5th International Workshop on Heat-Mass Transfer Advances for Energy Conservation and Pollution Control

13-16 August 2019, Novosibirsk, Russia

PROGRAM

The event is held with the financial support of the Russian Foundation for Basic Research, project № 19-08-20002

CONTENT

Welcome Message

Dear Madam / Sir,

Professor S.V. Alekseenko (Kutateladze Institute of Thermophysics, Novosibirsk, Russia), Professor Q.W. Wang (Xi'an Jiaotong University, Xi'an, China), Professor D.M. Markovich (Kutateladze Institute of Thermophysics, Russia), Professor Y.T. Chen (University of Nevada Las Vegas, Las Vegas, USA) and I have been honored to host the 5th International Workshop on Heat Transfer Advances for Energy Conservation and Pollution Control (IWHT2019). It is my great pleasure in welcoming you to take part in this important event in Novosibirsk, August 13-16, 2019. We would like to thank all of the special guests, invited speakers and sponsors for their generous support.

The objective of this workshop is to provide an international forum for exchange of latest technological information as well as for dissemination of high-quality research and development on heat/mass transfer problems in the area pertinent to energy conservation and pollution control. This conference will be of particular value and interest to practitioners who are working in heat/mass transfer field of energy conservation and pollution reduction.

IWHT2019 includes *8* plenary lectures, *28* keynote lectures, *29* invited reports and *107* oral regular presentations, from *16* countries and areas, covering extensive themes, including clean energy and storage techniques, heat exchangers and advanced energy systems, multiphase flow and heat/mass transfer, transport phenomena in porous media, heat/mass transfer enhancement techniques, CFD and numerical heat/mass transfer, nuclear energy, etc. Special issues of selected articles presented at IWHT2019 will be published in five international journals: Renewable and Sustainable Energy Reviews, Heat Transfer Engineering, Applied Thermal Engineering, Heat Transfer Research and Journal of Physics: Conference Series.

On behalf of IWHT2019, I sincerely appreciate your participation in the Conference. We do believe that your stay in Novosibirsk will rank among your most memorable and enjoyable trips abroad.

I wish you all a successful and beneficial meeting!

Sincerely yours,
Professor A.N. Pavlenko,
Conference Chair,
Corresponding member of Russian Academy of Science,
Member of NCHMT and ICHMT,
Lab Head, Kutateladze Institute of Thermophysics, Russia.

OVERVIEW SCHEDULE AND PROGRAM AT A GLANCE

Monday, 12 August

Academpark

15:00 - 18:00	**Registration,** *Hall of the 1st Floor*

Day 1: Tuesday, 13 August

Academpark

08:30 - 18:00	**Registration,** *Hall of the 1st Floor*		
09:00 - 09:20	**Opening Ceremony,** *Big Conference Hall*		
Plenary Lectures Session 1, *Big Conference Hall*			
09:20 - 10:00	Thermal energy storage: concept, process, applications and perspectives ***Ruzhu Wang*** *(Shanghai Jiao Tong University, Shanghai, China)*		
10:00 - 10:40	Effect of wave and vortex phenomena on transfer processes in power engineering ***Sergey Alekseenko*** *(Kutateladze Institute of Thermophysics, Novosibirsk, Russia)*		
10:40 - 11:00	**Coffee Break,** *Hall of the 2nd Floor*		
11:00 - 12:25	*Conference Hall 1*	*Conference Hall 3*	*Conference Hall 2*
	CFD and numerical heat/mass transfer 1	**Heat/mass transfer enhancement 1**	**Micro/nano heat/mass transfer 1**
12:25 - 14:00	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*		
14:00 - 16:10	*Conference Hall 1*	*Conference Hall 3*	*Conference Hall 2*
	CFD and numerical heat/mass transfer 2	**Heat/mass transfer enhancement 2**	**Micro/nano heat/mass transfer 2**
16:10 - 16:30	**Coffee Break,** *Hall of the 2nd Floor*		
16:30 - 18:20	**Poster Session 1** *Hall of the 2nd Floor*		
18:30	**Welcome Reception,** *Cafe Kukuruza, Academpark, 2nd Floor*		
19:00	**IWHT2019 Committee Meeting**		

Day 2: Wednesday, 14 August

Academpark

09:00 - 18:00	**Registration,** *Hall of the 1st Floor*		
Plenary Lectures Session 2, *Big Conference Hall*			
09:00 - 09:40	Impact of micro- and nanostructures and nanofluids on heat transfer performance ***Bengt Sundén*** *(Lund University, Lund, Sweden)*		
09:40 - 10:20	Recent trends in enhanced heat transfer research and development using nanofluids ***Zhixiong (James) Guo*** *(Rutgers University-New Brunswick, USA)*		
10:20 - 10:40	**Coffee Break,** *Hall of the 2nd Floor*		
10:40 - 12:20	*Conference Hall 1*	*Conference Hall 2*	*Conference Hall 3*
	CFD and numerical heat/mass transfer 3	**Heat/mass transfer in pollutant emission control systems**	**Heat/mass transfer enhancement 3**
12:20 - 14:00	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*		
14:00 - 15:40	*Conference Hall 1*	*Conference Hall 2*	*Conference Hall 3*
	CFD and numerical heat/mass transfer 4	**Multiphase heat/mass transfer 2**	**Advanced energy systems and materials 1**
15:40 - 16:00	**Coffee Break,** *Hall of the 2nd Floor*		
16:00 - 18:25	*Conference Hall 1*	*Conference Hall 2*	*Conference Hall 3*
	Heat/mass transfer in renewable and clean energy systems 1	**Multiphase heat/mass transfer 2**	**Advanced energy systems and materials 2**
18:40	**Conference banquet,** *Cafe Kukuruza, Academpark, 2nd Floor*		

Day 3: Thursday, 15 August

Novosibirsk State University

08:55 - 9:00	A Welcome speech from Rector of Novosibirsk State University ***M.P. Fedoruk*** *Conference Hall (3307)*		
09:00 - 18:00	**Registration,** *Hall of the 1st Floor*		
Plenary Lectures Session 3, *Conference Hall (3307)*			
09:00 - 09:40	Potentials and technologies of waste heat recovery from high temperature solid granular ***Qiuwang Wang*** *(Xi'an Jiaotong University, Xi'an, China)*		
09:40 - 10:20	Finite-size coherent particles structures ***Hendrik Kuhlmann*** *(TU Wien, Vienna, Austria)*		
10:20 - 10:40	**Coffee Break**		
10:40 - 12:20	*Room A (2322)*	*Room B (2328)*	*Room C (3312)*
	Multiphase heat/mass transfer 3	**Heat/mass transfer at high temperature 1**	**Heat/mass transfer in porous media 1**
12:20 - 14:00	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*		
14:00 - 15:45	**Poster Session 2** *The Hall near Conference Hall (3307)*		
15:45 - 16:00	**Coffee Break**		
16:00 - 20:00	**Excursion to the city of Novosibirsk**		

Day 4: Friday, 16 August

Novosibirsk State University

09:00 - 14:00	**Registration,** *Hall of the 1st Floor*			
Plenary Lectures Session 4, *Conference Hall (3107)*				
09:00 - 09:40	Heat transfer research for high-temperature solar thermal applications ***Wojciech Lipiński*** *(The Australian National University, Canberra, Australia)*			
9:45 - 10:40	*Room A (3318)* **Heat/mass transfer at high temperature 2**	*Room B (3312)* **Heat/mass transfer in porous media 2**	*Room C (2322)* *Special Session 2* **Thermal energy storage 1**	*Room D (2328)* *Special Session 3* **Heat transfer advances for compact heat exchangers 1**
10:40 - 11:00	**Coffee Break**			
11:00 - 12:00	*Room A (3318)* **Heat/mass transfer at high temperature 2**	*Room B (3312)* **Heat/mass transfer in porous media 2**	*Room C (2322)* *Special Session 2* **Thermal energy storage 1**	*Room D (2328)* *Special Session 3* **Heat transfer advances for compact heat exchangers 1**
12:00 - 13:30	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*			
13:30 - 15:25	*Room A (3312)* *Special Session 1* **Advances in computational heat/mass transfer**	*Room B (2322)* *Special Session 2* **Thermal energy storage 2**	*Room C (2328)* *Special Session 3* **Heat transfer advances for compact heat exchangers 2**	
Plenary Lectures Session 5, *Conference Hall (3107)*				
15:25 – 16:05	Modern trends and challenges in development of cooling technologies for new generation of Huawei products ***Leonid Vassiliev*** *(Bel Huawei Technologies LLC, Minsk Research Center, Minsk, Belarus)*			
16:05	**Closing Ceremony,** *Conference Hall (3107)*			

General information

We are pleased to invite you to participate in the 5th International Workshop on Heat/Mass Transfer Advances for Energy Conservation and Pollution Control (IWHT2019). The 5th International Workshop will be held in **Technopark of Novosibirsk Akademgorodok** and **Novosibirsk State University** (Novosibirsk, Russia), on August 13 - 16, 2019. The purpose of this workshop is to provide an international forum for exchange of latest technological information as well as for dissemination of high-quality research and development on heat/mass transfer problems in the area pertinent to energy conservation and pollution control. The workshop will be of particular value and interest to researchers, scientists and engineers who are working in heat/mass transfer field for energy conservation and pollution reduction.

Geography of the latest IWHT workshops:
2017 - *Las Vegas (USA)*
2015 - *Taipei (Taiwan)*
2013 - *Xi`an (China)*
2011 - *Xi`an (China)*

Technopark of Novosibirsk Akademgorodok

Novosibirsk State University

Organizers

Kutateladze Institute of Thermophysics
Novosibirsk State University

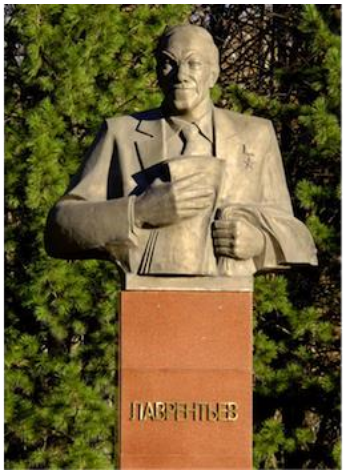
Host Organization

Kutateladze Institute of Thermophysics
Novosibirsk State University
Technopark of Novosibirsk Akademgorodok (Akadempark)

Supporting Organizations

International Centre for Heat and Mass Transfer
National Committee of Heat and Mass Transfer
Chinese Society of Engineering Thermophysics

Akademgorodok



Akademgorodok is a part of Novosibirsk, located about 20 km south of the city. *Akademgorodok* is a “town” of scientific research; it was founded in 1957 and became the center of the Siberian Branch of the Russian Academy of Sciences as a largest scientific center to the east of the Ural Mountains in Russia. *Akademgorodok* is built in the forest bordered by a botanical garden and the Ob reservoir (“Ob Sea”). More than 35 research institutes, various innovation and IT companies, as well as Novosibirsk State University, the center of student life, are situated there.

Novosibirsk *Akademgorodok* arose in the wake of the Soviet "thaw" along with the accelerated development of Siberia and Far East with their inexhaustible natural resources. In the postwar years, when the country was in need of industrial development, the Soviet scientists Academicians Mikhail Lavrentyev, Sergei Sobolev and Sergei Khristianovich proposed to organize in Siberia a large research center with the institutes in various fields of science. The idea has received broad support in the scientific community and many prominent scientists have expressed their desire to move to Siberia. The Soviet government approved the proposal of Academicians. On May 18, 1957 the USSR Council of Ministers decided to set up in Novosibirsk in the territory of a thick pine forest the Siberian Branch of the Russian Academy of Sciences, to strengthen the research in the field of physical-technical, natural, economic and humanitarian sciences.

To construct the academic campus, a free territory in the south of Novosibirsk, 20 km from the city center, was allocated near the newly created reservoir - the Ob Sea. On June 7, 1957 the Presidium of the USSR Academy of Sciences accepted the proposal for the establishment and construction of the Institutes of Mathematics with Computing Centre, Theoretical and Applied Mechanics, Hydrodynamics, Physics, Automation, Geology and Geophysics, **Thermophysics**, Experimental Biology and Medicine, Cytology and Genetics, Economics and Statistics in the Siberian Branch. After two years in Novosibirsk *Akademgorodok* the life seethed: houses and institutes have been built (the Institute of Hydrodynamics was the first (1959)) together with Novosibirsk State University.

Akademgorodok was to become something of an ideal environment for the scientists and students, aiming for the future. This fantastic idea, typical of the 60s, was also reflected in the toponymy of *Akademgorodok*: the Prospect of Science and University Avenue, Physicists street, boulevards of Tourists and Romantics (later renamed). The image of a new city for the young people was supported in every way by its founders and leaders. At one of the May Day demonstrations at the head of the column there were not the workers with posters, but the young mothers with babies in strollers, born first in *Akademgorodok* (the idea of Academician M.A. Lavrentyev).

Akademgorodok is a joint creation of man and nature. The area has quickly gained a prestigious status. Firstly, the best conditions for scientists have been created there; secondly, the town was located in a great place. During the design of *Akademgorodok* the special attention was paid to preservation of the unique nature of this area. Large forest, numerous artificial planting, proximity to the Ob Sea: all these made *Akademgorodok* even more attractive for living. Nature and activity of outstanding personalities, such as Academicians Mikhail Lavrentyev, Samson Kutateladze, Leonid Kantorovich, Valentin Koptyug, heart surgeon Eugene Meshalkin, et al., made *Akademgorodok* the remarkable place. *Akademgorodok* has the phenomenal spirit of atypical socialist town, surprising both the foreigners and our compatriots.

Currently *Akademgorodok* is one of the most important scientific and educational centers of Russia. In its territory, there are dozens of research institutes, Presidium of the Siberian Branch of the Russian Academy of Sciences (SB RAS), Novosibirsk State University (NSU), Specialized Educational Scientific Center and state-of-the-art technology park (Academpark).

Novosibirsk State University (NSU)

The motto of the University: "*We will not make you smarter; we'll teach you to think*". The main idea of education at NSU is to be able to learn throughout the life.
NSU was established in 1958 and now it is a part of the organizational structure of SB RAS. In this regard, the academic staff of the University is also the employees of the Academy of Sciences, and NSU students take the research vocational training at the institutes of Akademgorodok.

In 2009, the University has received the status of National Research University, and in 2014, "Expert RA" rating has assigned class "B" to the University (very high level of graduates training). In 2013 - 2015, in almost all international rankings the University takes the respectable second or third place among Russian universities.
Today NSU includes the Specialized Physical-Mathematical School, Retraining College, High College of Informatics, research centers, 13 departments, doctoral and post-graduate courses, and more than 6.5 thousand students.

You can find and download map of *NSU* building using following QR code:

or using direct link (*NSU* has free Wi-Fi inside the building):
https://english.nsu.ru/about_NSU/maps/

Registration, Name Badges, Coffee breaks, Lunches and other information

Registration Desk Hours

The registration desk is located on the 1st floor of the *Academpark* during the following times:

Monday, 12 August	**15:00 - 18:00**
Tuesday, 13 August	**08:30 - 18:00**
Wednesday, 14 August	**09:00 - 18:00**

The registration desk is located on the 1st floor of the Hall of the *Novosibirsk State University* during the following times:

Thursday, 15 August	**09:00 - 18:00**
Friday, 16 August	**09:00 - 14:00**

Name Badge

Each delegate registered for IWHT2019 will receive a name badge at the registration desk. **Admission to all conference activities as well as conference welcome reception, banquet and lunches is via the official IWHT2019 badge only. Please wear your name badge at all times.**

Opening Ceremony

Tuesday, August 13, 09:00 – 09:20, *Academpark, Big Conference Hall*
Everybody with a name badge is welcome.

Welcome Reception

Tuesday, August 13, 18:30, *Academpark, Café Kukuruza*

Coffee Breaks

Coffee Breaks are served twice a day.

Lunches

Tuesday, 13 August	**12:25 - 14:00**	*Academpark, 2nd floor, Café Kukuruza*
Wednesday, 14 August	**12:20 - 14:00**	*Academpark, 2nd floor, Café Kukuruza*
Thursday, 15 August	**12:20 - 14:00**	*Academpark, 2nd floor, Café Kukuruza*
Friday, 16 August	**12:00 - 13:30**	*Academpark, 2nd floor, Café Kukuruza*

The lunches are included in the registration fee. Lunch is reserved only to conference delegates.
Everybody with a name badge is welcome.

Conference Banquet

Wednesday, August 14, 18.40, Academpark, 2nd floor, Café Kukuruza
Everybody with a name badge is welcome.

Excursion to the city of Novosibirsk

Thursday, 15 August, 16.00-20.00

Closing Ceremony

Friday, 16 August, 14.40, *Novosibirsk State University, Conference Hall 3107*. Everybody with a name badge is welcome.

Abstracts and Proceedings

The printed volumes of conference program and full set of abstract is given to all IWHT2019 participants. The conference program and full set of proceedings is distributed to all participants on USB flash drive in your registration package too.

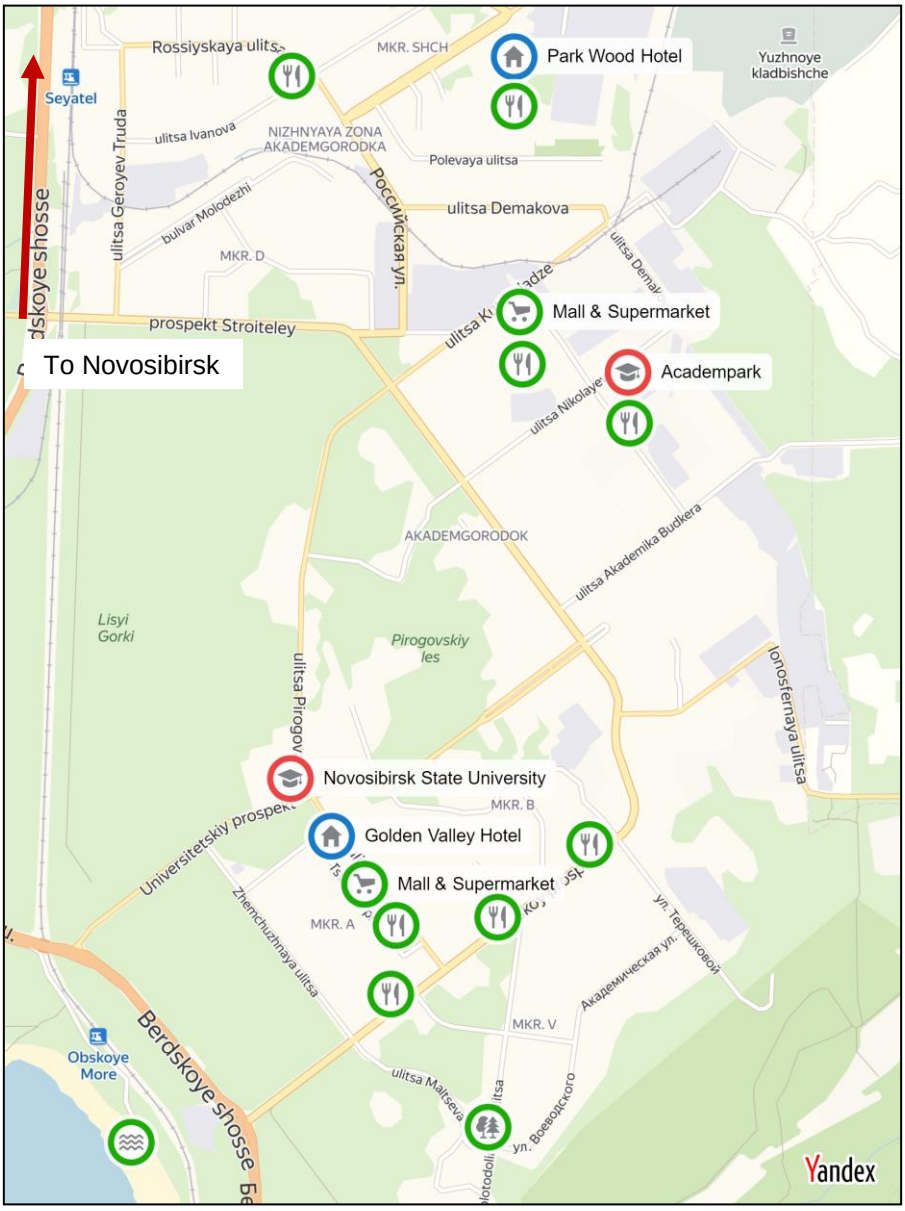
Smoking

Smoking is strictly prohibited anywhere inside the Academpark and Novosibirsk State University facilities.

Internet Access

Academpark and Novosibirsk State University have wireless service. All information is available at registration desk.

Akademgorodok Map



You can also find detailed digital map with all main objects of Academgorodok using following QR code:

https://english.nsu.ru/about_NSU/location/

Addresses of the main conference places:

- *Academpark*
  Nikolayeva str. 12
- *Café Kukuruza*
  Nikolayeva str. 12/2
- *Novosibirsk State University*
  Pirogova str. 1
- *Golden Valley Hotel*
  Ilyicha str. 10
- *Park Wood Hotel*
  Arbuzova str. 6/2

If you have any questions, please ask the conference staff

Sponsors

Kutateladze Institute of Thermophysics

Technopark of Novosibirsk Akademgorodok (Akadempark)

Novosibirsk State University

Russian Foundation for Basic Research

Ministry of Science and Higher Education of the Russian Federation

International Centre for Heat and Mass Transfer

National Committee of Heat and Mass Transfer

Chinese Society of Engineering Thermophysics

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Prof. A.N. Pavlenko, Kutateladze Institute of Thermophysics, Russia
Prof. S.V. Alekseenko, Kutateladze Institute of Thermophysics, Russia

Co-chairman

Prof. Q.W. Wang, Xi'an Jiaotong University, China
Prof. D.M. Markovich, Kutateladze Institute of Thermophysics, Russia
Prof. Y.T. Chen, University of Nevada Las Vegas, USA

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Prof. W. Lipiński, Australian National University, Australia
Prof. S. Sazhin, University of Brighton, UK
Prof. H. Kuhlmann, TU Wien, Austria

Plenary Lectures

DAY 1: Tuesday, 13 August, *Academpark, Big Conference Hall*

09:20 - 10:00
PL1 Thermal energy storage: concept, process, applications and perspectives
Prof. Ruzhu Wang *(Shanghai Jiao Tong University, Shanghai, China)*

DAY 1: Tuesday, 13 August, *Academpark, Big Conference Hall*

10:00 - 10:40
PL2 Effect of wave and vortex phenomena on transfer processes in power engineering
Prof. Sergey Alekseenko *(Kutateladze Institute of Thermophysics, Novosibirsk, Russia)*

DAY 2: Wednesday, 14 August, *Academpark, Big Conference Hall*

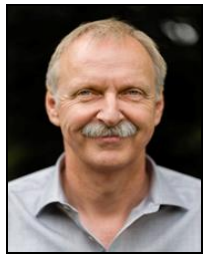
09:00 - 09:40
PL3 Impact of micro- and nanostructures and nanofluids on heat transfer performance
Prof. Bengt Sundén *(Lund University, Lund, Sweden)*

DAY 2: Wednesday, 14 August, *Academpark, Big Conference Hall*

09:40 - 10:20
PL4 Recent trends in enhanced heat transfer research and development using nanofluids
Prof. Zhixiong (James) Guo *(Rutgers University-New Brunswick, USA)*

DAY 3: Thursday, 15 August, *Novosibirsk State University, Conference Hall (3307)*

09:20 - 10:00
PL5 Potentials and technologies of waste heat recovery from high temperature solid granular
Prof. Qiuwang Wang *(Xi'an Jiaotong University, Xi'an, China)*



DAY 3: Thursday, 15 August, *Novosibirsk State University, Conference Hall (3307)*

09:40 - 10:20
PL6 Finite-size coherent particles structures
Prof. Hendrik Kuhlmann *(TU Wien, Vienna, Austria)*

DAY 4: Friday, 16 August, *Novosibirsk State University, Conference Hall (3107)*

09:00 - 09:40
PL7 Heat transfer research for high-temperature solar thermal applications
Prof. Wojciech Lipiński *(The Australian National University, Canberra, Australia)*

DAY 4: Friday, 16 August, *Novosibirsk State University, Conference Hal (3107)*

15:25 - 16:05
PL8 Modern trends and challenges in development of cooling technologies for new generation of Huawei products
Dr. Leonid Vassiliev *(Bel Huawei Technologies LLC, Minsk Research Center, Minsk, Belarus)*

Panel Sessions

SPECIAL SESSION 1: ***Advances in Computational Heat/Mass Transfer***

Special Session Chairs: *Prof. Hendrik Kuhlmann (TU Wien, Vienna, Austria), Prof. Aleksander Kupershtokh (Lavrentyev Instituter of Hydrodynamics, Novosibirsk, Russia)*

Advances in computational heat/mass transfer lead to valuable results in both fundamental and applied research as the technical capabilities continuously increase over the past years. A wide range of topics is of interest: heat transfer enhancement, surface cooling, control of mixing processes, complex multiphase flows including cavitation, boiling and combustion, suspended particles, laminar-turbulent transition, presence of electric and magnetic fields, etc. Most of the computational techniques are based on the Navier-Stokes equations to describe the dynamics of fluids and gases. Relying on the averaging assumptions, several approaches can be highlighted such as the Direct numerical simulations (DNS), Large-eddy simulations (LES) and simulations based on the Reynolds-averaged Navier-Stokes equations (RANS). Different methods imply various modeling and/or computational challenges. This special session will focus on recent advances of CFD for various applications.

SPECIAL SESSION 2: ***Thermal Energy Storage***

Special Session Chair: *Prof. Yuri Aristov (Boreskov Institute of Catalysis, Novosibirsk, Russia)*
Special Session Co-Chairs: *Prof. Ruzhu Wang (Shanghai Jiaotong University, Shanghai, China) and Prof. S.S. Murthy (Indian Institute of Science, Bengaluru, India)*

Thermal energy storage (TES) is an emerging technology currently used to ensure a temporal coherence between heat production and consumption. Incorporation of a proper TES system reduces the amount of excess heat that would normally be wasted. TES can be achieved with widely differing technologies, including sensible, latent and chemical (adsorption) storage. Depending on the specific technology, it allows excess thermal energy to be stored and used hours, days, or months later, at scales ranging from individual process, building, multiuser-building, district, town, or region. As renewables gain a greater foothold in the energy system, the importance of TES is going to increase in kind. With the ongoing gradual shift away from traditional baseload energy sources, the development of efficient TES systems is imperative. This special session will focus mainly, but not only, on:
-sensible heat storage;
-latent heat storage (PCMs);
-chemical and adsorptive heat storage;
-short and long (seasonable) heat storage;
-low-, middle- and high-temperature TES;
-heat storage in buildings;
-heat and mass transfer in TES systems.

SPECIAL SESSION 3: ***Heat Transfer Advances for Compact Heat Exchangers***

Special Session Chair: *Dr. Ting Ma (Xi'an Jiaotong University, China), Dr. Yitung Chen (University of Nevada-Las Vegas, USA)*
Special Session Co-Chair: *Prof. Vladimir Kuznetsov (Kutateladze Institute of Thermophysics Novosibirsk, Russia)*

Compact heat exchangers are the most important components to transfer the thermal energy from one loop to the other loop in many high-efficiency energy and power systems, such as Heating, Ventilation and Air Conditioning (HVAC), Microturbine, Industrial Waste Heat Recovery System, Very High Temperature Gas-cooled Reactor, Solar Energy System, Supercritical CO2 Brayton Cycle, and Natural Gas Liquefaction System. Over the last 20 years, many new heat transfer enhancement technologies, such as vortex generators, primary surfaces, mini-channels and micro-channels, have been applied to the compact heat exchangers and showed promising thermal-hydraulic performance. Besides high-efficiency performance, the compact heat exchangers should have good high temperature or high pressure resistances in many applications. A representative high temperature and high pressure compact heat exchanger is the printed circuit heat exchanger with mini-micro channels, which is fabricated by photochemical etching and diffusion bonding technologies. However, there are still many challenges for the wide applications of compact heat exchangers. This special session will focus on the heat transfer advances for compact heat exchangers for various applications.

Monday, 12 August, *Academpark*			
15.00-18.00	**Registration,** *Hall of the 1st Floor*		
Day 1: Tuesday, 13 August, *Academpark*			
08:30 - 18:00	**Registration,** *Hall of the 1st Floor*		
09:00 - 09:20	**Opening Ceremony,** *Big Conference Hall* Conference Chairman ***A. Pavlenko,*** Conference Co-Chairman ***Q.W. Wang,*** President of Siberian Branch (SB) of RAS ***V.N. Parmon,*** Director of Institute of Thermophysics of SB RAS ***D.M. Markovich,*** Rector of Novosibirsk State University ***M.P. Fedoruk,*** Prof. ***W.Q. Tao***		
Plenary Lectures Session 1, *Big Conference Hall* Chairs: *Markovich D.M., Wang Q.W.*			
09:20 - 10:00	*PL1* Thermal energy storage: concept, process, applications and perspectives ***Ruzhu Wang*** *(Shanghai Jiao Tong University, Shanghai, China)*		
10:00 - 10:40	*PL2* Effect of wave and vortex phenomena on transfer processes in power engineering ***Sergey Alekseenko*** *(Kutateladze Institute of Thermophysics, Novosibirsk, Russia)*		
10:40 - 11:00	**Coffee Break,** *Hall of 2nd Floor*		
	Conference Hall 1	*Conference Hall 3*	*Conference Hall 2*
	CFD and NUMERICAL HEAT/MASS TRANSFER 1 Chairs: ***Kuhlmann H.C.*** *(TU Wien, Vienna, Austria),* ***Mullyadzanov R.I.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**HEAT/MASS TRANSFER ENHANCEMENT 1** Chairs: ***Tao W.Q.*** *(Xi'an Jiaotong University, Xi'an, China)* ***Terekhov V.I.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**MICRO/NANO HEAT/MASS TRANSFER 1** Chairs: ***Wang J.F.*** *(Shanghai Polytechnic University, Shanghai China),* ***Kabov O.A.*** *(Institute of Thermophysics, Novosibirsk, Russia)*
11:00 -11:25	*Keynote Lecture 1* **ID143: Research on vortex characteristics and temperature field of last stage in steam turbine under low volume flow conditions** *Cao L.H., Xu M.C., Luo H.H., Hu P.F., Wang Y., Sun L., Yang R.Z.*	*Keynote Lecture 1* **ID229: Vortex formation and heat transfer in separated flows** *Terekhov V.I.*	*Keynote Lecture 1* **ID248: Enhanced droplet shedding on hierarchical lubricant infused surfaces** *Orejon D., Maeda Y., Lv F.Y., Zhang P., Takata Y.*

11:25 - 11:40	ID80: Large-scale numerical investigation of erosion size effect on film cooling *Shangguan Y.Q., Wang X.*	ID36: Experimental study on laminar flow resistance characteristics of flat tube and microfinned flat tube *Fan G.M., She L.C., Sun Z.N., Cheng J., Chen Y.T.*	ID216: Fundamental issues related to flow boiling and condensation in microchannels - experimental challenges and opportunities *Kuznetsov V.V., Shamirzaev A.S.*
11:40 - 11:55	ID182: Investigation of applicability area for turbulence models in the problems of mass transfer intensification by the control of a rotary divergent flow *Kabardin I., Pravdina M., Yavorsky N., Polyakova V., Meledin V., Ezendeeva D., Kakaulin S., Gordienko M., Dvoynishnikov S., Klimonov I., Usov E.*	ID101: Coupled heat flow fields analysis inside a diversion-type gas heater with vertical guide plate structure *Guo Y., Zhou Z.W., Huang Z.Q.*	ID50: Non-equilibrium effects at liquid-vapor interface: experiments and kinetic simulation *Gatapova E., Polikarpov A., Graur I., Kabov O.*
11:55 - 12:10	ID31: Numerically thermal analysis of a turbine vane at high temperature *Prapamonthon P., Yooyen S., Sleesongsom S.*	ID156: Heat transfer and drag of a smooth and dimpled surface in the wake of the cylinder *Kiselev N.A., Zditovets A.G., Vinogradov Yu.A., Strongin M.M.*	ID202: Immiscible liquid-liquid flow with low viscosity ratio in rectangular microchannels *Kovalev A.V., Yagodnitsyna A.A., Bilsky A.V.*
12:10 - 12:25	ID206: CFD analysis for guide vane design at 550mW coal fired boiler SCR system *Chung S.Y., Kim W.S.*	ID107: Heat transfer enhancement of a louver finned multi-row circular tube heat exchanger combined with curved delta-winglet vortex generators punched at the rear of tubes *Lin Z.M., Hou J.C., Liu S.S., Chen C.P., Zhang Y.H., Wang L.B.*	ID115: Effects of water content on the mass and heat transfer in Nafion membrane containing platinum particle *Xiang X., Chen L., Tao W.Q.*
12:25 - 14:00	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*		

	Conference Hall 1	*Conference Hall 3*	*Conference Hall 2*
	CFD and NUMERICAL HEAT/MASS TRANSFER 2 Chairs: ***Crepeau J.*** *(University of Idaho, Moscow, U.S.A.),* ***Perminov V.A.*** *(Tomsk Polytechnic University, Tomsk, Russia)*	**HEAT/MASS TRANSFER ENHANCEMENT 2** Chairs: ***Sikarwar B.S.*** *(Amity University Uttar Pradesh, Noida, India)***,** ***Surtaev A.S.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**MICRO/NANO HEAT/MASS TRANSFER 2** Chairs: ***Orejon D.*** *(University of Edinburgh, Edinburgh, U.K.),* ***Kuznetsov V.V.*** *(Institute of Thermophysics, Novosibirsk, Russia)*
14:00 - 14:25	*Keynote Lecture 2* **ID165: Direct molecular simulation of viscosity, diffusion and thermal conductivity of rarefied polyatomic gases and gas nanosuspensions** *Lezhnev E., Rudyak V., Lubimov D.*	*Keynote Lecture 2* **ID133: Stepping up to the next level of process intensification on the vapor-liquid mass transfer process** *Gao X., Li H., Li X.G.*	*Keynote Lecture 2* **ID242: Evaporation and boiling of shear–driven thin liquid films under intense heating** *Kabov O., Tkachenko E., Belosludtsev V., Zaitsev D.*
14:25 - 14:40	ID51: Three-dimensional natural convection heat transfer in a nanofluid-filled horizontal layer heated from below *Wang G., Ma B.S., Li S.Y.*	ID220: The influence of the surface structuring type on heat transfer in falling films of refrigerant mixture *Volodin O., Pecherkin N., Pavlenko A., Zubkov N.*	ID241: Experimental and theoretical studies of ordered arrays of microdroplets levitating over liquid and solid surfaces *Zaitsev D., Kirichenko D., Shatekova A., Ajaev V., Kabov O.*

14:40 - 14:55	ID61: Thermal hydraulic parameters optimization of supercritical water cooled solid breeder blanket for CFETR *Cheng J., Fan G., Su G.H.*	ID 148: Condensation heat transfer of R134A and R1234ZE(E) on horizontal tubes coated with hydrophobic coating *Ji W.T., Chong G.H., Mao S.F., Zhao C.Y., Tao W.Q.*	ID81: Thermal properties of 2D molybdenum disulfide *Wang J.F., Xie H.Q., Guo Z.X.*
14:55 - 15:10	ID63: Study on structure design and numerical simulation of high pressure liquid-gas ejector *She L.C., Fan G.M., Cheng J.*	ID 146: Moist air condensation on inclined hydrophobic metallic surfaces: simulation and experiments *Baghel V., Sikarwar B.S.,*	ID225: An influence of pressure disturbance on liquid-liquid flows in microchannels *Kovalev A., Yagodnitsyna A., Bilsky A.*
15:10 - 15:25	ID168: Numerical study of combustion of the diesel fuel sprayed with a steam jet in a prospective burner device *Krasinsky D., Tsepenok A.*	ID141: Pool boiling of fouling solution on coatings *Wang L.L., Wang Y., Cai Y.W., Hui L.F., Lv Y., Zhu J.L., Liu M.Y.*	ID167: The grain-boundary diffusion in microscale material *Chepak-Gizbrekht M.V., Knyazeva A.G.*
15:25 - 15:40	ID159: Calculations of schock-wave flow structure in axisymmetric channel with near-wall ethylene burning with throttle air jet *Kalinina A.P., Zamuraev V.P., Fedorova D.V.*	ID26: Parametric study of major influence factors and its optimization on heat transfer and friction characteristics in a rectangular channel with longitudinal vortex generator *Tang L.H., Zeng M.*	ID248: Dropwise condensation on coatless bioinspired metallic surfaces *Orejon D., Askounis A., Takata Y., Attinger D.*

15:40 - 15:55	ID153: Numerical and experimental heat transfer efficiency of honeycomb sorbent bed structure for atmospheric water harvesting *Wang W.W., Ge T.S., Dai Y.J., Wang R.Z.*	ID154: Flow structure of the wall jet with injection through the inclined round holes into a transverse trench *Chokhar I., Philippov M., Pakhomov M.*	
15:55 - 16:10	ID114: Numerical investigation on the aerodynamic noise in fully and confined helix channels based on synergy principle of flow and sound fields *Cao Y.P., L N.Q., Zeng M., Wang Q.W.*	**15:55 - 16:20** *Keynote Lecture 3* **ID40: The investigation of spray characteristics of dual-synthetic-jets actuator based on piezoelectric atomizer** *Wei H., Luo Z.B., Deng X.*	
16:10 - 16:30	**Coffee Break,** *Hall of 2nd Floor*		
16:30 - 18:20	**POSTER SESSION 1** *The Hall of the 2nd Floor* Chair: Prof. ***Y.T. Chen*** Members: Prof. ***A.N. Pavlenko***, Prof. ***Q.W. Wang***, Prof. ***B. Sunden***, Prof. ***Z.X. Guo***, Prof. ***V.I. Terekhov***		
18:30	**Welcome reception ,** *Cafe Kukuruza, Academpark, 2nd Floor*		
19:00	**IWHT2019 Committee Meeting**		

Day 2: Wednesday, 14 August, *Academpark*			
09:00 - 18:00	**Registration** *Hall of the 1st Floor*		
Plenary Lectures Session 2 *Big Conference Hall* Chairs: *Alekseenko S.V., Wang R.Z.*			
09:00 - 09:40	*PL3* Impact of micro- and nanostructures and nanofluids on heat transfer performance ***Bengt Sundén*** *(Lund University, Lund, Sweden)*		
09:40 - 10:20	*PL4* Recent trends in enhanced heat transfer research and development using nanofluids ***Zhixiong (James) Guo*** *(Rutgers University-New Brunswick, USA)*		
10:20 - 10:40	**Coffee Break,** *Hall of 2nd Floor*		
	Conference Hall 1	*Conference Hall 2*	*Conference Hall 3*
	CFD and NUMERICAL HEAT/MASS TRANSFER 3 Chairs: ***Cao L.H.*** *(Northeast Electric Power University, Jilin, China)*, ***Rudyak V.Ya.*** *(Novosibirsk State University, Novosibirsk, Russia)*	**HEAT/MASS TRANSFER IN POLLUTANT EMISSION CONTROL SYSTEMS** Chairs: ***Liu N.R.*** *(Northwestern Polytechnical University, Xi'an, China)*, ***Shtork S.I., Lukashov V.V.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**HEAT/MASS TRANSFER ENHANCEMENT 3** Chairs: ***Sunden B.*** *(Lund University, Lund, Sweden)*, ***Gao X.*** *(Tianjin University, Tianjin, China)*
10:40 - 11:05	*Keynote Lecture 3* **ID78: Conjugate heat transfer predictions on impingement and film composite cooling of blade leading edge model for gas turbine** *Liu Z., Zhang Z.X., Feng Z.P., Simon T.W.*	*Keynote Lecture 1* **ID126: Simulation study on NOX formation and emission characteristics of a 600 MW unit under off-design conditions** *Zhang S.P., Liu M., Yan J.J.*	*Keynote Lecture 4* **ID14: Micro/nanoscale surface modification for enhancement of boiling heat transfer** *Surtaev A.S., Serdyukov V.S., Kuznetsov D.V., Pavlenko A.N., Safonov A.I., Kalita V.I.*

11:05 - 11:25	ID22: 3D simulation on the heat and mass transfer performance of a falling film dehumidifier *Wen T., Lu L.*	ID34: Experimental study on airflow uniformity in a simulated small container data center *Chu W.X., Wang C.C.*	ID152: Experimental investigation on heat transfer characteristics of various nanofluids in an electric heater *Zhai Z.J., Zhu H.X., Wang J., Yang L., Sundén B.*
11:25 - 11:40	ID117: Modeling nonlocal transport infectious diseases *Derevich I., Panova A.*	ID96: A potential source for PM2.5: analysis of fine particle generation mechanism in wet flue gas desulfurization system *Jiang B., Xie Y., Xia D., Liu X.*	ID183: Experimental study of steam generation at boiling nanofluid *Struchalin P.G., Delov M.I., Zeynalyan K.S., Kuzmenkov D.M., Kutsenko K.V., Balakin B.V.*
11:40 - 11:55	ID69: Effect of temperature characteristics on the thermal striping in a mixing T-junction *Su B., Ke H.B., Lin M., Wang Q.W.*	ID190: Research on indoor fine particle control method for high-rise buildings in Xi'an *Liu N.R., Han Y.M., Hou P.M., Zhang B.C., Zhang X.*	ID76: Heat transfer at evaporation/boiling in thin horizontal liquid layer on micro-structured surfaces under low pressures *Zhukov V., Pavlenko A., Bessmeltsev V.*
11:55 - 12:05	ID199: Effect of the wall properties on the shock wave / laminar boundary layer interaction *Kutepova A., Reshetova A., Polivanov P., Sidorenko A.*	ID91: A novel method for efficient purification of hot gas based on stainless steel fiber cloth *Qu H.Y., Xia D.H., Liu X.J.*	ID244: Heat transfer and hydrodynamic characteristics at evaporation of liquid film irrigating a horizontal bundle of finned tubes *Gogonin I.I.*

12:05 - 12:20	ID197: Experimental and numerical study of jet mixing in supersonic crossflow *Fedorova N., Goldfeld M., Valger S.*	ID103: Experimental studies on condensation and decontamination in actual flue gas *Wang Y.G., Jiao J., Liu Y., Liang Z., Zhao Q.X.*	ID71: A study on thermal characterization of a square LHTS module with both copper foam and multiple PCMS *Guo S.Z., Xiao G.M., Wang X., Du Y.X.*
12:20 - 14:00	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*		
	Conference Hall 1	*Conference Hall 2*	*Conference Hall 3*
	CFD and NUMERICAL HEAT/MASS TRANSFER 4 Chairs: ***Feng Z.P.*** *(Xi'an Jiaotong University, Xi'an, China)***,** ***Premachandran B.*** *(Indian Institute of Technology Delhi, New Delhi, India)*	**MULTIPHASE HEAT/MASS TRANSFER 1** Chairs: ***Das P.K.*** *(Indian Institute of Technology Khaharagpur, Khaharagpur, India),* ***Yagov V.V.*** *(University "Moscow Power Engineering Institute", Moscow, Russia)***,** ***Pakhomov M.A.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**ADVANCED ENERGY SYSTEMS and MATERIALS 1** Chairs: ***Kato Y.*** *(Tokyo Institute of Technology, Tokyo, Japan)* ***Li X.Y.*** *(Xi'an Jiaotong University, Xi'an, China)*
14:00 - 14:25	*Keynote Lecture 4* **ID116: Mathematical modeling of wildland fire initiation, spread and impact on buildings** *Perminov V.A., Fryanova K.O.*	*Keynote Lecture 1* **ID240: Leidenfrost phenomenon and rewetting of hot vertical tubes by bottom flooding** *Das P.K., Paul G., Manna I.*	*Keynote Lecture 1* **ID150: Progress on thermal meta-devices for camouflage functionality** *Hu R.*
14:25 - 14:40	ID110: Numerical investigation of Darcy flow distributions in infinite 2-D arrays based on Voronoi tessellation *Xie B.J., Wang J.Y., Wang Q.W.*	ID166: Stefan problem with internal heat generation: comparison of numerical modeling and analytical solution *Crepeau J., Sakhnov A.*	ID101: Research inside a gas heating device with different heat transfer medium *Guo Y., Huang Z.Q., Chen H., Ouyang Y., Bi H.R.*

14:40 - 14:55	ID44: Thermal structure couple analysis of the liquid-nitrogen coring drill bit *Yan D.J., Yan M., Lin H.F.*	ID132: Quenching characteristics of metals with high thermal effusivity *Yagov V., Zabirov A., Kanin P., Ryazantcev V., Kabankov O.*	ID219: Gradient ceramic structures formation from an impact jet of organometallic compounds vapors flowing onto the barrier *Lukashov V.V., Igumenov I.K., Abdrakhmanov R.Kh.*
14:55 - 15:10	ID52: Numerical study on soft galloping of a triangular prism *Zhang D.H., Wang W.H., Feng L.*	ID108: Influence of the thermal parameters on the bubble heat balance at transient boiling of subcooled water *Khan P.V., Levin A.A.*	ID85: Study on applying field synergy principle in convection heat exchange of the solar photovoltaics thermal system *Zhang Q., Yang Z., Li N., Feng R., Shi P.F.*
15:10 - 15:25	ID68: Simulation melting of ice considering selective absorption of radiation *Sleptsov S., Savvinova N., Grishin M.*	ID36: Experimental study on a separator for gas liquid separation *Wang G., Fan G.M., Yan C.Q., Xu J.X., Zeng X.B., Liu A.*	ID188: Investigation of high speed steam jet effect on combustion of substandard liquid hydrocarbons *Kopyev E.P., Anufriev I.S., Osintsev Ya.A., Mukhina M.A.*
15:25 - 15:40	ID204: Optimization of injection parameters for paraffin removal process with hot water in paraffin-troubled well *Liu H., Zhang K.F., Duan X.Y., Gong L., Xu M.H.*	ID155: Formation of thermocapillary structures in heated liquid film *Chinnov E.*	ID99: Thermodynamic analysis and performance prediction on dynamic response characteristic of PCHE in 1000MW S-CO_2 coal fired power plant *Ma T., Li M.J., He Y.L.*
15:40 - 16:00	**Coffee Break,** *Hall of 2nd Floor*		

	Conference Hall 1	*Conference Hall 2*	*Conference Hall 3*
	HEAT/MASS TRANSFER in RENEWABLE and CLEAN ENERGY SYSTEMS 1 Chairs: ***Zhu B.S.*** *(Tsinghua University, Beijing, China),* ***Levin A.A.*** *(Melentiev Energy Systems Institute, Irkutsk, Russia)*	**MULTIPHASE HEAT/MASS TRANSFER 2** Chairs: ***Li R.*** *(University of British Columbia, Kelowna, Canada)**,*** ***Xia X.L.*** *(Harbin Institute of Technology, Harbin, China),* ***Chinnov E.A.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**ADVANCED ENERGY SYSTEMS and MATERIALS 2** Chairs: ***Tang G.H.*** *(Xi'an Jiaotong University, Xi'an, China)* ***Hu R.*** *(Huazhong Univercity Science and Technology, Wuhan, China)*
16:00 - 16:25	*Keynote Lecture 1* **ID140: Development of the pumped hydro energy storage technology in China** *Zhu B.S.*	*Keynote Lecture 2* **ID211: Flow boiling heat transfer over tube bundles: facts on energy conservation** *Das M.K., Swain A.*	*Keynote Lecture 2* **ID59: Off-design analysis of a supercritical CO_2 Brayton cycle with ambient air as the cold source driven by waste heat recovery from gas turbine** *Han J.M., Song Y.F., Xu M.J., Ma Q.G., Wang Z.H., Wang J.F., Dai Y.P.*
16:25 - 16:40	ID201: Evaluation of the effect of wood on ignition delay of mixed fuels based on coal in grate and flow burning *Kuznetsov G., Yankovsky S., Tolokolnikov A., Krupodepova E., Cherednik I.*	ID111: Boiling heat transfer of drop train impacting high temperature surface *Gao X., Li R.*	ID160: Study of combustion of composite powder fuel mechanochemically formed from coal with wastes of wood processing, paper industries and agriculture *Kuznetsov A.V., Butakov E.B., Plusnin P.E.*

16:40 - 16:55	ID137: Investigation of the features of polyolephines and wood biomass thermochemical conversion for their energy utilization *Donskoy I.G., Shamanskiy V.A., Kozlov A.N., Penzik M.V., Kozlova M.A.*	ID16: Evolution of vapor bubbles and local heat transfer at pool boiling at subatmospheric pressures *Serdyukov V.S., Surtaev A.S.*	ID42: Performance analysis on free-piston Stirling generator based on a thermodynamic-dynamic coupling mathematical model *Chen P.F., Liu Y.W., Ye W.L., Liu L.*
16:55 - 17:10	ID46: Experimental study on the heat extraction characteristics of coal mine ventilation air methane preheat catalytic oxidation reactor *Shi Y.Y., Liu Y.Q., Sun P., Mao M.M., Zhou Y.*	ID82: Influences of inclined angle on dryout and post-dryout heat transfer of an inclined tube *Shi J.X., Sun B.Z., Yu X., Wu W.Z.,Zhao Z.R.*	ID161: Thermal stability of water-in-diesel microemulsion as an advanced fuel for energy and chemical technologies *Ashihmin A., Piskunov M., Yanovsky V.*
17:10 - 17:25	ID90: Hydrokinetic energy conversion: basis of hydro farm technology *Okulov V., Kabardin I., Litvinov I., Mikkelsen R., Naumov I., Sørensen J., Alekseenko S.*	ID128: Flow structure and heat transfer in a turbulent vertical bubbly flow downstream of a sudden duct expansion *Chinak A.V., Lobanov P.D., Pakhomov M.A.*	ID64: Sensitivity analysis of uncertain parameters based on quasi-two dimensional mathematics model of solid oxide fuel cell *Wu C.R., Du Q., Jiao K.*
17:25 - 17:40	ID193: Numerical simulation and experimental study of the combustion of tarred pyrolysis gas in an ejector *Kozlov A., Levin A., Donskoy I., Penzik M., Safarov A.*	ID174: Experimental investigation of heat transfer and shear stress of bubble flow in rods assembly *Vorobyev M.A., Kashinsky O.N.*	ID177: Simulation of chemical and structural conversion in adhesive bonding layer during laminated object manufacturing process *Saifullin E., Knyazeva A.*

17:40 - 17:55	ID149: Temperature field simulation of lithium batteries based on phase change materials coupled with liquid cooling tubes *Tu G.H., Zhao J., Xiao J.H.*	ID32: Experimental investigation on flow behavior of particles in the spouted bed with longitudinal vortex generator *Wu F., Shang L.Y., Kai Y., Ma X.X., Wang G.*	**17.40-18.05** *Keynote Lecture 3* **ID269: Active carbon recycling system (ACRES) for the next low-carbon society** *Kato Y., Numata T., Nakajima K., Maruyama Y., Takasu H.*
17:55 - 18:10	ID224: Heating and cooling of a battery pack of a solar electric car *Kasatkin I., Egorov M.*	ID155: Drop formation in microchannels *Chinnov E., Ronshin F.*	
18:10 - 18:25	ID260: Flow pattern characteristics of R-245fa in circular tube with boundary of non-uniform heat flux *Wang D.H., Zhao L., Lu Y.N., Deng S., Nie X.H., Zhao D.P.*		
18:40	**Banquet,** *Cafe Kukuruza, Academpark, 2nd Floor*		

Day 3: Thursday, 15 August, *Novosibirsk State University*			
08:55 - 18:00	**Registration** *Hall of the 1st Floor*		
08:55 - 09:00	A Welcome speech from Rector of Novosibirsk State University ***M.P. Fedoruk*** *Conference Hall (3307)* Chairs: ***Guo Z.X., Pavlenko A.N.***		
Plenary Lectures Session 3 *Conference Hall (3307)* Chairs: ***Guo Z.X., Pavlenko A.N.***			
09:00 - 09:40	*PL5* Potentials and technologies of waste heat recovery from high temperature solid granular ***Qiuwang Wang*** *(Xi'an Jiaotong University, Xi'an, China)*		
09:40 - 10:20	*PL6* Finite-size coherent particles structures ***Hendrik Kuhlmann*** *(TU Wien, Vienna, Austria)*		
10:20 - 10:40	**Coffee Break**		
	Room A (2322)	*Room B (2328)*	*Room C (3312)*
	MULTIPHASE HEAT/MASS TRANSFER 3 Chairs: ***Das M.K.*** *(Indian Institute of Technology Bhubaneswar, Bhubaneswar, India),* ***Pecherkin N.I.*** *(Institute of Thermophysics, Novosibirsk, Russia)*	**HEAT/MASS TRANSFER AT HIGH TEMPERATURE 1** Chairs: ***Duan X.Y.*** *(China University of Petroleum (East China), Qingdao, China)* ***Xu Z.M.*** *(Northeast Electric Power University, Jilin, China)*	**HEAT/MASS TRANSFER IN POROUS MEDIA 1** Chairs: ***Yang L.B.*** *(Harbin Engineering University, Harbin, China),* ***Zhang L.Z.*** *(South China University of Technology, Guangzhou, China)*
10:40 - 11:05	*Keynote Lecture 3* **ID189: Effect of the angle of rotation of structured packing layers on separation efficiency in distillation column** *Pavlenko A., Pecherkin N., Zhukov V., Nazarov A., Meski G., Houghton P.*	*Keynote Lecture 1* **ID145: Particle size measurement of reaction product aerosol of sodium-oxygen** *Deguchi Y., Kamimoto T., Kikuchi S., Kurihara A., Takata T., Ohshima H.*	*Keynote Lecture 1* **ID178: A simple model for estimation of NO_X and CO_2 emissions of porous burners** *Fursenko R., Maznoy A., Kirdyashkin A., Minaev S.*

11:05 - 11:25	ID66: Effects of droplet parameters on heat transfer in the mist flow region of a helically coiled tube *Yu X., Sun B.Z., Shi J.X., Zhao Z.R., Wu W.Z., Li Y.J.*	ID83: A multi-scale surface roughness characterization principle of thermal contact resistance prediction model test-validated for Ti-6Al-4V alloy *Dai Y.J., Ren X.J., Qiu S.Z., Tao W.Q.*	ID112: Lattice Boltzmann simulation of reacting flow in open cell foam with gradient porosity and pore diameter *Cheng Z.L., Sobhani S., Yang J., Ihme M., Wang Q.W.*
11:25 - 11:40	ID213: Stretched flame behavior in a planar meso-scale channel with heat conducting walls *Mokrin S., Fursenko R., Uriupin G., Minaev S.*	ID74: Flow and heat transfer characters in the integral internal cooling channel of a turbine blade *Guo T., Zhu H.R., Zhou Z.X.*	ID230: Pore scale numerical simulation of heat transfer in propagating thermal wave during filtration combustion of rich and lean methane-air mixtures *Yakovlev I., Zambalov S.*
11:40 - 11:55	ID114: Simulation and mathematical model of frosting process of heat exchanger fins at macroscopic and mesoscopic scales *Chen J., Yang C.C., Wang Q.W., Zeng M., Gao Q.*	ID147: Numerical modeling of interface diffusion during heating of spherical metal heterostructure *Golovneva E., Golovnev I., Igoshkin A.*	ID119: An analytical model of subcritical and critical vapor-liquid flow through a granular bed *Tairov E.A., Khan P.V.*
11:55 - 12:05	ID228: Experimental investigation of freon mixture spreading over the structured Sulzer 500X packing at single drip point irrigation *Zhukov V., Pavlenko A., Slesareva E., Pecherkin N., Meski G., Houghton P.*	ID54: One-step synthesis of binary Mn–Ce oxides by a rodex-precipitation as highly efficient themalcatalysts for the residual methane oxidizing *Zhong L., Fang Q.G., Li X., Zhang C., Chen G.*	ID215: A laboratory setup based on porous burner for coal particles combustion investigation *Ponomareva A., Tsoy K., Mokrin S., Shtym K.*

12:05 - 12:20	ID102: Investigation on humidification performance of rotary desiccant system in winter *Yang F., Ge T.S., Peng J.J.*		ID51: Natural convection of copper-water nanofluid in a square cavity partially filled with porous medium *Ma B.S, Wang G., Li S.Y.*
12:20 - 14:00	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*		
14:00 - 15:45	**POSTER SESSION 2** *The Recreation Hall near the Conference Hall (3307)* Chair: Prof. ***Y.T. Chen*** Members: Prof. ***A.N. Pavlenko*****,** Prof. ***Q.W. Wang*****,** Prof. ***B. Sunden*****,** Prof. ***Z.X. Guo*****,** Prof. ***V.I. Terekhov***		
15:45 - 16:00	**Coffee Break**		
16:00 - 20:00	**Excursion to the city of Novosibirsk**		

Day 4: Friday, 16 August, *Novosibirsk State University*				
09:00-14:00	**Registration,** *Hall of the 1st Floor*			
Plenary Lectures Session 4, *Conference Hall (3107)* Chairs: ***Sunden B., Kuhlmann H.C.***				
09:00-09:40	*PL7* Heat transfer research for high-temperature solar thermal applications ***Wojciech Lipiński*** *(The Australian National University, Canberra, Australia)*			
	Room A (3318)	*Room B (3312)*	*Room C (2322)*	*Room D (2328)*
	HEAT/MASS TRANSFER AT HIGH TEMPERATURE 2 Chairs: ***Deguchi Y.*** *(Tokushima University, Tokushima, Japan)***,** ***Lipinski W.*** *(The Australian National University, Canberra, Australia)*	**HEAT/MASS TRANSFER IN POROUS MEDIA 2** Chairs: ***Li M.J.*** *(Xi'an Jiaotong University, Xi'an, China)***,** ***Fursenko R.*** *(Khristianovich Institute of Theoretical and Applied Mechanics, Novosibirsk, Russia)*	**Special Session 2** **THERMAL ENERGY STORAGE 1** Chairs: ***Aristov Yu.I.*** *(Boreskov Institute of Catalysis, Novosibirsk, Russia)***,** ***Wang R.Z.*** *(Shanghai Jiaotong University, Shanghai, China)***,** ***Murthy S.S.*** *(Indian Institute of Science, Bengaluru, India)*	**Special Session 3** **HEAT TRANSFER ADVANCES FOR COMPACT HEAT EXCHANGERS 1** Chairs: ***Ma T.*** *(Xi'an Jiaotong University, Xi'an, China)***,** ***Chen Y.T.*** *(University of Las-Vegas, Las-Vegas, U.S.A.)*
09:45-10:10	*Keynote Lecture 2* **ID204: Numerical studies on thermal performance of a modified zigzag-type printed circuit heat exchanger** *Zhang X.J., Duan X.Y., Gong L., Xu M.H.*	*Keynote Lecture 2* **ID109: Numerical study on gas production from methane hydrate by depressurization in reactor** *Zhang Q., Yang L.B., Shao Y., Wang S., Xu R.*	*Keynote Lecture 1* **ID262: Adsorption system with two-phase heat exchanger for effective accumulation and safe storage of gaseous fuel** *Vasiliev L.L., Kanonchik L.E., Rabetsky M.I.*	*Keynote Lecture 1* **ID205: Analysis of compact heat exchanger for a S-CO_2 Brayton cycle** *Swamy K., Pandey V., Lakshminarayana S., Kumar P., Dutta P.*

10:10-10:25	ID185: Energy and environmental characteristics of combustion of waste as a part of composite liquid fuel *Vershinina K., Strizhak P., Nyashina G.*	ID75: Numerical simulation of heat and mass transfer in hydrate-bearing porous media during dissociation induced by depressurization *Ge K., Wang J.Q., Yang L.B., Li Y.J., Zheng F.M.*	*Invited report* ID243: Adsorption method for moisture and heat regeneration in buildings: adsorbent optimal for the western Siberia zone *Gordeeva L., Grekova A., Wang W., Ge T., Aristov Yu.*	*Invited report* ID59: Dynamic performance analysis of PCHE for supercritical carbon dioxide Brayton power cycle with different discretization schemes *Song Y.F., Han J.M., Xu M.J., Wang Z.H., Ma Q.G., Dai Y.P.*
10:25-10:40	ID94: Numerical solution of non-Fourier conduction and volumetric radiation in a cylindrical participating medium *Sun Y.S., Ma J., Li X.Y.*	ID169: Experimental research on heat transfer performance of compressed expanded natural graphite /PCM *Li B., Liu Y., Qu Z.G.*		
10:40-11:00	**Coffee Break**			

	Room A (3318)	*Room B (3312)*	*Room C (2322)*	*Room D (2328)*
	HEAT/MASS TRANSFER AT HIGH TEMPERATURE 2 Chairs: ***Deguchi Y.*** *(Tokushima University, Tokushima, Japan)*, ***Lipinski W.*** *(The Australian National University, Canberra, Australia)*	**HEAT/MASS TRANSFER IN POROUS MEDIA 2** Chairs: ***Li M.J.*** *(Xi'an Jiaotong University, Xi'an, China)*, ***Fursenko R.*** *(Khristianovich Institute of Theoretical and Applied Mechanics, Novosibirsk, Russia)*	**Special Session 2** **THERMAL ENERGY STORAGE 1** Chairs: ***Aristov Yu.I.*** *(Boreskov Institute of Catalysis, Novosibirsk, Russia)*, ***Wang R.Z.*** *(Shanghai Jiaotong University, Shanghai, China)*, ***Murthy S.S.*** *(Indian Institute of Science, Bengaluru, India)*	**Special Session 3** **HEAT TRANSFER ADVANCES FOR COMPACT HEAT EXCHANGERS 2** Chairs: ***Chen Y.T.*** *(University of Las-Vegas, Las-Vegas, U.S.A.)*, ***Kuznetsov V.V.*** *(Institute of Thermophysics, Novosibirsk, Russia)*
11:00-11:15	ID23: Numerical investigation on velocity effect of granula materials in terms of heat transfer for cross flow using DEM *Tan Z.T., Guo Z.G., Tian X., Yang J., Wang Q.W.*	ID187: Transfer of products thermal decomposition of oil shale *Knyazeva A.G., Maslov A.L.*	*Invited report* ID218: A comparative thermodynamic study of ammoniated salt based sorption thermal energy storage systems *Sharma R., Kumar E.A., Dutta P., Murthy S.S.*	*Invited report* ID105: Experimental investigation of single-phase heat transfer in horizontal mini-tubes with different bending inlets *Tam H.K., Tam L.M., Ghajar A.J., Wang Q., Chen X.W., Lei W.C.*
11:15-11:30	ID65: Thermal insulation performance characterization of thermal protection material under large temperature difference and its thermal conductivity identification *Shang C.Y., Zhang H., Wang X., Li Y.M.*	**11:15 - 11:40** *Keynote Lecture 3* **ID41: Fabrication and analysis of highly hydrophobic and permeable block GO-PVP/PVDF composite membranes for dehumidification** *Zhang L.Z., Su Q.W.*	*Invited report* ID146: Low cost device for measuring the thermal conductivity of composite phase change materials *Bhandwal M., Verma A., Sikarwar B.S.*	*Invited report* ID34: Numerical simulation of frosting on an oveal finned-tube heat exchanger *Yu B., Zhang P., Zeng M., Wang C.C., Chu W.X.*

11:30-11:45			*Invited report* ID169: Experiment on the charging and discharging process of a latent energy storage system *Fang Y., Qu Z.G.*	*Invited report* ID60: Effect of temperature on fouling inhibition of sodium carboxymethyl cellulose based on molecular dynamic simulation *Xu Z.M., Zhao Y., Wang J.T., Wang B.B.*
11:45-12:00			*Invited report* ID125: Preliminary analysis and optimization of a novel supercritical compressed carbon dioxide energy storage system *Liu S.Y., Zhang H.C., Liu X.T., Yin D.Z.*	
12:00-13:30	**Lunch,** *Cafe Kukuruza, Academpark, 2nd Floor*			
	Room A (3312)	*Room B (2322)*	*Room C (2328)*	
	Special Session 1 **ADVANCES IN COMPUTATIONAL HEAT/MASS TRANSFER** Chairs: ***Kuhlmann H.C.*** *(TU Wien, Vienna, Austria),* ***Kupershtokh A.L.*** *(Lavrentyev Instituter of Hydrodynamics, Novosibirsk, Russia)*	**Special Session 2** **THERMAL ENERGY STORAGE 2** Chairs: ***Aristov Yu.I.*** *(Boreskov Institute of Catalysis, Novosibirsk, Russia),* ***Wang R.Z.*** *(Shanghai Jiaotong University, Shanghai, China),* ***Murthy S.S.*** *(Indian Institute of Science, Bengaluru, India)*	**Special Session 3** **HEAT TRANSFER ADVANCES FOR COMPACT HEAT EXCHANGERS 3** Chairs: ***Chen Y.T.*** *(University of Las-Vegas, Las-Vegas, U.S.A.),* ***Li M.J.*** *(Xi'an Jiaotong University, Xi'an, China)*	

13:30-13:55	*Keynote Lecture 1* **ID258: Simulation of flows with phase transitions and heat transfer using mesoscopic methods** *Kupershtokh A., Medvedev D.*	*Keynote Lecture 2* **ID172: Adsorptive storage/amplification of low-temperature heat in countries with cold climate** *Aristov Yu.I.*	*Keynote Lecture 2* **ID216: Two-phase compact and microchannel heat exchangers: a review and future applications for high heat flux removal** *Kuznetsov V.V., Shamirzaev A.S.*
13:55-14:10	*Invited report* ID35: Numerical simulation of bubble formation and acoustic characteristics under different swing conditions *Chen W.X., Huang C.X., Song S.L., Fan J., Chong D.T., Yan J.J.*	*Invited report* ID181: Stabilization of K_2CO_3 in expanded vermiculite for thermochemical energy storage *Shkatulov A., Huinink H.*	*Invited report* ID106: Numerical investigations on the shell-side mixed refrigerant distribution of LNG process with a new structure *Du X., Niu Y., Wang Q.*
14:10-14:25	*Invited report* ID14: Simulation of bubble behavior at boiling on liophobic surfaces using lattice Boltzmann method *Moiseev M., Surtaev A.*	*Invited report* ID232: Composites “LiCl inside porous matrix” for adsorption heat transformation: methanol sorption dynamics *Strelova S., Gordeeva L., Grekova A., Aristov Yu.*	*Invited report* ID88: Flow boiling and CHF of saturated refrigerants in minichannel at high reduced pressure *Belyaev A., Dedov A., Zanosko A.*
14:25-14:40	*Invited report* ID53: Heat transfer and flow mechanisms of jetting deflection in a novel bended channel cooling for gas turbine blades *He W., Deng Q.H., He J., Gao T.Y., Feng Z.P.*	*Invited report* ID113: Thermal performance of multi stage thermal storage based on open sorption system *Yan T.S., Li T.X., Zhang Y.N., Wang R.Z.*	*Invited report* ID144: Flow and heat transfer of fluid in a pulsating heat pipe *Sharma M., Sikarwar B.S.*

14:40-14:55	*Invited report* ID78: Analyses on aerodynamic and heat transfer characteristics of nozzle guide vanes under integrated simulation of combustor and turbine *Zhang W.H., Wang Z.D., Wang Z.H., Feng Z.P.*	*Invited report* ID176: Development and investigation of a demonstration residential heating system integrating with latent heat storage *Zhao B.C., Yao J.Y., Li T.X., Wang R.Z.*	*Invited report* ID203: Quantitative analysis on thermal-conduction resistance of typical printed circuit heat exchangers *Shi H.N., Ma T., Cheng X., Hu Y., Wang Q.W.*
14:55-15:10	*Invited report* ID195: Performance prediction of pillow plate channel using artificial neural network *Kumar S., Premachandran B., Subbarao P.M.V.*	*Invited report* ID118: A novel shape-stabilized phase change material for light-thermal conversion and energy storage *Wu M.Q., Wu S., Li T.X, Wang R.Z.*	*Invited report* ID40: Active control of sprays using a dual synthetic jet actuator *Luo Z.B., Deng X., He W.*
15:10-15:25	*Invited report* ID217: Direct numerical simulation of turbulent flow and heat transfer in a hexagonal rod bundle *Sergeenko K., Chulyunin A., Krasnopolsky B.*		
Plenary Lectures Session 5, *Conference Hall (3107)* Chairs: ***A. Pavlenko, Y.T. Chen***			
15:25-16:00	*PL8* Modern trends and challenges in development of cooling technologies for new generation of Huawei products ***Leonid Vassiliev*** *(Bel Huawei Technologies LLC, Minsk Research Center, Minsk, Belarus)*		
16:10	**Closing Ceremony,** *Conference Hall (3107)* Conference Chairman ***A. Pavlenko*** and Co-Chairman ***Q.W. Wang*** Prof. ***Y.T. Chen,*** Ceremony Young Scholars Best Posters Award, Prof. ***Y.J. Li,*** Information about IWHT2021		

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Poster Session 1

Day 1: Tuesday, 13 August, 16:30 - 18:20, *Academpark, Hall of the 2nd Floor*

ID21 Li G.P., Lu L. EFFECTS OF MEMBRANE CHARACTERISTICS ON PERFORMANCE OF A SOLAR HOLLOW FIBER MEMBRANE-BASED DESALINATION SYSTEM

ID27 Guo Y.M, Zhao L., Bai B.F., Luo Z.Y., Chen T.F., Sen Palash INFLUENCE OF DIFFERENT INJECTION ANGLE ON MICROCHANNEL/MICROJET HYBRID COOLING SCHEME

ID45 Long H., Lin H.F., Yan M. STUDY ON ADSORPTION THERMODYNAMICS OF DIFFERENT COMPONENT GASES IN COAL SAMPLE

ID48 Zeng S., Zhang L.Z. PERFORMANCE ANALYSIS AND IMPROVEMENT OF COMPOSITE MEMBRANE FOR SEAWATER DESALINATION USING MOLECULAR DYNAMICS SIMULATION

ID57 Wang J.Q., Han F.X., Zhang H.Y. GAS PRODUCTION SIMULATIONS FOR GAS-SATURATED AND WATER-SATURATED HYDRATE RESERVOIRS VIA DEPRESSURIZATION

ID77 Chen H.C., Gong P.F., Zheng S.X., Zhao P., Dai Y.P. THERMODYNAMIC ANALYSIS OF AN IMPROVED TRANSCRITICAL CO2 CYCLE AND RECOVERY OF CO2 IN GAS TURBINE EMISSION

ID86 Zhou F., Xia D.H. A CONVECTION-RADIATION CONVERTER FOR 3D METAL HONEYCOMB STRUCTURE AND ITS RADIATION CAPABILITY

ID87 Pan A.J., Zhang L.Z., Lu H. EXPERIMENTAL MEASUREMENT AND NUMERICAL SIMULATION OF DUST PARTICLE DEPOSITION ON SUPERHYDROPHOBIC SURFACE

ID89 Liu L.L., Wang J., Sun F.X., Xia X.L. INVERSE ANALYSIS ON PERMEABILITY OF MICRO-NANO POROUS MATERIALS BASED ON TWO-DIMENSIONAL SEEPAGE EQUATION

ID89 Zhang P., Sun F.X., Tan H.P., Xia X.L. HEAT TRANSFER OF AIR-WATER SPRAY IMPACTING ON A HEATED WALL

ID92 Chen L.F., An L., Yu W., Xie H.Q. EPOXY RESIN THEMAL INTERFACIAL MATERIAL MATERIALS WITH NI NANOPARTICLE-DECORATED GRAPHENE NANOSHEETS AS THERMAL FILLER

ID97 Kot V. A NEW METHOD FOR ANALYTICAL SOLUTION OF A NONLINEAR PROBLEM ON HEAT (MASS) DIFFUSION WITH A POWER-LAW DIFFUSITY

ID101 Guo Y., Gao Y.F., Huang Z.Q., Chen H., Ouyang Y.Y., Bi H.R. ANALYSIS OF POWER AND ENERGY MANAGEMENT SYSTEM FOR NEW ENERGY DINING CAR

ID115 Chen L., Nie Y.N., Wang S.Y., Tao W.Q. MOLECULAR DYNAMICS SIMULATION ON THE ELECTRICAL AND THERMAL CONDUCTIVITIES OF PROTON EXCHANGE MEMBRANE

ID136 Abbas S.Z., Xin F. FORMATION OF METHANE HYDRATE BY PHASE CHANGE OF ICE GRANULES IN NORMAL ALKANES TOWARDS THE PROCESS INTENSIFICATION

ID138 Liu Z.B., He Y.L., Jiang T., Fu J.N. NUMERICAL STUDY OF MULTI-FILED COUPLING PHENOMENON AND PARAMETERS OPTIMIZATION IN AN DC ELECTRIC ARC FURNACE

ID203 Zhang P., Ma T., Ke H.B., Lin Y.S., Wang Q.W. INVESTIGATION ON THERMAL–HYDRAULIC CHARACTERISTICS OF PRINTED CIRCUIT HEAT EXCHANGER USED FOR FLOATING NATURAL GAS LIQUEFACTION

ID223 Liu X.Y., Nguyen M.Q., He M.G. A NOVEL WASTE HEAT RECOVERY SYSTEM COMBING STEAM RANKINE CYCLE (RC) AND ORGANIC RANKINE CYCLE (ORC) FOR MARINE ENGINE

ID223 Wang T., Liu X.Y., He M.G. MOLECULAR DYNAMICS SIMULATION OF CONDENSATION NUCLEATION PROCESS OF NANO-REFRIGERANT ON WALL IN AN EXTERNAL FORCE FIELD

ID252 Zhu K., Li H.Q., Li H.L., Wang Y. EXPERIMENTAL INVESTIGATION ON THE START-UP PROCESS OF A NOVEL LOOP HEAT PIPE

ID14 Surtaev A., Nazarov A., Serov A., Miskiv N., Serdyukov V. EXPERIMENTAL STUDY OF LOCAL HEAT TRANSFER CHARACTERISTICS AT SPRAY COOLING THROUGH INFRARED THERMOGRAPHY

ID29 Baranovskiy N., Maksimov V., Razva A., Bazarov A. EXPERIMENTAL STUDY OF HEAT TRANSFER IN SURFACE SOIL LAYER DURING INERT HEATING

ID29 Baranovskiy N. EXPERIMENTAL STUDY OF TYPICAL FOREST FUEL IGNITION BY THE MOLTEN STEEL PARTICLE HEATED UP TO HIGH TEMPERATURES

ID29 Baranovskiy N. MATHEMATICAL SIMULATION OF CONIFEROUS TREE IGNITION BY THE CLOUD-TO-GROUND DISCHARGE TAKING INTO ACCOUNT WOOD HETEROGENEITIES

ID39 Plotnikov L., Zhilkin B., Brodov Yu. MANAGEMENT OF THERMAL AND MECHANIC FLOW CHARACTERISTICS IN THE OUTPUT CHANNELS OF A TURBOCHARGER CENTRIFUGAL COMPRESSOR

ID67 Goncharenko Y., Shtym K., Dorogov E., Kulik A. INVESTIGATION OF THE HEAT TRANSFER IN THE COAL DEFROSTING DEVICES

ID98 Finnikov K. ESTIMATIONS OF EFFICIENCY OF AN ENHANCED RANKINE CYCLE PUMPED THERMAL ENERGY STORAGE

ID119 Khan V.V., Dekanova N.P., Khan P.V. COMPARATIVE ANALYSIS OF HEAT SUPPLY OPTIONS FOR SMALL AND MIDDLE-SIZED SETTLEMENTS OF EASTERN SIBERIA BY USING UNCERTAIN AND FUZZY INFORMATION

ID137 Donskoy I.G. NUMERICAL MODELLING AND OPTIMIZATION OF PULVERIZED BIOMASS GASIFICATION PROCESS

ID139 Kong D.H., Afanasiev V.N. NUMERICAL STUDY OF THE INFLUENCE OF SLIT SHAPE AND SIZE BETWEEN THE LOWER WALL OF THE RIB AND THE PLATE ON TURBULENT FLOW AND HEAT TRANSFER CHARACTERISTICS

ID157 Zditovets A.G., Popovich S.S., Kiselev N.A., Vinogradov Yu.A., Strongin M.M., Medvetskaya N.V. MEASUREMENT OF ADIABATIC WALL TEMPERATURE IN SUPERSONIC AIR-DROPLET FLOW

ID158 Khazov D., Leontiev A., Vinogradov Y. ENERGY SEPARATION IN CHANNEL WITH SUCTION

ID159 Kalinina A.P., Popova D.S. NUMERICAL MODELING OF METHANE AIR MIXTURE BURNING IN PRESENCE OF STABILIZERS SYSTEMS

ID159 Kalinina A.P., Zamuraev V.P. MATHEMATICAL MODELLNG OF GAS DYNAMIC SUPERSONIC FLOW OF PERFORATED BODY

ID162 Igolnikov A.A., Rutin S.B., Skripov P.V. HEAT TRANSFER IN NANOFLUIDS: CRITICAL PROBLEMS AND AN APPROACH TO RESOLVE THEM

ID175 Burdukov A., Butakov E., Kuznetsov A. EXPERIMENTAL STUDIES OF IGNITION OF A 5 MW SEMI-INDUSTRIAL INSTALLATION IN EKIBASTUZ COAL USING ELECTROCHEMICAL ACTIVATION TECHNOLOGY

ID179 Kagramanov Yu.A., Tuponogov V.G., Nikitin A.D., Ryzhkov A.F. INFLUENCE OF COAL SYNTHESIS-GAS COMPOSITION ON THE THERMAL STABILITY OF ZNO SORBENTS IN THE DESULFURIZATION PROCESS

ID179 Nikitin A.D., Abaimov N.A., Butakov E.B., Burdukov A.P., Ryzhkov A.F. INFLUENCE OF STEAM SUPPLY TO AIR-BLOWN GASIFIER ON WORK OF HOT SYNGAS DESULFURISATION

ID180 Anufriev I.S., Kopyev E.P., Maltsev L.I., Shadrin E.Yu., Sharypov O.V. INVESTIGATION OF A GAS-DROPLET FLOW FROM A PNEUMATIC NOZZLE FOR CWS FUEL

ID180 Anufriev I.S., Kopyev E.P., Mukhina M.A., Osintsev Ya.A., Shadrin E.Yu. INVESTIGATION OF SUBSTANDARD LIQUID HYDROCARBONS SPRAYNG BY A STEAM JET

ID180 Anufriev I.S., Kopyev E.P., Mukhina M.A., Osintsev Ya.A., Shadrin E.Yu. INVESTIGATION OF CHARACTERISTICS OF DIESEL FUEL SPRAY IN PERSPECTIVE BURNER

ID184 Golubkina I.V., Osiptsov A.N. THE FLOW STRUCTURE AND HEAT TRANSFER IN TWO-PHASE BOUNDARY LAYER WITH AN ADMIXTURE OF NON-EVAPORATING DROPLETS

ID231 Kuznetsov D., Pavlenko A., Volodin O. HEAT TRANSFER AND THE DYNAMICS OF TRANSIENT PROCESSES AT LIQUID FILM FLOWING ON SMOOTH AND MODIFIED SURFACES

ID245 Kondrashov A., Egorov M. ENERGY CONSERVATION AND THE USE OF THE HEAT OF REFRIGERATION OF ICE ARENAS TO HEAT THE SCHOOL OF FIGURE SKATING OF ST. PETERSBURG

Poster Session 2

DAY 3: Thursday, 15 August, 14:00 – 15:45, *Novosibirsk State University***,** *Hall near the Conference Hall (3307)*

ID130 Wang Z.F., Han W., Zhang N. ASSESSMENT OF OFF-DESIGN PERFORMANCE OF AN ICCHP SYSTEM INTEGRATING COOLING/POWER COGENERATION USING AN ALTERNATIVE CONTROL FOR GAS TURBINE

ID131 Liu C.C., Wang Z.F., Han W., Kang Q.L., Liu M. A MULTIFUNCTIONAL HEAT PUMP SYSTEM FOR WASTE HEAT RECOVERY

ID141 Qiang A.H., Tang X.P., Sun B.F., Yang Y., Xue J.P., Zheng J., Ma Y., Xu X.P., An M., Ling N.S., Nie W.D., Li X.L., Liu M.Y. FLOW BOILING ENHANCEMENT BY FLUIDIZED SOLID PARTICLES

ID170 Zhao X.Y., Wu Z., Zhang H.Y., Zhang N., Yan S.Y. EFFECTS OF THE DUST DEPOSITED ON THE REFLECTIVITY AND HEAT CHARACTERISTIC OF THE LINEAR FRESNEL CONCENTRATOR SYSTEM

ID227 Zhang L.X., Xie Z.D., Wang Z.G., Li Z.P. EXPERIMENTAL STUDY ON HEAT TRANSFER ENHANCEMENT OF PHASE CHANGE MATERIALS IN DEHUMIDIFIERS

ID236 Isaiev M., Castanet G., Lemoine F., Lacroix D. HEAT PROPAGATION ACCROSS NANOSTRACTURED SOLID - FLUID INTERFACE: OLECULAR DYNAMICS STUDY

ID155 Aktershev S., Chinnov E., Shatsky E. RIVULET STRUCTURES IN LOCALLY HEATED VERTICAL LIQUID FILM

ID172 Aristov Yu., Grekova A., Gordeeva L., Dutta P., Murthy S., Li T., Wang R. RENEWABLE ENERGY BASED MULTIFUNCTIONAL SOLID SORPTION THERMAL BATTERY FOR YEAR-ROUND BUILDING THERMAL MANAGEMENT FOR DIVERSE CLIMATIC CONDITIONS OF RUSSIA, INDIA AND CHINA (REMULFUN)

ID186 Anisimova M., Knyazeva A. EVALUATION OF THE EFFECTIVE PROPERTIES OF THE COMPOSITE WITH INHOMOGENEOUS MATRIX

ID186 Anisimova M., Knyazeva A. MODEL OF THE PROCESS OF FORMATION OF THE TRANSITION ZONE BETWEEN THE PARTICLE AND THE MATRIX UNDER THE CONDITIONS OF COMPOSITE SYNTHESIS

ID194 Kharlamov G. THE MOLECULAR DIFFUSION MECHANISMS IN GASES AND LIQUIDS

ID197 Valger S., Fedorova N. INVESTIGATION OF INFLUENCE OF STABLE AND UNSTABLE THERMAL STRATIFICATION REGIMES ON GAS POLLUTANT TRANSFER IN AIR FLOW AROUND BLUFF BODY

ID198 Gubin V., Yankovsky S., Tolokolnikov A., Cherednik I., Gubin A. STUDY OF THE PROCESS OF IGNITION OF MIXED SOLID AND DISPERSED FUELS BASED ON COAL AND WOOD

ID200 Vishnyakov O., Budovsky A., Polivanov P., Sidorenko A. PIV MEASUREMENT OF THE SCHOCK WAVE / LAMINAR BOUNDARY LAYER INTERACTION

ID202 Yagodnitsyna A.A., Kovalev A.V., Bilsky A.V. IONIC LIQUID-WATER FLOW IN T-SHAPED MICROCHANNELS WITH DIFFERENT ASPECT RATIOS

ID208 Ralnikov P., Svishchev D., Ryzhkov A. SIMULATION OF AIR FLOW AROUND AN INERT PARTICLE PLACED IN A HEATED OVEN

ID209 Pashchenko S.E., Pashchenko S.S., Kalyada V.V., Zarvin A.E., Gartwich G.G., Alekseenko S.V., Kuznetsov A.V., Salomatov V.V., Strakhov M.Y., Skryabin Yu.V., Petrov O.V. RESEARCH PROCESSES FORMATION OF BUILD-UP ON THE WALLS OF BOILERS WHEN BURNING BROWN COAL (THE ROLE OF HIGHLY DISPERSED MAGNETIC INCLUSIONS OF IRON)
ID214 Leontiev A., Popovich S., Vinogradov Ya., Strongin M. EXPERIMENTAL RESEARCH OF SUPERSONIC FLOW HEAT TRANSFER IN THE WAKE OF A BACKWARD-FACING STEP
ID216 Kozulin I., Kuznetsov V. EXPLOSIVE VAPORIZATION OF WATER BASED NANOFLUID ON FLAT MICROHEATER
ID224 Gotovsky M., Gotovsky A., Mikhailov V., Sukhorukov Yu., Sukhorukova E., Lychakov V., Shcheglov A., Egorov M. FORMIC ACID IN FISCHER-TROPSCH PROCESS: ZERO CARBON DIOXIDE EMISSION IN THE ATMOSPHERE
ID224 Balunov B., Lychakov V., Egorov M., Sheglov A., Suhorukov Yu. RESULTS OF THERMAL TESTS OF RECIRCULATION COOLING INSTALLATIONS
ID226 Golovnev I., Igoshkin A., Kuchumov B., Igumenov I. FEATURES OF HEAT AND MASS TRANSFER OF PRECURSORS IN THE MOCVD PROCESSES IN NANOGAPS
ID228 Zhukov V., Moiseev M., Slesareva E. DYNAMICS OF PROPAGATION OF A SELF-SUSTAINED EVAPORATION FRONT ON THE FLAT AND CYLINDRICAL HEATERS
ID233 Cheverda V.V., Ronshin F.V., Eloyan K.S. CRISIS PHENOMENA IN SHEAR-DRIVEN LIQUID FILM WITH MICROGROOVED HEATER
ID234 Lu Z.S. EXPERIMENTAL ANALYSIS AND EXERGY CALCULATION OF ADSORPTION COOLING-ENERGY STORAGE- POWER GENERATION SYSTEMS
ID235 Makarov M., Makarova S. HEAT AND MASS TRANSFER IN THE BOUNDARY LAYER DURING EVAPORATION OF AQUEOUS SOLUTIONS OF ETHANOL AND ACETONE INTO THE AIR AND SUPERHEATED VAPOR COMPONENTS OF SOLUTIONS
ID238 Egorov M., Stepashkina A. TESTS OF MOISTURE SEPARATOR-REHEATER TURBINES OF SMOLENSK NPP
ID239 Chernyavskiy A., Pavlenko A. NUMERICAL SIMULATION OF WAVE FORMATION AND HEAT TRANSFER IN FALLING LIQUID FILMS ON UNSTEADY HEAT RELEASE
ID241 Zaitsev D., Kochkin D., Kabov O. THE EFFECT OF VISCOSITY ON RUPTURE OF NON-UNIFORMLY HEATED HORIZONTAL LIQUID FILM
ID242 Kabov O., Tkachenko E., Belosludtsev V., Zaitsev D. SUBCOOLED FLOW BOILING IN A FLAT MINICHANNEL UNDER LOCAL HEATING
ID244 Gogonin I.I. HEAT TRANSFER AT BOILING OF LIQUID FILM IRRIGATING A HORIZONTAL BUNDLE OF ROUGH TUBES
ID249 Skrypnik A., Popov I., Schelchkov A. HYDRAULIC RESISTANCE AND HEAT TRANSFER IN TUBE WITH SPIRALLY MICROFINS - REVIEW, GENERALIZATION AND RECOMENDATION
ID255 Agafontsev M., Loboda E., Matvienko O., Reyno V. COMPARISON OF EXPERIMENTAL DATA AND NUMERICAL SIMULATION OF LARGE TURBULENT STRUCTURES IN DIFFUSION FLAMES
ID37 Su Q.W., Zhang L.Z. FABRICATION OF HIGHLY HYDROPHOBIC AND PERMEABLE BLOCK GO-PVP/PVDF COMPOSITE MEMBRANES FOR SEAWATER DESALINATION
ID59 Xu M.J., Han J.M., Wang Z.H., Zhao P., Dai Y.P. THERMODYNAMIC ANALYSIS OF ENERGY STORAGE SYSTEM BASED ON LIQUID CARBON DIOXIDE AND COMPARISON STUDY WITH LIQUID AIR ENERGY STORAGE SYSTEM

ID95 Hu Y., Gao H., Liu X., He Y. NUMERICAL INVESTIGATION FOR CLEAN AND EFFICIENT COMBUSTION OF COAL IN A CIRCULATING FLUIDIZED BED
ID120 Qin J., Xu Z.G. PORE-SCALE MODELING OF FLOW BOILING MECHANISM IN METAL FOAMS BY LATTICE BOLTZMANN METHOD
ID129 Huang C.F., Xu M., Huai X.L. EXPERIMENTAL INVESTIGATION ON THE KINETIC OF CA(OH)2 DEHYDRATION WITH BORON NITRIDE DOPING FOR THERMOCHEMICAL ENERGY STORAGE
ID134 Qiao Y.H., Liu Y., Yang L., Liu T., Bao J.Y., Zhang M.Y. THERMAL PERFORMANCE OF PCM WALLBOARD WITH TYPICAL STRUCTURE: ARTIFICIAL CONTROLLED CONDITION EXPERIMENTAL INVESTIGATION
ID151 Dai B., Liu Q., Zheng Y.Y., Liang Y., Fan L.L., Zhao L. NUMERICAL SIMULATION ON THE HEAT TRANSFER IN SATELLITE STORAGE SANKS
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