

International Conference
on Combustion Physics and Chemistry
(Samara, Russian Federation, July 24-28, 2018)

TECHNICAL PROGRAM

SAMARA, 2018

July 23, 2018		July 24, 2018 Tuesday	July 25, 2018 Wednesday	July 26, 2018 Thursday	July 27, 2018 Friday		July 28, 2018
	8.30-9.00	Registration					
A r r i v a l o f p a r t i c i p a n t s	9.00-9.20	Opening Remarks	Invited M. Frenklach	Invited F. Qi	Invited V. Gubernov	9.00-9.40	D e p a r t u r e o f p a r t i c i p a n t s
	9.20-10.00	Invited M. Ahmed	Invited S. Robertson	Invited A. Miyoshi	Invited O.Korobeinichev	9.40-10.20	
	10.00-10.40	Invited S. Anderson	Invited Ch. Zhou	Invited F. Zhang	Invited N. Smirnov	10.20-11.00	
	10.40-11.00	Y. Medvedkov					
	11.00-11.20	Coffee Break	Coffee Break	Coffee Break	Coffee Break		
	11.20-11.40	I. Antonov	A. Morozov	Invited	Invited		
	11.40-12.00	A. Chichinin	A. Sharipov	A. Boldyrev	A. Mebel		
	12.00-12.20	A. Thomas	E. Mikheyeva	A. Shmakov	S. Muppala		
	12.20-12.40	D. Porfiriev	D. Lopaev	R.Shaimukhametov	A. Drakon		
	12.40-13.00	A. Stolyarov	V. Perminov	P. Maryandyshev	Closing remarks		
	13.00-14.30	Lunch	Lunch	Lunch	Lunch		
	14.30-15.10	Invited A. Eskola	Invited A. Konnov	A. Krikunova A. Badernikov	Ferry trip along the Volga River 15.30-19.30 City Excursion (3 hours)	14.30-14.50 14.50-15.10	
	15.10-15.30	I. Kosarev	Invited	A. Molokanov			
	15.30-15.50	B.Loukhovitski	O.Vasyutinskii	V. Prokofev			
	15.50-16.10	N. Titova	D. Kozlov				
	16.10-16.30	Coffee Break	Coffee Break				
	16.30-16.50	V. Kobtsev	V. Smirnov				
	16.50-17.10	A.Chukolovsky	A. Volynets				
	17.10-17.30	M. Bulat	R. Joarder				
	17.30-17.50	E. Filimonova	E.Shchepakina				
	17.50-18.10	V. Upyrev	A. Nigay				
	18.10-18.30	S. Torokhov					
	18.30-18.50	S. Golovastov					
Registration	18.50-19.10	M. Al-Jaboori	Poster (18.15-20.00)	Conference dinner (is not included in the conference fee) 19.30- 22.00			
Welcome party 19.30- 21.30							

24 July, Tuesday

9.00-9.20 Opening Remarks

Andrey Prokofiev (Samara National Research University, Russia)
Michael Heaven (Emory University, USA)
Ralf Kaiser (University of Hawaii, USA)
Alexander Mebel (Florida International University, USA)

Session 1.1

Chair: Michael Heaven (Emory University, USA)

9.20-10.00 Musahid Ahmed (LBL, USA) (*Invited*)

Probing Combustion Chemistry with molecular beams and synchrotron radiation

10.00-10.40 Scott Anderson (University of Utah, USA) (*Invited*)

Carbon Oxidation Kinetics by Single Nanoparticle Mass Spectrometry

10.40-11.00 Iakov Medvedkov¹, V. Azyazov¹, A. Mebel^{1,2}, R. Kaiser³ (¹Samara National Research University, Russia, ²Florida International University, USA, ³University of Hawai'i at Mānoa, USA)

Design of a New Generation Molecular Beam Machine

11.00-11.20 Coffee Break

Session 1.2

Chair: Oleg Vasyutinskii (Ioffe Institute, Russia)

11.20-11.40 Ivan Antonov, L. Sheps (*Northwestern University, USA*)

Developing novel PIMS apparatus to study oxidation kinetics at engine-relevant pressures

11.40-12.00 M. Poretskiy¹, Alexey I. Chichinin^{1,2}, C. Maul¹ and K.-H. Gericke¹ (¹Institut für Physikalische und Theoretische Chemie, Technische Universität Braunschweig, Germany, ²Institute of Chemical Kinetics and Combustion and Novosibirsk State University, Russia)

Double-arm three-dimensional ion imaging apparatus for the study of ion pair channels in resonance enhanced multiphoton ionization

12.00-12.20 Aaron M. Thomas¹, M. Lucas¹, L. Zhao¹, J. Liddiard¹, R. Kaiser¹, A. Mebel² (¹University of Hawai'i at Manoa, Honolulu, ² Florida International University, Miami, USA)

Reaction Dynamics of Radical Intermediates formed during Hydrocarbon Combustion

12.20-12.40 M. Zagidullin^{1,2}, Denis P. Porfiriev^{1,2}, R. Kaiser³, V. Azyazov^{1,2}, A. Mebel^{1,4} (¹Samara National Research University, Russia, ²Lebedev Physical Institute, Samara, Russia, ³University of Hawaii at Manoa, USA, ⁴ Florida International University, USA)

Pyrolysis of C₁₀H₇Br in high temperature microreactor: experiment and modeling

12.40-13.00 A.V. Zaitsevskii, A.A. Medvedev, Andrey V. Stolyarov (Lomonosov Moscow State University, Russia)

Relativistic and quasirelativistic electronic structure calculations on the alkali metal - rare gas molecules

13.00-14.30 LUNCH

Session 1.3

Chair: Chongwen Zhou (Beihang University, China)

14.30-15.10 Arkke J. Eskola (University of Helsinki, Finland) (*Invited*)

Time-Resolved Kinetic Experiments Utilizing Photo-Ionization Mass-Spectrometers

15.10-15.30 Ilya N. Kosarev, S.V. Kindysheva, V.D. Grigorenko, S.O. Belov, A.Yu. Starikovskiy*, N.L. Aleksandrov (MIPT, Russia, *Princeton University, USA)

Shock tube study of plasma-assisted dimethyl ether ignition at temperatures near self-ignition threshold

15.30-15.50 Boris I. Loukhovitski, A.S. Sharipov (CIAM, Russia)

Influence of internal molecular degrees of freedom on their electric and optical properties

15.50-16.10 I.V. Arsentiev, V.A. Savelieva, Nataliya Titova (CIAM, Russia)

Numerical study of H₂S-H₂O-air mixture conversion to hydrogen via activation of air by an electric discharge

16.10-16.30 **Coffee Break**

Session 1.4

Chair: Nikolay Smirnov (Moscow State University, Russia)

16.30-16.50 Vitaly D. Kobtsev¹, S. Kostritsa¹, V. Smirnov^{1,2}, N. Titova¹, S. Torokhov¹ (¹CIAM, ²A.M. Prokhorov General Physics Institute, RAS, Russia)

The experimental study of the enhancement of hydrogen-air mixture ignition promoted by the singlet oxygen molecules

16.50-17.10 A. Volynets, D. Lopaev, Alexander Chukalovsky, T. Rakhimova, Yu. Mankelevich, N. Popov (Skobeltsyn Institute of Nuclear Physics, Lomonosov State University, Russia)

N₂ dissociation and kinetics of N(⁴S) atoms in nitrogen DC glow discharge

17.10-17.30 P. Bulat¹, M. Bulat¹, I. Volobuev² (¹Baltic State Technical University "Voenmeh", ²ITMO University, Russia)

Concept of low emission combustion chamber with using streamers discharge to increase combustion speed

17.30-17.50 Elena Filimonova, A. Bocharov, V. Biturin (JIHT of RAS, Russia)

Formation of combustion wave in a hydrocarbon-air mixture in near high-voltage electrode of surface dielectric barrier discharge

17.50-18.10 P.V. Bulat^{1,2}, L.P. Grachev³, I.I. Esakov³, Vladimir V. Upyrev^{1,2} (¹Baltic State Tech. Univ. "Voenmeh", ²ITMO University, ³ Moscow Radiotechnical Institute of the RAS, Russia)

Stabilization of combustion front in supersonic flow using streamer's discharge

18.10-18.30 K. Vereshchagin^{1,2}, S. Volkov^{1,2}, V. Kobtsev¹, S. Kostritsa¹, V. Smirnov^{1,2}, A. Starik¹, N. Titova¹, Sergey Torokhov¹ (¹CIAM, ²Prokhorov General Phys. Inst., RAS, Russia)

The numerical study of hydrogen-air mixture ignition under laser photo dissociation of O₂ molecules

18.30-18.50 Sergey Golovastov, G. Bivol, V. Golub (JIHT, Russia)

Detonation decay and flame propagation through a channel with porous walls

18.50-19.10 Muthana Al-Jaboory (Oman)

Extinguishing Oil Well's Fires

25 July, Wednesday

Session 2.1

Chair: Fei Qi (Shanghai Jiao Tong University, China)

9.00-9.40 Michael Frenklach (University of California at Berkeley, USA) *Invited*
Modeling of Soot Oxidation

9.40-10.20 M. Blitz, Ch. Morley, M.J. Pilling, Struan H. Robertson, P. Seakins, H. Wang, X. You (University of Leeds, UK) *Invited*
Obtaining the Phenomenological Rate Coefficients from Direct Analysis of Experimental Data

10.20-11.00 Chong-Wen Zhou (Beihang University, China), *Invited*
Combustion Chemistry for Alkenes: What Have We Learned from Butene Isomers?

11.00-11.20 Coffee Break

Session 2.2

Chair: Alexander Boldyrev (Utah State University, USA)

11.20-11.40 Alexander Morozov¹, A. Mebel¹, R. Kaiser² (¹Florida International University, ²University of Hawaii at Manoa, USA)
A Theoretical Study of Pyrolysis of exo-Tetrahydrodicyclopentadiene and its Primary and Secondary Unimolecular Decomposition Products

11.40-12.00 A.V. Pelevkin, Alexander S. Sharipov (CIAM, Russia)
Reaction kinetics of H₂ with O₂ in highly excited electronic states

12.00-12.20 A. Eremin^a, Ekaterina Mikheyeva^{a,b}, I.Selyakov^{a,c} (^aJIHT RAS, ^bBauman Moscow State Technical University, ^cLomonosov Moscow State University, Russia)
Soot formation in pyrolysis of acetylene with hydrocarbon additions

12.20-12.40 Dmitry Lopaev, A. Volynets, T. Rakhimova, O. Proshina, A. Chukalovsky (Skobeltsyn Institute of Nuclear Physics, Moscow State University, Russia)
Features of oxygen metastable molecules kinetics in O₂ plasma with increasing pressure

12.40-13.00 Valeriy Perminov, V. Marzaeva (Tomsk Polytechnic University)
Mathematical modeling of the impact of forest fires on buildings and structures

13.00-14.30 LUNCH

Session 2.3

Chair: Michael Frenklach (UC Berkeley, USA)

14.30-15.10 Alexander A. Konnov (Lund University, Sweden) *Invited*
Data consistency of the burning velocity measurements

15.10-15.50 Oleg S. Vasyutinskii (Ioffe Institute, Russia) *Invited*
Vector Correlations in Molecular Photodissociation: Femtosecond Stereodynamics

15.50-16.10 Dmitry Kozlov^{a,b}, V. Kobtsev^b, V. Smirnov^{a,b} (^aProkhorov General Physics Institute RAS, ^bCIAM, Russia)

Local Optical Diagnostics of High-Temperature Gas Media Using Laser-Induced Gratings

16.10-16.30 Coffee Break

Session 2.4

Chair: Natalia Titova (P.I. Baranov Central Institute of Aviation Motors, Russia)

16.30-16.50 K. Vereshchagin^{1,2}, V. Kobtsev¹, S. Kostritsa¹, Valery Smirnov^{1,2}, N. Titova¹, S. Torokhov¹ (¹CIAM, ²Prokhorov General Physics Institute, RAS, Russia)

CARS and Fluorescent Study of Ignition of H₂-O₂ Mixtures upon Photo-Dissociation of O₂ Molecules

16.50-17.10 Andrey Volynets¹, D. Lopaev¹, A. Rakhimov¹ (Skobeltsyn Institute of Nuclear Physics of Lomonosov Moscow State University, Russia)

Actinometry of O atoms with Kr at elevated pressures (10 - 100 Torr) in pure O₂ discharge

17.10-17.30 Ratan Joarder, A.P. Singh (Indian Institute of Technology, Kharagpur, India)

LES of Laser Initiation of Combustion of Gaseous Fuel-Air Mixture

17.30-17.50 Elena A. Shchepakina (Samara National Research University, Russia)

A Geometric Approach to the Modeling of Critical Phenomena in Combustion Models

17.50-18.10 Aleksandr G. Nigay, D.O. Glushkov (Tomsk Polytechnic University, Russia)

Experimental investigation of the gel fuel combustion process initial by the hot particle

18.20-20.00 Poster Session

P1. M.Y. Orlov, V.M Anisimov., O.V. Kolomzarov, M.Y. Anisimov (Samara University, Russia),
Maturation of workflow of combustion chamber with toroidal recirculation mixing zone

P2. V.N. Azyazov¹, M.V. Zagidullin^{1,2}, M.C. Heaven^{1,3}, A.M. Mebel^{1,4} (¹Samara University, ²Lebedev Physical Institute, Samara, Russia, ³Emory University, ⁴Florida International University, USA)
Active oxygen species in combustion

P3. M. Lucas^a, A. Thomas^a, R. Kaiser^a, E. Bashkirov^b, V. Azyazov^{bc}, A. Mebel^{bd} (^aUniversity of Hawai'i at Manoa USA, ^bSamara University, ^cLebedev Physical Institute, Samara, Russia, ^dFlorida International University, USA)

Products distribution in the reaction of atomic carbon with pyridine: theory and experiment

P4. A. Razuvaev, V. Biryuk, E. Blagin (Samara National Research University, Russia)

Increase of the energy plant efficiency in special conditions of its operation

P5. A.K. Chernyshov (¹Lebedev Physical Institute, Samara, ²Samara University, Samara, Russia)

Thermometry in a sealed discharge cell with noble gas

P6. A. Chichinin^{1,2}, O. Ott^{1,3}, Ch. Maul¹, K.-H. Gericke¹ (¹Technische Universität Braunschweig, Germany;² Institute of Chemical Kinetics and Combustion and Novosibirsk State University, Russia, ³Physikalisch-Technische Bundesanstalt, Experimental Physics, Nuclear Physics, Germany)

Photodissociation dynamics of SCl₂: resonance enhanced multi-photon ionization/time-of-flight mass spectroscopy study

- P7. V. Azyazov¹, A. Demyanov², I. Kochetov², P. Mikheyev¹ (¹Samara branch of P.N. Lebedev Physical Institute of RAS, ²SRC RF Troitsk Institute for Innovation and Fusion Research, Russia)
Simulation of plasma initiation of ignition of methane-air mixtures under atmospheric pressure
- P8. M. Evseev¹, E. Bashkirov¹, V. Azyazov¹, A. Mebel^{1,2} (¹Samara National Research University, Russia, ²Florida International University, United States)
Formation Mechanisms of Phenanthrene and Anthracene
- P9. Sh. Gabdrashova¹, M. Tulepov¹, M. Korchagin², B. Elouadi³ (¹al-Farabi Kazakh National University, Kazakhstan, ²Institute of Solid State Chemistry and Mechanochemistry, Siberia Branch of the RAS, Russia, ³Université de La Rochelle, France)
Study of pyrotechnic delay composition using reinforced composite material with carbon nanotubes
- P10. G. Galimova^{1,2}, V. Azyazov^{1,2}, A. Mebel^{1,3} (¹Samara National Research University, ²Lebedev Physical Institute, Samara, Russia, ³Florida International University, USA)
Reaction mechanism for the oxidation of C₁₅H₉ with hydroxyl
- P11. A. Ghildina¹, A. Mebel², V. Azyazov^{1,3} (¹Samara National Research University, Russia, ²Florida International University, USA, ³Lebedev Physical Institute, Samara, Russia)
The rate constants calculations and the potential energy surface for indenyl C₉H₇ + O₂ reaction by ab initio methods
- P12. O.G. Glotov¹, G.S. Surodin¹, V.E. Zarko¹, M.A. Korchagin² (¹Voevodsky Institute of Chemical Kinetics and Combustion, ²Institute of Solid State Chemistry and Mechanochemistry, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia)
Combustion characteristics of model composite propellants with aluminum diboride
- P13. V. Azyazov¹, A. Demyanov², I. Kochetov², P. Mikheyev¹ (¹Samara branch of P N Lebedev physical Institute of RAS, ²SRC RF Troitsk Institute for Innovation and Fusion Research, Russia)
Simulation of ozone formation in an electric discharge in mixtures of methane with air
- P14. M. Orlov, V. Anisimov, O. Kolomzarov, N. Gurakov, N. Mironov (Samara University, Russia)
Substantiation of the expediency of using the combustion chamber with a toroidal recirculation zone in the small GTE
- P 15. A. Korotchenko, M. Evseev, E. Bashkirov, V. Azyazov N., A. Mebel (¹ Samara National Research University, Russia, ²Florida International University, United States)
Formation mechanism of triphenylene and 4- vinylacephenanthrylene in the interaction of 9-phenanthryl and vinylacetylene
- P 16. V. Fabelinsky¹, V. Kobtsev², S. Kostritsa², D. Kozlov^{1,2}, V. Smirnov^{1,2}, K. Vereschagin^{1,2} (¹Prokhorov General Physics Institute, ²Baranov Central Institute of Aviation Motors, Russia)
Methane-air flame thermometry using Planar Laser-Induced Fluorescence (PLIF)
- P17. S.S. Matveev¹, I. Chechet¹, S.G. Matveev¹, A. Konnov² (¹Samara University, Russia, ²Lund University, Sweden)
Laminar burning velocities of n-decane with ethanol additions
- P 18. V. Malikov¹, A. Ishkov², S. Dmitriev¹, A. Sagalakov¹ (¹Altay State University, ²Altay State Agracultural University, Russia)
Research materials and structures of space vehicles by multifrequency measuring system on the basis of eddy current transducers

- P 19. D. Miftyakhova, M. Evseev, E. Bashkirov, V. Azyazov, A. Mebel (¹ Samara National Research University, Russia, ² Florida International University, United States)
Formation mechanism of benzo(c)phenanthrene
- P 20. A. Eremin^a, M. Korshunova^{a,b}, E. Mikheyeva^{a,b} (^aJIHT RAS, ^bBauman MSTU, Russia)
Experimental study of chemiluminescence in UV and VIS range at hydrogen-oxygen mixtures ignition
- P 21. G. Nyashina, (National Research Tomsk Polytechnic University, Russia)
Environmental advantages of composite fuels based on industrial wastes and different ranks of coal
- P 22. A. Oleinikov¹, V. Azyazov^{1,2}, A. Mebel^{1,3} (¹Samara National Research University, ²Lebedev Physical Institute, Samara, Russia, ³Florida International University, USA)
The reaction of 1-naphthyl with 1,3-butadiene: a theoretical study
- P 23. A.A. Pershin, A.P. Torbin, V.N. Azyazov (Samara University, Russia)
Ozone recovery in the presence of nitrous oxides
- P 24. L. Petrov^{1,2}, N. Kortsenshteyn² (¹G.M. Krzhizhanovsky Power Engineering Institute, ²National Research University «Moscow Power Engineering Institute», Russia)
Modeling of the formation of ultrafine particles as coals burning
- P 25. D. Porfiriev^{1,2}, V. Azyazov^{1,2}, A. Mebel^{1,3} (¹Samara National Research University, ²Lebedev Physical Institute, Samara, Russia, ³Florida International University, USA)
Kinetics of the 1-acenaphthyl + O₂ Reaction: A Theoretical Study
- P 26. D. Rybakov, Kh. Lamazhapov (Samara State Transport University, Samara, Russia)
Percolation model of combustion
- P 27. V. Saleev, A. Shipilova (Samara National Research University, Russia)
Ab initio study of magnesium surface oxidation
- P 28. A. Savchenkova¹, A. Semenikhin¹, I. Chechet¹, S. Matveev¹, A. Konnov², A. Mebel^{1,3} (¹ Samara University, Russia, ²Lund University, Sweden, ³ Florida International University, USA)
Rate constants calculations of the CH₂ + CH₂CO reactions in triplet and singlet states by ab initio methods
- P 29. A.S. Sharipov, A.V. Pelevkin (Central institute of aviation motors, Moscow, Russia)
Quantum chemical study of the reactions of H₂ and H₂O molecules with N₂(A₃Σ_u⁺)
- P 30. A.A. Sludnova^{1,2}, N.S. Mironov¹, P.A. Mikheyev^{1,2} (¹Samara National Research University, ²P N Lebedev Physical Institute, Samara, Russia)
Study of a dielectric barrier discharge burner for plasma assisted combustion
- P 31. A.A. Sultanova¹, V.M. Yanborisov² (¹Academy of Sciences of the Republic of Bashkortostan, ²Ufa State Petroleum Technological University, Russia)
Mechanism of Methyl Methacrylate Polymerization in the presence of the initiating system "azobisisobutyronitrile-ferrocene"
- P 32. V.E. Kozlov, N.S. Titova (Central Institute of Aviation Motors, Russia)
2D modeling of V-shaped turbulent methane-air flame
- P 33. G. Tolstov¹, M. Zagidullin^{1,2}, N. Khvatov², A. Mebel^{1,3}, V. Azyazov^{1,3} (¹Samara University, ²Lebedev Physical Institute, Samara, Russia, ³Florida International University, USA)
Measurements of rate constants for O₂(b¹Σ) quenching by CH₄, NO, N₂O at temperatures of 300–800 K
- P 34. A.P. Torbin, A.A. Pershin, V.N. Azyazov (Samara University, Russia)
Ozone recovery in presence of CO

- P 35. P.K. Tretyakov, A.V. Tupikin (Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Russia)
The impact of non-stationary electric field on hydrocarbon flames
- P 36. V. Tyurenkova, N. Smirnov, M. Smirnova (Federal Science Center Scientific Research Institute for System Studies of RAS, Moscow M.V. Lomonosov State University, Russia)
Mathematical modeling of burning surface in parallel flow of oxidant
- P 37. A.V.Emelianov, A.V. Eremin, P.I.Yatsenko (Joint Institute for High Temperatures, RAS, Russia)
Application of ARAS and MRAS methods to study the kinetics of CF₂ radicals formation at pyrolysis C₃F₇I
- P 38. A.I. Klimov, S.E. Kurushina, N.E. Molevich, D.P. Porfiriev, I.P. Zavershinskii (Samara National Research University, Russia)
Plasma vortex reactor for production of heat energy and hydrogen
- P 39. I.A.Zubrilin¹, S.G. Matveev¹, A. Marrone², D.M. Pastrone² (¹Samara National Research University, Russia, ²Politecnico of Turin, Italy)
Modeling of small gas turbine engine CO emissions based on reactor network
- P 40. V.I. Bolobov (Saint-Petersburg Mining University, Russia)
Auto-ignition problem titanium of oxygen and possible ways of solving

26 July, Thursday

Session 3.1

Chair: Ralf Kaiser (University of Hawaii, USA)

9.00-9.40 Fei Qi (Shanghai Jiao Tong University, China) *Invited*
Recent progress in experiments and diagnostics for combustion chemistry

9.40-10.20 Akira Miyoshi (Hiroshima University, Japan) *Invited*
Kinetics of Autoignition

10.20-11.00 Feng Zhang,^a C. Huang,^{a,b} Sh. Li,^{a,b} L. Xing,^a B. Yang^b (^aUniversity of Science and Technology of China, ^bTsinghua University, China)
RRKM/master equation calculations for some typical combustion reactions and the uncertainty analysis

11.00-11.20 **Coffee Break**

Session 3.2

Chair: Oleg Korobeinichev (Institute of Chemical Kinetics and Combustion, Russia)

11.20-12.00 Alexander I. Boldyrev (Southern Federal University, Russia, Utah State University, USA)
Delocalized Bonding in Molecules, Clusters, Two-Dimensional Materials and Solids

12.00-12.20 Andrey G. Shmakov^{1,2}, K. Osipova^{1,2}, D. Knyazkov^{1,2}, I. Gerasimov¹, A. Dmitriev^{1,2}, T. Bolshova¹, O. Korobeinichev^{1,2} (¹Institute of Chemical Kinetics and Combustion, ²Novosibirsk State University, Russia)

An Experimental and Numerical Study of Combustion Chemistry of Fatty Acids Esters

12.20-12.40 V.A. Strekalov, Ramil R. Shaimukhametov (Kazan Federal University, Russia)

The Acoustic Spectrums of the combustion Process in the IC-Engines

12.40-13.00 Pavel A. Maryandyshev, A. Kangash, V. Lyubov (Northern (Arctic) federal university named after M.V. Lomonosov, Russia)

Investigation of thermal degradation of hydrolysis lignin

13.00-14.30 LUNCH

Session 3.3

Chair: Feng Zhang (USTC, Hefei, China)

14.30-14.50 Anastasia Krikunova (MIPT, JIHT RAS, Russia)

The gravity impact on the V-shape flame instability

14.50-15.10 Artem V. Badernikov¹, S.A. Piralishvily², A.I. Guryanov² (¹UEC-Saturn, ²Rybinsk State Aviation Technical University, Russia)

Results of numerical modeling of combustion processes in a vortex chamber

15.10-15.30 L. Yanovskiy^{1,2}, N. Varlamova^{1,2}, A. Kazakov², V. Dubikhin², Alexander A. Molokanov^{1,2}, I. Popov¹, M. Stashkiv¹, C. Kasheeva¹, M. Ilina¹, V. Ezhov¹ (¹Central Institute of Aviation Motors, ²Institute of Problems of Chemical Physics of RAS)

Manometric Study of the Kinetics of Thermal Degradation of Alicyclic Hydrocarbons as Components of Advanced Aviation Fuels

15.30-15.50 Vadim G. Prokof'ev (Tomsk State University, Russia)

Spin Combustion of Gasless Systems with Melting Component: 3D Simulation

27 July, Friday

Session 4.1

Chair: Akira Miyoshi (Hiroshima University, Japan)

9.00-9.40 Vladimir V. Gubernov (P.N. Lebedev Physical Institute, RAS, Russia) (*Invited*)

Mechanisms performance for H₂/air burner-stabilized flames at various pressures

9.40-10.20 Oleg Korobeinichev¹, A. Shmakov¹, A. Karpov², A. Shaklein² (¹Institute of Chemical Kinetics and Combustion Siberian Branch RAS, ²Udmurt Federal Research Center, Russia) (*Invited*)

Physics and Chemistry of Combustion at Flame Spread over Solid Fuels

10.20-11.00 Nicolay N. Smirnov (Moscow M.V. Lomonosov State University, Russia)

Three-dimensional simulation of combustion, detonation and deflagration to detonation transition processes in cone and wedge induced focusing

11.00-11.20 Coffee Break

Session 4.2

Chair: Alexander Mebel (Florida International University, USA)

11.20-12.00 G. Galimova¹, A. Ghildina,¹ A. Oleinikov,¹ V. Azyazov,^{1,2} A. Mebel^{1,3} (¹Samara university, ²Lebedev Physical Institute, Samara, Russia, ³Florida International University, USA)
(Invited)

Oxidation of five-member rings in combustion

12.00-12.20 M. Tidswell, Siva Muppala, V. Rao (Kingston University, UK)

A numerical study of two turbulent flame speed models for H₂/CH₄/air premixed combustion

12.20-12.40 Alexander Drakon, A. Eremin (Joint Institute for High Temperatures RAS, Russia)

Inefficiency of suppression of methane-oxygen mixtures autoignition by halogenated hydrocarbons

12.40-13.00 Closing remarks