SHIM-Alloys and ESA-Coatings Strongly Modified by Nanosized Particles
O.V. Malochkin, E.A. Levashov, A.E. Kudryashov, F. Gammel, R. Suchentrun – Russia, Germany

9:40-10:00 (O-2-126) Self-Propagating Combustion Synthesis and Plasma Spraying Deposition of TiC-Fe Powders
R. Licheri, R. Orrù, A.M. Locci, G. Pilloni, G. Cao - Italy

10:10-10:30 **Coffee-break**

October 16 Tuesday Hall #3

S-18.
Ecology

10:30-10:50 (O-2-123) State of the Art and Future Directions on Self-Propagating Reactions for Environmental Protection
R. Orrù, A. Concas, A. Uda, G. Usai, G. Cao - Italy

10:50-11:10 (O-2-57) The Using of SHS-Technology for Immobilization of Radioactive Wastes
T.V. Barinova, I.P. Borovinskaya, V.I. Ratnikov, T.I. Ignatjeva - Russia

11:10-11:30 (O-2-136) Production of Titanium Carbide–Alumina System Composites from Woody Waste Materials or Wastepaper Utilizing Self-Propagating High-Temperature Synthesis
R. Tomoshige, T. Ashitani, T. Higa, A. Kato, K. Sakai - Japan

11:30-11:50 (O-2-23) Pollution-Free SHS Generator of Fire-Extinguishing Aerosol
A.P. Amosov, A.R. Samboruk, V.A. Rekshinsky, A.G. Makarenko, E.V. Kuznets - Russia

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-3-220) Nanocrystalline Ceramics By Solid-State Thermolysis of Metalorganic Polymers
F. Aldinger, A. Zimmermann - Germany

13:00-15:00 **Lunch and *Poster Session #2***

October 16 Tuesday Hall #3

S-19. Shock-Wave Effects

15:00-15:20 (O-2-16)	Mesoscopic Events in Fast Solid Phase Reactions *H.J. Viljoen, D. Sornette – USA, France*
15:20-15:40 (O-2-131)	The Fabrication of Cermets Using SHS with Explosive Compaction *E.P. Carton, A. Boluijt, M. Stuivinga, J.C. van Wortel – Netherlands*
15:40-16:00 (O-2-200)	Chemical and structural transformations in shock-loaded titanium-carbon powder mixture *Yu.A. Gordopolov, S.S. Batsanov, S.I. Gavrilkin, A.Yu. Gordopolov - Russia*
16:00-16:20 (O-2-28)	On Theory of "Cold Ignition" of Combustion-Like Waves in Solid-Phase Reactions *A. Pumir, V.V. Barelko - France, Russia*

16:30-16:50 **Coffee-break**

October 16 Tuesday Hall #3

S-20. Refractory Materials

16:50-17:10 (O-2-103)	Carbon-Containing SHS Refractory Materials on the Base of Chrome Sludge *Z.A. Mansurov, I. Vangai, J.T. Akhmetova, R.M. Mansurova – Kazakhstan*
17:10-17:30 (O-2-206)	*In-situ* Concurent Generation of Reducing Atmospheres During SHS *G. Xanthopoulou - Greece*
17:30-17:50 (O-2-128)	Growth at Plasma-Arc Melting of SHS Products and Reactive SHS Mixtures *Yu.A. Sapronov, M.A. Ponomarev - Russia*
17:50-18:10 (O-2-53)	Microstructural Investigation of SHS Produced Zirconium Diboride *S.K. Mishra (Pathak), S. Das, S.K. Das, P. Ramchandrarao – India*

October 17 Wednesday Hall #1

S-21. Macrokinetics-1

8:40-9:10 (K-10-59)	**Keynote Lecture** Mutual Interdependence Between SHS Reaction and Gas Infiltration During Thermal Explosion *K.G. Shkadinskii – Russia*
9:10-9:30 (O-3-74)	Pressure-Assisted Reactive Processing of Mg-SiO_2 Powder Blends *I. Gutman, L. Klinger, I. Gotman, M. Shapiro - Israel*
9:30-9:50 (O-3-72)	Macrokinetic Laws of Activated Combustion of Silicon-Nitride-Based Composite Powders *H.L. Khachatryan, H.H. Nersisyan, S.L. Kharatyan – Armenia*
9:50-10:10 (O-3-35)	Conducting SHS Reactions Using Spherical Pellets *H.C. Yi, J.Y. Guigné, J.J. Moore, F.D. Showebgerdt - Canada, USA*

10:10-10:30 **Coffee-break**

October 17 Wednesday Hall #1

S-22.
Macrokinetics -2

10:30-10:50 (O-3-81) Macrokinetics of Interaction of Zr with C under Electro Thermal Explosion
V.A. Shcherbakov, K.V. Popov - Russia

10:50-11:10 (O-3-89) On Combustion Behavior of Nano-Scale SHS Reactions
C.-C. Chen, M.-C. Chiu, - Taiwan

11:10-11:30 (O-3-104) Combustion Modes for Highly-Diluted Ti + 2B System
S.G. Vadchenko, I.A. Filimonov - Russia

11:30-11:50 (O-3-158) Synthesis of Mg_2Si via Thermal Explosion Mode of SHS: Experimental Observation and Modeling
D. Horvitz, L. Klinger, I. Gotman - Israel

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-4-219) Computational Materials Design: Performance and Processability
G.B. Olson – USA

13:00-15:00 **Lunch**

October 17 Wednesday Hall #2

S-23.
Nanomaterials

8:40-9:10 (K-1-10) **Keynote Lecture**
Ductile, Machinable Ternary Carbides and Nitrides: A New Class of Solids; Polycrystalline Nanoaluminides
M.W. Barsoum - USA

9:10-9:30 (O-3-92) Theoretical and Technological Aspects of Synthesis of Nano- and Micro-Crystal Composite Powders and Prospects of Their Industrial Application
P.A. Vityaz, A.Ph. Ilyuschenko, A.V. Beliaev, T.L. Talako - Belarus

9:30-9:50 (O-3-154) Microwave SHS Synthesis of Silicon Carbide Submicron Powders
T. Chudoba, D. Kuzmenko, A. Presz, W. Lojkowski, J. Binner, T. Cross – Poland, UK

9:50-10:10 (O-3-173) Feasibility of Synthesis of Dense Nanomaterials from Mechanically-Activated Powders
F. Bernard, F. Charlot, S. Paris; Ch. Gras, E. Gaffet, Z.A. Munir - France, USA

10:10-10:30 **Coffee-break**

October 17 Wednesday Hall #2

S-24.
Mechanochemistry

10:30-11:00 (K-12-198) **Keynote Lecture**
SHS TiB_2 Based Multi Phase Ceramics and Composites
R.Z. Yuan (China)

11:00-11:20 (O-3-41) Physical Chemical and Technological Aspects for Application of Novel SHS – Refractory Ceramic Materials
M.R. Filonov, E.A. Levashov, I.P. Borovinskaya, V.A. Bunin, A.N. Korshikov - Russia

11:20-11:35 (O-3-174) Reactivity Study of a Dense Nanostructured $MoSi_2$ Elaborated from MAFAPA Process
Ch. Gras, E. Gaffet, J.P. Larpin, C. Valot, Z.A. Munir, F. Bernard - France, USA

11:35-11:50 (O-3-88) The Application of Mechanical Activation to the Performance of Solid-State Combustion Regime in SHS-Systems
M.A. Korchagin, T.F. Grigorieva, B.B. Bokhonov, A.P. Barinova, N.Z. Lyakhov - Russia

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-4-219) *Computational Materials Design: Performance and Processability*
G.B. Olson – USA

13:00-15:00 **Lunch**

October 17 Wednesday Hall #3

S-25.
SHS of Oxide Materials

8:40-9:00 (O-3-139) High-Resolution Time-Resolved X-ray Diffraction Studies of SHS Reactions in an External Magnetic Field
Q.A. Pankhurst, L. Affleck, H. Spiers, I.P. Parkin, M.V. Kuznetsov, Å. Kvick, A. Terry, G.B. Vaughan - U.K, Russia, France

9:00-9:20 (O-3-5) Structural and Physicochemical Aspects of Iron by Chromium Substitution and the Effect of Magnetic Field in SHS-Produced Ferrites
M.V. Kuznetsov - Russia

9:20-9:40 (O-3-73) In Situ Synthesis of Oxide Ceramic Matrix Composites (CMC's) Based on Powder Blends of Fly Ash with Magnesium and Aluminum
I. Gutman, I. Gotman, M. Shapiro - Israel

9:40-9:55 (O-3-34) Combustion Synthesis of Glass Matrix Composites
H.C. Yi, J.Y. Guigné, J.J. Moore, F.D. Showengerdt - Canada, USA

9:55-10:10 (O-3-204) Nanoparticles of Oxides through Pyrophoric Decomposition of Metal-Organic Complexes
P. Pramanik, R. Pati, A. Sen - India

10:10-10:30 **Coffee-break**

October 17 Wednesday Hall #3

S-26.
SHS of Ferrites

10:30-10:50 (O-3-91) The Effect of Mechanical Activation on Self-propagating High-temperature Synthesis of Barium Hexaferrite
T.L. Talako, A.V. Belyaev, A. Ilyushchenko, A. Letsko, M.V. Kuznetsov, Yu.G. Morozov, Z. Fu, R.Z. Yuan - Belarus, Russia, China

10:50-11:10 (O-3-132) Neutron Diffraction Study of Li-Cu Ferrites Powders Prepared by Self-Propagating High-Temperature Synthesis
Y. Choi, J.-S. Lee, H. Shim - Korea

11:10-11:30 (O-3-137) SHS in an External Magnetic Field (1.1T, 2T, 4T, 6T, 10T, 12T, 16T, 20T); Preparation and Characterizsation of Ferrites
I.P. Parkin, L. Affleck, Q. A. Pankhurst, M. V. Kuznetsov, M. I. Boamfa, J.A.A.J. Perenboom - UK, Russia, Netherland

11:30-11:50 (O-3-138) SHS of Composite Magnetically Hard-Soft Ferrites
L. Affleck, I.P. Parkin, Q.A. Pankhurst - UK

11:50-12:00 **Technical interval**

Invited lecture (Hall)

12:00-13:00 (IL-4-219) Computational Materials Design: Performance and Processability
G.B. Olson – USA

13:00-15:00 **Lunch**

October 18 Thursday Hall

Advanced Session
"Industrialization"

8:40-9:10 (K-6-11) **Keynote Lecture**
Development of Cybermaterials Engineering
Y. Miyamoto, J. Oh, W. Cao, S. Kirihara, K. Matsuura, M. Kudoh - Japan

9:10-9:30 (O-4-141)
SHS Technology an Industrial Reality
J. Artieda, S. Carretero, N. Makhonin, D.H. Hilera - Spain

9:30-9:50 (O-4-2)
On Mechanolytic Combustion-Synthesis Processes
G. Hida -USA

9:50-10:10 (O-4-1)
Application of Pattern Recognition and Artificial Neural Network to the Optimization of Combustion Synthesis-Hot Pressing Nanocomposites Process
Q. Dong, Q. Tang, W.C. Li – China

10:10-10:30 **Coffee-break**

10:30-10:50 (O-4-29)
Catalytic Gas Nitriding of Metals and Alloys - 5 Years of Scientific Development and Practical Application
V.Ya. Syropyatov, V.V. Barelko, V.M. Zinchenko, L.A. Bykov - Russia

10:50-11:10 (O-4-67)
SHS Regularities and Properties of TiC – SiC Composite Powder and Compact Material
S.S. Mamyan, D.Yu. Belov, A.A. Boldin - Russia

11:10-11:30 (O-4-55)
Continuous SHS Technology and Properties of Soft Magnetic Ferrites
P.B. Avakyan, M.D. Nersesyan, A.G. Merzhanov, J.T. Richardson - Armenia, Russia, USA

11:30-11:50 (O-4-216)
Diamond-Cemented Carbide Composite Fabricated by Induction Field-Activated SHS under Static Compaction
M.Ohyanagi, M.Komatsu, M.Koizumi, S.Hosomi, E.A.Levashov, I.P.Borovinskaya, Z.A.Munir – Japan, Russia, USA

12:00-13:00 ***Closing Ceremony***

13:00-15:00 **Lunch**

Poster Session #1 – October 15 Monday

(P-1-4)
Watergel in Liquid Helium
L.P. Mezhov-Deglin, A.M. Kokotin – Russia

(P-1-8)
Investigation of SHS of Fine Thermal Structure by High-Speed Digital Infra-Red Imaging Method
V.V. Evstigneev, P.Y. Gulyaev, V.I. Yakovlev - Russia

(P-1-18)
Generation of Reaction Spots in a Gasless Combustion Front under the Influence of Heat Losses
B.L. Kopeliovich - Belarus

(P-1-21)
Magnetic Properties and Structural Analysis of Ni-Zn Ferrite Prepared through Self-Propagating High-Temperature Synthesis Reaction by Neutron Diffraction
Y. Choi, H.S. Shim, J.S. Lee - Korea

(P-1-30)
On a Theory of "Ignition" of Catalytic Combustion Reactions by Laser Beam
V. Barelko, K. Pribitkova -Russia

(P-1-31)
The Synthesis of Transition Metal Hydrides in the "Thermal Explosion" Regime in Accelerated Electron Beam
S.K. Dolukhanyan, V.Sh. Shekhtman, N.N. Aghajanyan, Kh.S. Harutyunyan, K.A. Abrahamyan, A.G.

(P-1-86) Synthesis of Chemically Non-uniform Materials from a Homogeneous Green Mixture in the Thermal Explosion Mode
B.S. Seplyarskii, T.P. Ivleva, A.G. Merzhanov - Russia

(P-1-99) Structural Formation of Functional Porous Materials in Combustion Processes of Metallothermic Systems
A.I. Kirdyashkin, R.A. Yusupov, Yu.M. Maksimov, V.D. Kitler - Russia

(P-1-105) TiAl Fabrication by Thermal Explosion
S. Vadchenko, M. Gutierrez, I. Agote, G. Sanzberro, U. Rezabal - Russia, Spain

(P-1-106) Self-Propagating High-Temperature Synthesis of Chromium-Substituted HTSC $RBa_2Cu_{3-x}Cr_xO_{7-y}$ (R = Y; La; Nd; Sm; Yb)
M.V. Kuznetsov, Yu.G. Morozov, I.P. Parkin, Q.A. Pankhurst – Russia, UK

(P-1-112) Combustion Model with an Electric Charge Formation
I. Filimonov, M. Nersesyan, D. Luss - Russia, USA

(P-1-116) Possibility of Electrophysic SHS Phenomena Employment in High-Current Electronics
Yu.M. Maksimov, A.I. Kirdyashkin, V.S. Korogodov, V.A. Polyakov - Russia

(P-1-122) Chemical Activated Combustion Synthesis of Carbides
R. Licheri, R. Orrù, A. M. Locci, G. Cao - Italy

(P-1-144) Anomalous Behavior of High-Temperature Resistivity in Nitride SHS-Ceramics
A.V. Karpov, I.P. Borovinskaya, Yu.G. Morozov, V.A. Bunin - Russia

(P-1-147) The Dynamics of the SHS Reaction in Thin Film Multilayers Materials Based on the Ti-Al Composition
N.G. Elistratov, V.I. Khvesyuk, A.N. Nosyrev, P.A. Tsygankov - Russia

(P-1-150) Study of the Strength-Structural and Fractal Characteristics of SHS TiB_2-AlN-Based Ceramics
N.S. Pesotskaya, V.A. Bunin - Russia

(P-1-155) New Non-Copper-Oxide HTSC on the Basis of Magnesium Diboride Obtained by Thermoinitiated SHS Method
P.I. Antipov, N.S. Ovanesyan, S.G. Bakhtamov, V.I. Kulakov, Yu.G. Morozov - Russia

(P-1-157) SHS Wave Propagation in Mg-Si System
D. Horvitz, I. Gotman - Israel

(P-1-159) Combustion Synthesis of Al_2O_3-Ti Aluminide Composites: Effect of Starting Composition
D. Horvitz, I. Gotman - Israel

(P-1-165) Microstructure of SHS-Derived Sialons
D. Kata, J. Lis - Poland

(P-1-166) Synthesis Intermetallics under Laser Sintering of Powdered SHS Compositions
I.V. Shishkovsky - Russia

(P-1-168) About Mechanisms of Reaction Front Self-Organization in Liquid Flame Combustion
A.I. Lesnikovich, S.A. Kirillov - Belarus

(P-1-183) Application of the Synchrotron radiation for dynamics study of SHS-processes
E.B. Pismenskaya, A.S. Rogachev, V.V. Alexandrov, B.P. Tolochko, M.R. Sharafutdinov, O.X. Evdokov, D.Y. Naumov - Russia

(P-1-184) Modeling an emergency situation in atomic reactor by SHS
N.U. Medvedeva, V.I. Yukhvid, V.N. Sanin, S.V. Rodinov - Russia

(P-1-191) Hydrodynamics and heat change at the melt spreading along the substrate surface in SHS surfacing
A.V. Yukhvid, L.S. Stelmakh - Russia

(P-1-201) SHS as source of heat
V.D. Zhigarev, V.A. Ovchinnikov - Russia

(P-1-207) The Role of Aluminum in Phase Formation of Products at Combustion of Ternary System Mo-Si-Al
U. Rezaba1, I. Agote, M. Guitérrez, A. Sargsyan, S.

Kharatyan - Spain, Armenia

Poster Session #2 – October 16 Tuesday

(P-2-14) The Automation Equipment with Radiation-Thermometry and Fuzzy Control for SHS Curved Ceramic-Lined Composite Pipes
J. Wang, Z. Zhao, X. Chen, X. Du, M. Ye - China

(P-2-15) SHS of Composite Powders of Refractory Compounds and Compact Materials on Their Base
S.S. Mamyan, D.Yu. Belov, I.P. Borovinskaya, A.N. Pityulin, S.S. Ordanyan - Russia

(P-2-17) SHS of Lead Hexaferrite
K.S. Martirossyan, P.B. Avakyan, M.D. Nersesyan – Armenia, Russia

(P-2-22) Synthesis, Structure and Properties of Conducting TiB_2 - AlN-Based Ceramics
V.A. Bunin, A.V. Karpov, M.Yu. Senkovenko - Russia

(P-2-24) Advanced (New) Ceramics. SHS R&D Standardization
V.K. Prokudina, M.A. Nasonova, T.N. Shteinberg - Russia

(P-2-26) On Melting at SHS of Nitride Ceramics at High Nitrogen Pressure
V.E. Loryan, I.P. Borovinskaya - Russia

(P-2-27) Investigation of Self-Propagating High-Temperature Synthesis of Materials with Micaceous Structure – Fluorophlogopites
V.E. Loryan, V.V. Tkalich - Russia

(P-2-37) Highly Efficient Corrosion-Resistant SHS Filters
I.P. Borovinskaya, A.G. Merzhanov, V.I. Uvarov – Russia

(P-2-42) Deposition of Diamond Films on SHS-Diamond Containing Composites
E.A. Levashov, V.G. Ralchenko, B.V. Spitsyn, M. Ohyanagi, S. Hosomi, M. Koizumi – Russia, Japan

(P-2-43) Development and Industrial Application of New SHS-Electrode Materials for Electrospark Alloying Technologies
A.E. Kudryashov, E.A. Levashov, A.N. Sheveiko, A.M. Stolin, I.I. Tsipin, M. Trtanj, M. Todorovich – Russia, Yugoslavia

(P-2-46) Structure and Properties of Diamond Containing TRESS – Coatings Produced Using New One High Frequency "Elier-Metal" Installation
E.I. Kharlamov, A.E. Kudryashov, E.A. Levashov, M. Ohyanagi, S. Hosomi, M. Koizumi- Russia, Japan

(P-2-48) The Experimental Study of the Ionization Processes in the SHS Wave
Kamynina, N.I. Kidin, V.A. Kudryashov, A.S. Rogachev, L.M. Umarov – Russia

(P-2-52) Simulation of Anisotropic Ceramics Behavior in Shock Waves
A.V. Radchenko - Russia

(P-2-56) SHS of Magnesioferrites
P.B. Avakyan, V.G. Andreev, G.D. Grigoryan, H.V. Abovyan, A.M. Petrosyan, N.M Martirosyan - Armenia

(P-2-58) SHS Densification of Compounds Resistant to High-Temperature Action
A.N. Pityulin, I.P. Borovinskaya - Russia

(P-2-64) New Ceramic Composite Materials Obtained by the Method of Self-Propagation High-Temperature Synthesis
G. Tavadze, O. Okrostsvaridze, A. Khvadagiani, D. Sakhvadze, K. Lekishvili, G. Oniashvili - Georgia

(P-2-71) SHS-Processing of Molybdenum Containing Sulfide Raw Materials

H. Yang - China

(P-2-170) Activation of Green Mixtures with Electromagnetic Field
V.A. Veretennikov, D.I. Slovetsky, V.T. Popov, S.Å. Zakiev, Yu.G. Morozov, M.V. Kuznetsov - Russia

(P-2-172) TiNi Shape Memory Alloy Made by SHS
Z. Guo, C. Chen, S. Sun, S. Yin - China

(P-2-192) Synthesis of Dense *in-situ* Al_2O_3/TiB_2 Composites *via* Thermal Explosion under Pressure
Y. Gutmanas, I. Gotman, M. Shapiro - Israel

(P-2-193) Ba-Ti-Citrate Sol-gel Autoigniting Synthesis of $BaTiO_3$ Nanopowder
F.-R. Hu, C.-C. Ge - China

(P-2-194) Fabrication of Symmetrically Compositional FGM with SHS/Pseudo HIP Technology
C.-C. Ge, W.-P. Shen, W.-B. Cao, A.G. Merzhanov, A.S. Rogachev, H.E. Grigoryan, A.E. Sytschev – China, Russia

(P-2-196) Pilot Scale Production of Fe-TiC Metal Matrix Composite by SHSA
K. Shah, V.P. Deshmukh, B. Bhanushali, M. Mohape, V. Nimbalkar, S.S. Sontakke – India

(P-2-199) Preparation $LaCoO_3$ Perovskite Oxide using Field-activated SHS
H. Wang, Z.Y. Fu, W.M. Wang, R.Z. Yuan - China

(P-2-202) Advanced Ceramics Based on Non-Stoichiometric SiC Synthesised by SHS
M. Gadzyra, G. Gnesin, O. Mykhaylyk - Ukraine

(P-2-205) Joining SiC-Based Materials by SHS
G. Xanthopoulou, G. Vekinis - Greece

(P-2-208) On Possible Synthesis of Single-Phase Tungsten Monocarbide from WO_3 by SHS Method WC –Based Material
V.I. Vershinnikov, I.P. Borovinskaya - Russia

(P-2-209) Electrical Resistance and Thermal Conductivity of Powder Mixtures on Titanium Base for Self-Propagated High-Temperature Materials Synthesis
A.N. Emelyanov, V.M. Shkiro, A.S.Rogachev - Russia

(P-2-212) SHS Transient Liquid Phase Bonding (SHS-TLPB) Between Ceramics and Metal in Composite Pipes
Z. Zhao, M. Ye, J. Wang, J. Cao, G. Yu - China

(P-2-213) Influences of ZrO_2 on Microstructure and Mechanical Properties of Lined Ceramics in Composite Pipes Produced by Gravitational Separation SHS Process
G. Yu, Z. Zhao, M. Ye, J. Wang, L. Zhang - China

(P-2-214) Influences of Precoating on Interface Structures of SHS
J. Cao, Z. Zhao, M. Ye, J. Wang, L. Zhang - China

(P-2-215) SHS Melt-Cast Welding of High-Carbon Steel
J. Li, J. Wang, Y. Yin, S. Li, L.-H. Dong - China

(P-2-217) Induction Field-Activated Synthesis of Spinel-Type Solid Solution from Aluminum Dross
M. Ohyanagi, T. Hashishin, M. Koizumi, Z.A. Munir – Japan, USA