

FINAL PROGRAM

The Eighth Asia-Pacific International Symposium on Combustion and
Energy Utilization (8th APISCEU)
October 10-12, 2006

Venue
Zapolyarye Health & Spa Center, Sochi, Russian Federation



Jointly Organized by
Institute of Engineering Thermo-Physics, Chinese Academy of Sciences, China
Institute of Applied Mechanics, Ural Branch of the Russian Academy of Sciences,
Izhevsk, Russian Federation
Sochi Research Center, Russian Academy of Science, Sochi, Russian Federation



Final Program

The Eighth Asia-Pacific International Symposium on Combustion and Energy Utilization

10-12 October 2006, Sochi, Russian Federation

Zapolyarye Health & Spa Center

Organized by:

Institute of Engineering Thermo-Physics
Chinese Academy of Sciences, China

Combustion Institute, USA

Sochi Research Center, Russian Academy of Science,
Sochi, Russian Federation

Institute of Applied Mechanics,
Ural Branch of the Russian Academy of Sciences, Izhevsk, Russian Federation

Scientific Council on Combustion and Explosion of the Presidium of the
Russian Academy of Sciences, Moscow, Russian Federation

Joint-Stock Company "SG Tours", Sochi, Russian Federation

Sponsored by:

***The Union of Scientific and Engineering Societies of the Udmurtia Republic,
Izhevsk, Udmurtia Republic, Russian Federation***

***Research & Production Association of the Special Materials,
Saint Petersburg, Russian Federation***

Web-site: <http://www.npo-sm.ru>

Opening Ceremony

October 10, 2006

Venue: Big Hall of the Zapolarye Health & Spa Center

- 09:00 Introduction
Prof. A.M. LIPANOV
Director, Institute of Applied Mechanics,
Ural Branch of the Russian Academy of Sciences
Co-Chairman, Local Organizing Committee, 8th APISCEU, Russia
- 09:03 Welcoming Speech
Prof. ZAHNG, XIAOQIAN
Institute of Engineering Thermophysics,
Chinese Academy of Sciences, China
Chairman, International Organizing Committee of the APISCEU
- 09:10 Welcoming Speech
Prof. M.M. AMIRKHANOV
Director, Sochi Research Center,
Russian Academy of Science
Co-Chairman, Local Organizing Committee, 8th APISCEU, Russia
- 09:17 Opening Speech by the Guest of Honor
SOCHI Administration, Russia
- 09:21 Welcoming Speech
Prof. HUANG ZHAOXIANG
Institute of Engineering Thermo-Physics
Chinese Academy of Sciences, China
Honorary Chairman of the International Organizing
Committee of the APISCEU
- 09:25 Ribbon Cutting Ceremony

Technical Program

The Eighth Asia-Pacific International Symposium on Combustion and Energy Utilization

10-12 October 2006, Sochi, Russian Federation

October 09, 2006 (Monday)

- 14:00 – 18:30 Registration, Hall of the Zapolarye Health & Spa Center
18:30 – 22:30 Welcome Dinner, Restaurant of the Zapolarye Health & Spa Center

October 10, 2006 (Tuesday)

- 08:00 – 09:00 Registration, Hall of the Zapolarye Health & Spa Center
09:00 – 09:25 Opening Ceremony, Big Hall of the Zapolarye Health & Spa Center
09:30 – 10:40 Keynote Session, Big Hall of the Zapolarye Health & Spa Center
11:00 – 12:20 Technical Sessions, Big Hall of the Zapolarye Health & Spa Center
12:20 – 14:00 Lunch, Restaurant of the Zapolarye Health & Spa Center
14:00 – 18:00 Cultural Program: Sightseeing Tour of Sochi and Visit to the
Joseph Stalin's Dacha (Summer Residence)

October 11, 2006 (Wednesday)

- 08:30 – 09:30 Registration, Hall of the Zapolarye Health & Spa Center
09:00 – 12:20 Technical Sessions, Big Hall of the Zapolarye Health & Spa Center
12:20 – 14:00 Lunch, Restaurant of the Zapolarye Health & Spa Center
14:00 – 18:00 Technical Sessions, Big Hall of the Zapolarye Health & Spa Center

18:30 – 19:30 [Forum of the International Organizing Committee Members](#)

October 12, 2006 (Thursday)

- 09:00 – 12:40 Technical Sessions, Big Hall of the Zapolarye Health & Spa Center
12:40 – 14:00 Lunch, Restaurant of the Zapolarye Health & Spa Center
14:00 – 17:00 Technical Sessions, Big Hall of the Zapolarye Health & Spa Center
17:00 – 17:40 Poster Sessions, Big Hall of the Zapolarye Health & Spa Center
19:00 – 23:00 Symposium Banquet (Restaurant of the Zapolarye Health & Spa Center)

Keynote Session - Invited Keynote lectures

Date: October 10, 2006 (Tuesday)

Venue: Big Hall of the Zapolarye Health & Spa Center

Time: 09:30 – 10:40

Session Chair: Prof. Toshisuke Hirano

09:30 – 10:05

KN-101 **Study on Flow and Combustion Visualization**
Prof. Shi Liu
Institute of Engineering Thermo-Physics, CAS, China

10:05 – 10:40

KN-102 **On the Use of Renewable Energy Sources**
Prof. Alexey M. Lipanov
Institute of Applied Mechanics, UB of the RAS, Russian Federation

10:40 – 11:00 **Tea Break**

Arrangement of Technical Sessions

Each presentation will be 20 minutes including time for discussion

October 10, 2006

AM 09:00 – 09:25

Big Hall of the Zapolarye Health & Spa Center

Opening Ceremony

October 10, 2006

AM 09:30 – 10:40 (Tea break: 10:40 – 11:00)

Big Hall of the Zapolarye Health & Spa Center

Keynote Session (Invited Lecturers)

October 10, 2006

AM 11:00 – 12:20

Big Hall of the Zapolarye Health & Spa Center

Combustion Diagnostics - CD

Fundamental Combustion - FC

October 11, 2006

AM 09:00 – 12:20 (Tea break: 10:40 – 11:00)

Big Hall of the Zapolarye Health & Spa Center

Fundamental Combustion - FC

PM 14:00 – 18:00 (Tea break: 15:40 – 16:00)

Big Hall of the Zapolarye Health & Spa Center

Fundamental Combustion - FC

Computational Combustion – CC

(16:20 – 18:00)

October 12, 2006

AM 09:00 – 12:40 (Tea break: 10:40 – 11:00)

Big Hall of the Zapolarye Health & Spa Center

Alternative Fuel / Renewable Energy – AF

PM 14:00 – 17:00 (Tea break: 15:40 – 16:00)

Big Hall of the Zapolarye Health & Spa Center

Emission Control - EC

Poster Session

PM 17:00 – 17:40

Big Hall of the Zapolarye Health & Spa Center

Fundamental Combustion - FC

Alternative Fuels and Renewable Energy - AF

October 10, 2006

Big Hall of the Zapolarye Health & Spa Center

AM 11:00 – 12:20 (Tea break: 10:40 – 11:00)

Combustion Diagnostics - CD

Session Chair: Prof. Alexei M. Lipanov

- CD-101 Fundamental Characteristics of Electrostatic Probes as High Resolution Reaction Zone Detectors
Toshisuke HIRANO
- CD-102 Prediction of the Stability Behaviour of a Combustor using a Low Order Model and Measured Flame Transfer Functions
E. Freitag, S. Föllner and T. Sattelmayer

Fundamental Combustion – FC

Session Chair: Prof. Huang Zhaoxiang

- FC-101 Reaction Zone Structure in a Stirred Reactor with Highly Preheated Methane-Air Premixture
A. Yoshida, H. Naito and D. P. Mishra
- FC-102 An Experimental Study on Dynamical Behavior of Laminar Premixed V-flames
B. R. Wang, X. Q. Zhang, W. J. Kong

October 11, 2006

Big Hall of the Zapolarye Health & Spa Center

AM 09:00 – 12:20 (Tea break: 10:40 – 11:00)

Fundamental Combustion - FC

09:00 – 10:40 Session Chair: Prof. Shi Liu

- FC-103 Flame Interactions and Stabilization in an Oblique-Impinging Burner
Chih-Chieh Li, Han-Chang Cheng, and Jing-Tang Yang
- FC-104 Experimental and Numerical Analyses of Convective Ignition of PMMA in a Sudden-Expansion Channel
F. C. Hsiao, C. H. Chen, Y. C. Lin, and J. T. Yang
- FC-105 Combustion Synthesis of TiO₂ Nano-particles with TTIP in A Modified Hencken Burner
H. K. Ma, H. A. Young and K. T. Lee
- FC-106 Multi-Transition Metals (Cr, Cu, Zn, Ni and Co) Modified Zeolite 4A-based Catalysts for Catalytic Combustion of Methane in Mini-Combustor
K.S. Hui and Christopher Y.H. Chao
- FC-107 Experimental Study on the Lift-off Characteristics of Triple Flames with Fuel Dilution
Jeong Il Seo, Nam Il Kim and Hyun Dong Shin

11:00 – 12:20 Session Chair: Prof. Hsiao-Kang Ma

- FC-108 Ranges of Supersonic Combustion Rates in a Porous Medium
M. Mbarawa1, S. A. Zhdanok, P. N. Krivosheev and O. G.Penyaz'kova
- FC-109 Investigation and Improving on Performance of a Porous Medium Burner with Reciprocating Flow
M.Z. Xie, J.R. Shi, Y.B. Deng, L. Zhou
- FC-120 Filtration Gas Combustion Under High Velocities
V.S.Babkin, A.A.Korzhavin, I.G.Namyatov, V.I.Drobyshevich, Yu.M.Laevsky
- FC-111 Numerical Investigation on the Interaction Between a Fuel Spray and a Hot Porous Medium
Maozhao XIE and Zhiguo ZHAO

PM 14:00 – 18:00 (Tea break: 15:40 – 16:00)

Fundamental Combustion - FC

14:00 – 15:40 Session Chair: Prof. Maozhao Xie

- FC-112 Quantitative Estimation of the Static and Dynamic Parameters of Jet A-air Detonation from the First Principle Calculations
M.I. Strelkova, I.A. Kirillov, B.V. Potapkin, S.Ya. Umanskiy, A.A. Bagatur'yants, A. Safonov, V.V. Liventsov, M.A. Deminsky, T. Dean, B.Varatharajan, A. Tentner
- FC-119 Flexible Shaped-Charge Cutter
Yu.A. Vedernikov and B.P. Kryukov
- FC-114 Research on Fire Initiation in Manned Space Vehicle by “Function Simulation” Method
X.Q.Zhang, L.F.Chen and Z.S.Tian
- FC-115 Reverse Engineering on Laser Ablation of YSZ
Yew-Shing Ouyang
- FC-118 To the Kinetics of the Reaction of Porous Carbon Particle with Steam
V. M. Gremyachkin

Computational Combustion – CC

16:00 – 17:40 Session Chair: Prof. Viktor M. Gremyachkin

- CC-101 On the Modeling of Density Gradients with the Wave Equation for the Analysis of Combustion Instabilities
E. Wanke and T. Sattelmayer
- CC-102 An Analysis of Heavy Fuel Oil Combustion in Utility Boiler
H. Hasini, N. Maruf, N. H. Shuaib and K. Munisamy
- CC-103 Direct Numerical Simulation of Scalar Correlation-Moment Transport In Isothermal Turbulent Reacting Flows
F. Wang, C.X. Xu, L.X. Zhou, J. Zhang

- CC-104 Large-Eddy Simulation of Propane-Air Swirling Un-Premixed Combustion Using Different Combustion Models
W.L. Wang, L.X. Zhou, R.X. Li
- CC-105 The Design of a Multi-Ring Gas Burner for Optimal Energy Utilization and Nitride Oxide Emission
J. T. Yang, Y. C. Luo, C. C. Li, K. K. Wu and J. L. Cheng

18:30 – 19:30 Forum of the International Organizing Committee Members

October 12, 2006

Big Hall of the Zapolarye Health & Spa Center

AM 09:00 – 12:40 (Tea break: 10:40 – 11:00)

Alternative Fuel / Renewable Energy – AF

09:00 – 10:40 Session Chair: Prof. Ana Lea Cukierman

- AF-101 The Tesla Turbine Revisited
H. S. Couto, J.B.F. Duarte and D. Bastos-Netto
- AF-102 Fixed (Slow Moving) Bed Updraft Gasification of Wood Pellets
Rolando Zanzi
- AF-103 Hydrogen and Illuppai Oil as Dual Fuel in a DI Diesel Engine
Sankaranarayanan G., Jeyachandran K.
- AF-106 Comparative Analysis of Diesel, Bio-Diesel and Straight Vegetable Oil (SVO) as Fuel in DI Diesel Engine
Mukund V Subramaniam, S.Sivaprakasam, C.G.Saravanan
- AF-107 Energy-Saving Technologies Based on Super-Adiabatic Combustion
Polianczyk E.V., Glazov S.V., Manelis G.B.

11:00 – 12:20 Session Chair: Prof. Demetrio Bastos-Netto

- AF-108 Performance and Emission Tests on DI Diesel Engine Using SVO of *Madhuca Indica* at Different Temperature
Mukund V Subramaniam, L.Mubarak Ali, S.Sivaprakasam, C.G.Saravanan
- AF-109 Combustion Characteristics of Compression Ignition Engine Fuelled with Diesel Ethanol Emulsion Blends under Various Injection Angles
M.P.Ashok, S.Sivaprakasam and C.G.Saravanan
- AF-110 Hydrogen and Vegetable Oil as Dual Fuel in a DI Diesel Engine
Sankaranarayanan. G, Pugahzvadivu .M., Jeyachandran K.
- AF-111 An Investigative Analysis of Bio-Diesel in DI Diesel Engine Using Different Blends
Mukund V Subramaniam, V.Mugesh Raja, S.Sivaprakasam, C.G.Saravanan

PM 14:00 – 17:00 (Tea break: 15:40 – 16:00)

Emission Control - EC

14:00 – 15:40 Session Chair: Dr. Rolando Zanzi

- EC-101 Application of Pinch Technology in Air Pollution Modeling
Y. Rohani, M.H. Panjehshahi, B. Dabir
- EC-102 Analysis of Reductive Abilities of Hydrazine Compounds under Moderate to High Temperatures and Their Reduction Effect on NO_x in Incineration Flue Gases
Dezhen Chen, Zhengyu Wang, Zuoming Zhang and Yu Lin
- EC-103 Removal of Fluoride from Phosphoric Acid Production Plants
Fariborz Rashidi and Reza Ranjbar
- EC-104 Distribution of Bromine in the Pyrolysis of Printed Circuit Board Wastes
H. Y. Zhao, K. Peng, M. Li, S. Q. Li, Q. Song, Q. Yao
- EC-105 Production of Activated Carbon from Residue of Liquorices by Chemical Activation
T.Kaghazchi, M.Soleimani, M.Madadi Yeganeh

16:00 – 17:00 Session Chair: Prof. T. Kaghazchi

- EC-106 Study of Chromium Sorption from Aqueous Solution on Sawdust
M. Nikazar, H Sharifi, Z. Milani
- EC-107 Experimental Studies of Bluff Body Stabilized LPG Diffusion Flames
D. Y. Kiran and D. P. Mishra
- EC-108 Removal of Sulphur Dioxide by Calcium-Based Materials from Different Sources in South Africa
Z O. Siagi, M.Mbarawa, A.R. Mohamed, K.T.Lee and I. Dahlan

Poster Session

PM 17:00 – 17:40

Fundamental Combustion - FC

- FC-201 The Burning Behaviors of Collision-Merged Water/Diesel, Methanol/Diesel and Water+Methanol/Diesel Droplets
C. H. Wang, K. L. Pan, L. J. Kung, and W. H. Huang
- FC-203 Torch Combustion and Low-Frequency Non-Acoustic Combustion Instability Phenomena in Solid Propulsion Physics
Alexander N. Lukin
- FC-204 Segregating Role of Convection on Gas Phase Auto-Ignition in a Closed Explosion Sphere
I.A. Kirillov, I.A. Zaev, A.V. Panasenko, S.A. Vasil'evsky, H. Pasman
- FC-205 Two-Step Hydrogen Combustion Model for Best Estimate Modeling of Hydrogen Safety
I.A.Zaev, I.A.Kirillov

Alternative Fuels an Renewable Energy - AF

- AF-201 Potentialities of the Biochar Generated from Raw and Acid Pre-Treated Sugarcane Agricultural Wastes
P. R. Bonelli, M.E. Ramos, E. L. Buonomo, A. L. Cukierman
- AF-202 Thermal Degradation Characteristics of Post-Consumer PET Mixed with Wood Wastes
M.R. Kim, J.D. González, E.L. Buonomo, P.R. Bonelli, A.L. Cukierman
- AF-203 Co-Processing of Coal and Biomass for Energy Generation: Characterization of Thermal Events and Kinetics of Pyrolysis
P. Bonelli, D.A. Zilli, J.D. González, A.L. Cukierman
- AF-204 Filtrational Combustion of Humid Fuel
V. M. Kislov, E. A. Salgansky, S. V. Glazov, M. V. Salganskaya, E. V. Polianczyk, A. F. Zholudev, G. B. Manelis

Emission Control - EC

- EC-201 Flame Interaction and NO_x Emission in a Three-Ring Gas Burner
Y.C. Law, C.C. Li, J.T. Yang, K.K. Wu, and J.L. Cheng

CITY TOUR

There's no better way to touch the spirit of Sochi and see its sights and splendors than in the company of a local expert. A friendly informative guide will take you around the city with a number of stops in the most attractive places.

You will find it hard to resist a walk in the most popular Sochi parks such as – Dendrarium and the Riviera. The botanical gardens popularly known as Dendrarium, are the crown jewel among the Sochi attractions. Founded at the end of the 19th century, this garden occupies an area of 60 hectares. You will be pleased to see how they are attractively landscaped and carefully maintained. You will be surprised to meet such a rich collection of about 2,000 species of tropical and subtropical plants, mainly evergreens. Amazing but most of the plants are not native of Sochi. They were brought here in the early last century from the world over, mainly from the Mediterranean countries, South and North America, Africa, India, Japan, Australia, etc. And don't miss the ducks and swans in the lower part of the botanical gardens.

The famous Riviera park has got an abundance of cafes, souvenir shops, tennis courts, an open air theatre and many amusements for children such as ferry wheel, miniature railway, etc.

The city tour includes sights of beautiful spa centers, bath houses in the valley of the hydrogen sulphate springs of Matsesta, the pride of Sochi – the railway station and the Sochi harbor and a lot of other interesting places.

You are welcome on a city tour to discover the best of Sochi and if you want to explore further, please, feel free to choose.

JOSEPH STALIN'S DACHA (SUMMER RESIDENCE)

Stalin's dacha is the genuine summer house of the former mighty Soviet leader built in 1936. He used to come here quite often, and the atmosphere of the modest interior of that time sheds light on Joseph Stalin's personality.

For many Russians he was anathema. Under Stalin people spent years in labor camps and his name is inevitably linked with the mass purges. Many people died in the time of the Stalin's repressions.

But Stalin had a real hold on the masses. His prestige among ordinary people was great. They admired the man who held the Soviet society together in his powerful grip.

Still there are people who feel nostalgia for Stalin, his strong power. They forgot that things were bad at the same time and they forgot the terrible price they had paid.

While in Sochi, people take a chance to visit the Stalin's dacha hidden among lush vegetation of the "Zelenaya Roscha" (Green Wood) sanatorium park.

The program ends with a fourchette - visitors are offered the Stalin's favorite red wine alongside with cheese and fruit.

Also there's a chance to stay in one of the refurbished de luxe rooms of this romantic building.