EUROPEAN CONFERENCE ON THERMOPHYSICAL PROPERTIES 19

August 28 - September 1, 2011, Thessaloniki, Greece

Conference program

19th European Conference on Thermophysical Properties

PROGRAM

Organized by the

Laboratory of Thermophysical Properties & Environmental Processes
Chemical Engineering Department
Aristotle University of Thessaloniki, Greece

http://19ectp.cheng.auth.gr/

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Contents

About the Conference

The present conference is the 19th in a series of very successful conferences on Thermophysical Properties held in Europe since 1968. They originally took place every two years and only after reaching agreement between other conferences, was it decided to hold them every three years. Previous locations are:

1968 Baden-Baden, Germany
1970 Salford, U.K.
1972 Turin, Italy
1974 Orleans, France
1976 Moscow, Russia
1978 Dubrovnik, Yugoslavia
1980 Antwerpen, Belgium
1982 Baden-Baden, Germany
1984 Manchester, U.K.
1986 Rome, Italy
1988 Umea, Sweden
1990 Vienna, Austria
1993 Lisbon, Portugal
1996 Lyon, France
1999 Würzburg, Germany
2002 London, U.K.
2005 Bratislava, Slovak Republic
2008 Pau, France

The 2011 conference is organized by the Laboratory of Thermophysical Properties & Environmental Processes of the Chemical Engineering Department at Aristotle University of Thessaloniki.

The conference includes plenary and invited lectures, oral presentations, poster sessions and sessions on specialized topics. The ECTP Award for Lifetime Achievements, as well as the ECTP-NETZSCH Young Scientist Award will be also presented during the event.

The objective of the conference is to provide a forum for academic and industrial researchers to meet and exchange valuable experiences in the field of thermophysical properties of a wide variety of systems covering fluids and solids.

This year, the conference will bring together more than 400 engineers and researchers from 52 countries including European and non European:

Afghanistan, Andorra, Australia, Austria, Azerbaijan, Belarus, Belgium, Brazil. Bulgaria, Canada, P.R. China, Colombia, Czech Republic, Denmark, Egypt, Estonia, Ethiopia, France, Germany, Greece, Guinea-Bissau, Hungary, India, Iran, Ireland, Italy, Japan, Korea North, Korea South, Kosovo, Mexico, Netherlands, New Zealand, Poland, Portugal, Qatar, Romania, Russian Federation, Saint Vincent & the Grenadines, Serbia, Slovakia, Spain, Sweden, Switzerland, Taiwan, Tajikistan, Tunisia, Turkey, Ukraine, United Kingdom, United States and Venezuela.

Publication

Following the conference, authors of all papers are encouraged to submit their contribution for publication in special proceeding issues of the following mainstream journals:

- High Temperatures - High Pressures
- International Journal of Thermophysics
- Journal of Chemical and Engineering Data

It is up to the authors, to choose in which of the journals they want to submit their contribution. However, in order to have coherent and consistent special issues, the Organizing Committee will advise the authors of some specific sessions to submit preferably to one or the other journal with respect to the upcoming program.

When sending your manuscript to a journal please mention that it has been presented at ECTP2011, as agreed with the respective journal editors.

The manuscript will undergo the normal peer review and this process is quite separate from presenting your paper at ECTP. It is the author's responsibility to submit his or her manuscript directly to the journal and this can be done as soon as possible after the conference and no later than 15th October 2011. In submitting your manuscript please ensure that:

- the subject matter is within the scope of the respective journal;
- the manuscript contains a sufficient amount of new (unpublished) results.

Make sure to comply with the style of the journal to which you submit your manuscript. The guide for authors for the respective journals is obtainable from the following websites:

- ❖ High Temperatures - High Pressures
  http://www.oldcitypublishing.com/HTHP/HTHP.html
- ❖ International Journal of Thermophysics
  http://www.springer.com/materials/journal/10765
- ❖ Journal of Chemical and Engineering Data
  http://pubs.acs.org/journal/jceaax

Transportation

❖ To Thessaloniki

The city of Thessaloniki is easily accessible by air with many daily direct flights from all European cities (or so they tell us...). The airport is located about 15 km south east of the city center and there is a regular bus connection to the city (Line 78 - "Airport - KTEL") departing every hour and lasting 30 min during peak hours. There are also available many taxis with an average cost of € 15-20 and route duration of about 20 min.

❖ To "N. Germanos" Conference Center (from the center)

The conference center in HELEXPO is located at the east side of the city center. It's only a 25 min walk from the center (Aristotle square - see Map in Section 5), thus walking is to be preferred. There are two main entrances to HELEXPO area (see Map in Section 5), and cars or taxis are allowed inside the area.

- Transportation by bus

Gate 1: From the city center and getting off at the stop "ACHEPA." (on Egnatia street)

Line 2 - "A.S. IKEA - N.S. Stathmos" (bus direction to A.S. IKEA)
Line 7 - "Ag.Ioannis-Panepistimio" (bus direction to Panepistimio)
Line 10 - "Harilaou - N.S. Stathmos" (bus direction to Harilaou)
Line 14 - "Ano Toumpa - N.S. Stathmos" (Bus direction to Ano Toumpa)
Line 31 - "Voulgari - KTEL" (bus direction to Voulgari)
Line 58 - "Venizelou-Panorama-D/SI-Choriati" (bus direction to Panorama)

Gate 2: From the city center and getting off at the stop "Mousio" (on Leoforos Stratou street)

Line 11 - "Pilea - N.S. Stathmos" (bus direction to Pilea)
Line 12 - "Kato Toumpa - KTEL" (bus direction to Kato Toumpa)
Line 39 - "Kifisia - Dikastiria" (bus direction to Kifisia)

❖ To the Gala Dinner (Porto Palace Hotel)

Shuttle buses from the conference center to the Porto Palace Hotel, for the Gala dinner, will be provided. For participants who want to go by themselves they can either take a taxi (cost € 5 - 7) or a city bus from the city center (Line 31 - "Voulgari - KTEL" with bus direction to KTEL) and get off at the bus station "Sfagia".

General advice:

- Taxis: They are not the friendliest of people, (but that is the case everywhere...) they do stop if you raise your hand. They are painted blue-white, and they do take another passenger also if he goes in the same direction (not legal, but they do it..)
- Walking is always nice, especially in the city or by the seaside. The city is generally safe (much safer than most European cities..). However, don't walk by yourself in dark small streets at 4 in the morning, please..

The City of Thessaloniki

Thessaloniki is the second largest city of Greece, with about 1,000,000 inhabitants. Thessaloniki, a city founded by Cassander, incorporates religions, customs and traditions in its culture. Conquered or conqueror, it has been for centuries a magnet for those who prized it for its location, its links with the sea and the routes which joined it, as they still do, to other worlds, weaving the wool of its multi-cultural past. Pointers to this succession of cultures are the finds of the Macedonian tombs, the structures of the palace complex of the Emperor Galerius on the Via Egnatia, the skillfully-wrought mosaics and wall-paintings of the Byzantine churches, the majesty of the fortifications, the alleys and houses of the Old Town, the Ottoman bath-houses and mosques, the imposing public buildings and the Neo-Classical mansions. Traces of antiquity, Hellenistic finds, Roman remains, Byzantine and Ottoman monuments, modern architecture: all together features of a city at once outstanding and important.

The first recognized settlements which grew up on the shores of the Thermaic Gulf were Neolithic, and these form the pre-history of Thessaloniki, the city which took the name of the sister of Alexander the Great. Over the long centuries of its history, today's capital of Northern Greece has been distinguished as a foundation stone of the Hellenistic world as a seat of the Roman empire, as the twin-capital of Byzantium, as the largest urban centre in the Ottoman empire after Constantinople, and as the metropolitan centre of the Balkans from the Middle Ages down to modern times.

Try to see as much as you can, grasp its rhythm, its feeling... On Tuesday morning we will help you, see page15.

Map of the city

The Conference will take place in the “N. Germanos” Conference Center in HELEXPO. The Gala Dinner will be held at the roof garden of Porto Palace Hotel.

Guidelines

The "N. Germanos" Conference Center in HELEXPO (see Map page 8), is composed of two floors, where on:

- Floor 1: will be the Secretariat, and the Poster Sessions, while coffee and food will be served.
- Floor 2: will be the four Lecture theaters and the Exhibitors stands.

❖ Oral Presentations

- Plenary Lectures will be 40 minutes in length.
- Invited Lectures as well as all other presentations will be 20 minutes in length: 15 minutes for presentation and 5 minutes for follow-up questions and discussion.

❖ Posters

Poster boards (vertical 95x135 cm) are available for mounting the posters. Only one poster will be assigned per board side. Authors may use the complete surface if they wish. Posters may be affixed to the boards by adhesive tape provided by the conference organizers. Each board will be marked with an ID number. Please check the program for the ID number of your poster.

Three poster sessions are scheduled, one on Monday, one on Tuesday, and one on Wednesday. Posters can be placed before 11:00, 13:00 and 11:00 respectively, and remain in place for the whole day.

❖ Exhibitors

Exhibitors will be situated in Floor 2, outside the Lecture theaters.

❖ Registration

The on-site registration desk will open on Sunday, August 28th, from 17:00-20:00 during the Welcome Reception. For the rest of the week it will remain open from 8:30 to 18:00.

❖ WiFi / Internet

The center is equipped with free WiFi. Username and password can be obtained from the Secretariat. Please do not download very large files.

Awards

The Awards Ceremony will be held on Wednesday August 31st, from 14:00 to 15:20. During the ceremony, recipients of both awards will give a lecture.

ECTP-NETZSCH Young Scientist Award recipient

- **Dr Robert Hellmann**
  Institute of Chemistry, University of Rostock, Germany
  "*Thermophysical properties of industrially relevant fluids and fluid mixtures from pure theory*"

ECTP Award for Lifetime Achievements recipient

- **Professor Sir William A. Wakeham**
  Chemical Engineering, Imperial College, United Kingdom
  "*Mis-management' of a lifetime in Thermophysics*"

Plenary Lectures

The conference will be highlighted with 3 plenary lectures:

- **Professor J.P. Martin Trustler**
  Imperial College, London, U.K.
  "*Thermophysical properties of mixtures containing CO_2 for applications in carbon storage and enhanced oil recovery*"

- **Dr. Antony R. H. Goodwin**
  Schlumberger Technology Corporation, Sugar Land, U.S.A.
  "*Thermophysical properties required for the hydrocarbon economy*"

- **Dr. Ulf Hammerschmidt**
  Physikalisch-Technische Bundesanstalt, Braunschweig, Germany
  "*A True Transient-Technique Tale*"

Invited Lectures

The conference will proudly host 14 invited lectures:

- **Dr. Tetsuya Baba**
  National Metrology Institute of Japan, Tsukuba, Japan
  "*Thermophysical properties of thin films and boundary thermal resistances - Measurements by ultra fast laser flash methods and development of their database*"

- **Professor Jean-Luc Daridon**
  University of Pau, Pau, France
  "*Application of Quartz Crystal Resonators for measuring thermophysical properties in fluids*"

- **Dr. Jean-Remy Filtz**
  National Metrology and Testing Institute (LNE), Paris, France
  "*Thermophysical properties of materials: How metrology can support industry and Society for a sustainable development*"

- **Dr. Dan Friend**
  National Institute of Standards and Technology, Boulder, U.S.A.
  "*Thermophysical properties on demand: Determining measurement priorities and addressing needs*"

- **Dr. Peter Gaal**
  Anter Corporation, Pittsburgh, U.S.A.
  "*High Sensitivity Multi - Specimen Device for Rapid Measurement of Linear Thermal Expansion"*

- **Professor Andreas Heintz**
  University of Rostock, Rostock, Germany
  "*Thermophysical and structural properties of fluid systems containing ionic liquids*"

- **Professor Hyungsun Kim**
  Inha University, Incheon, Korea
  "*Thermal properties of frits needed for controlling interface structures of electronic devices*"

- **Professor Andreas Mandelis**
  University of Toronto, Toronto, Canada
  "*Photothermal Thermophysics: techniques for the measurement of thermophysical properties of matter*"

- **Professor Yuji Nagasaka**
  Keio University, Tokyo, Japan
  "*Nano/Micro thermophysical properties sensing engineering and its applications*"

- **Professor Akira Nagashima**
  Keio University, Hiyoshi, Yokohama, Japan
  "*Database evolution to meet IT revolution*"

- **Professor Gernot Pottlacher**
  Technical University of Graz, Graz, Austria
  "*22 pure elements - 30 years of pulse heating experience*"

- **Professor Dimitris Tassios**
  National Technical University of Athens, Athens, Greece
  "*Thermodynamic modelling and applications: The Cubic plus Association (CPA) and the Universal Mixing Rule (UMR)*"

- **Professor Velisa Vesovic**
  Imperial College London, London, U.K.
  "*Thermomagnetic and viscomagnetic effects in a dilute gas*"

- **Professor Jiangtao Wu**
  Jiaotong University, Xi'an, P.R. China
  "*Transport properties research at Xi'an Jiaotong University*"

Exhibitors

We are grateful for the contribution of the following three companies:

Anter is a leading manufacturer of thermophysical properties measuring equipment and a provider of contract testing services for over 35 years. Our products include thermal conductivity measuring instruments, laser flash systems for thermal diffusivity, specific heat capacity and thermal conductivity measurement, and dilatometers for thermal expansion (CTE) measurement and sintering studies. A wide range of materials, including polymers, ceramics, metals, composites, carbon/graphite, insulation, building materials, powders, pastes, liquids, and films can be tested over a temperature range of -170 to 2800 °C under various atmospheres. We provide sales and support for our products worldwide through local representatives and branch offices. Our company is ISO9001:2008 certified. Please visit our website at *www.anter.com* for further information about our products, including technical notes and method descriptions.

Linseis Messgeräte GmbH was founded in 1957 through Dr. Max Linseis. We are a world leading manufacturer of the following instruments:

- **DSC** Differential Scanning Calorimeter,
- **STA** Simultaneous Thermal Analysis Instruments
- **DTA/HDSC** High Temperature Instruments , Dilatometers,
- **TMA** Thermomechanical Analysis
- **EGA** Gas analysis / Couplings,
- **LFA** Thermal Diffusivity / Thermal Conductivity
- **SEB** Seebeck Effect Instruments.

The LINSEIS business unit of thermal analysis is involved in the complete range of thermo analytical equipment for R&D and quality control in sectors such as polymers, chemical industry, inorganic building materials as well as environmental analytics. In addition, Thermophysical properties of solids, liquids and smelts can be analyzed.

The NETZSCH Group is an owner-managed, internationally operating technology company headquartered in Germany. Three Business Units – Analyzing & Testing, Grinding & Dispersing, and Pumps & Systems – provide tailored solutions for highest-level needs.Over 2,300 employees at 130 sales and production centers in 23 countries across the globe guarantee that expert service is never far from our customers.

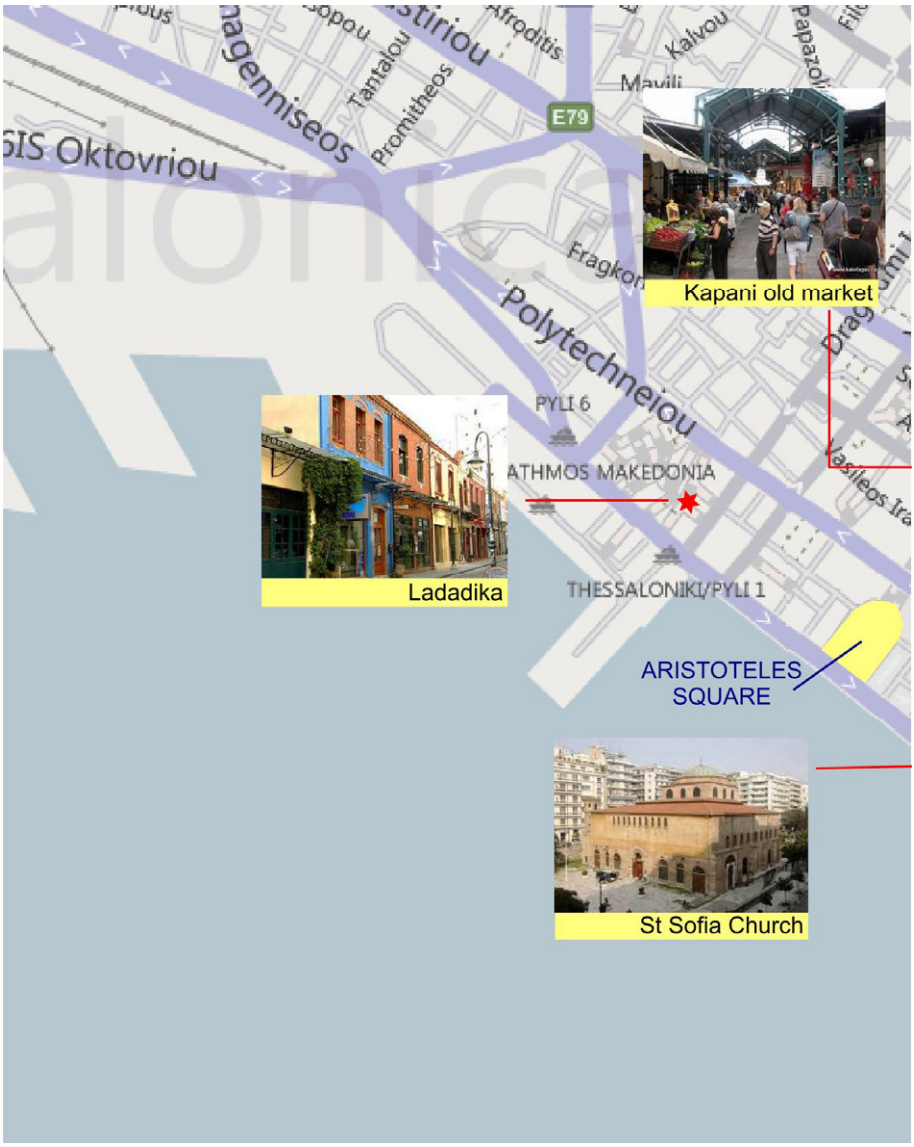
When it comes to Thermal Analysis, Adiabatic Reaction Calorimetry and the determination of Thermophysical Properties, NETZSCH Analyzing & Testing has it covered. Our 50 years of applications experience, broad state-of-the-art product line – covering a temperature range from -260°C to 2800°C – and comprehensive service offerings ensure that our solutions will not only meet your every requirement but also exceed your every expectation.

Tuesday morning social event

Tuesday morning is free to explore the city at your leisure. Student-guides (in yellow t-shirts) will be available (from 9.00 to 12.00) just in front of the following places in order to help you know the city better:

- **White Tower**.
  The White Tower is currently a museum of the history of the city, on the waterfront. It was used by the Ottomans as a notorious prison and scene of mass executions. It was substantially remodeled and its exterior was whitewashed after Greece gained control of the city in 1912. It has been adopted as the symbol of the city.
- **Archaeological Museum**.
  The museum was built in 1962, and in 1980 acquired a new wing, which houses part of the exhibits from the Vergina tombs. Its other wings house a collection of Archaic to Late Roman sculptures from Thessaloniki, illustrating the history of Thessaloniki from prehistoric times to Late Antiquity.
- **Arch of Galerius, Rotonda, and the Galerius palace ruins**.
  The 4th-century Roman Emperor Galerius commissioned the Arch and the Rotonda (also known as St. George Church) as elements of an imperial precinct linked to his Thessaloniki palace. These three monumental structures were connected by a road that ran through the arch, which rose above the major east-west road of the city.
- **St Demetrius Church**.
  The first church on the spot was constructed in the early 4th century AD, replacing a Roman bath. Repeatedly gutted by fires, the church eventually was reconstructed as a five-aisled basilica in 629–634. Beneath the church, there are catacombs which are certainly worth visiting. Leaving the church, walking towards the city center, you will see the old Roman market.
- **The Kapani old market**.
  The Kapani market since the Ottoman period, has been a very interesting open market. The sounds of cleavers chopping meat, the smell of meat, spices, herbs, seafood, and the shouts of store owners and hired hands barking the day's special, pointing what is best and cheapest.
- **St Sofia Church**.
  Is one of the oldest churches included as a World Heritage Site in the UNESCO list. The present structure was erected in the 8th century, based on the Hagia Sophia church in Constantinople (today, Istanbul, Turkey).
- **Jewish Museum and Ladadika**.
  Near the harbour, the area of Ladadika (olive oil shops) survived the 1917 city fire, to be renovated today to bars and tavernas. Close to the area is the Jewish Museum. The city was famous for its Jewish quarters, which was completely destroyed during the war.
- **Byzantine city walls** (usually referred to as "the Castles").
  Built during the byzantine time, used to extend to 7 km (3 km today), formed the fortification of the city all around it. Part of it was the White Tower. From the proposed location, one can have an excellent view of the city, and then just walk down to the center...

The places listed above are shown on the map on the following page. Please, keep in mind that the students are not professional guides, they are there to assist you.
Ask for more information at the Secretariat or the Yellow T-shirt Team.



An alternative solution is "Thessaloniki on The Go..."

This is a sightseeing bus (for those who are too lazy to walk...). It runs every hour on the hour starting from the White Tower. Its route lasts about an hour and covers White Tower, Museums, Galerius Palace, St Sofia church, Aristoteles square, Old city, Moni Vlatadon (church), Agios Pavlos, Rotonda, and returns to the White Tower.

You could also take this bus, come out at Moni Vlatadon, and from there just go down to the center, through the Old City. Should you decide on this walk through the Old City, the little church of Osio David is certainly a must!.
Bus fee is quoted as € 2.0.

Accompanying Persons program

o Sunday 28th

17:00 - 21:00: **WELCOME RECEPTION (HELEXPO)**

o Monday 29th

09:30 - 15:30: **VERGINA**

75 km from Thessaloniki, Vergina has enjoyed worldwide renown in the past few decades, due to the discovery there of the ancient city of Aigai, the ancient capital of the Macedonian kings, and its cemetery in 1977 by archaeologist M. Andronikos. Of particular note are the tombs of King Philip II (father of Alexander the Great), and this of a young prince, identified as Alexander IV.

INDICATIVE PROGRAM:

09:30 Departure from HELEXPO
10:30 Arrival at Vergina, visit to the royal tombs
12:30 Visit to the Palace ruins
13:00 Lunch in a nearby taverna
14:30 Departure
15:30 Return to HELEXPO

COST : 20-30 Euros (depending on the number of participants)
- cost includes only bus and entrance fees.

18:40 - 20:00: **GREEK NIGHT** (at HELEXPO, finger food and ...)

o Tuesday 30th

09:00 - 12:00: **Joining Conference Social program**.

13:00 - 14:00: Lunch at HELEXPO
Afternoon free, we suggest:

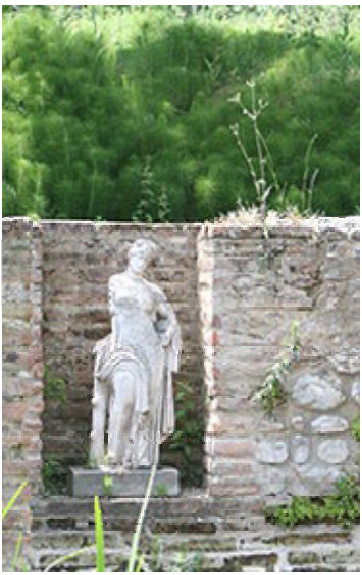
- you take a walk in the old city (take a taxi to the Moni Vlatadon church, enjoy the view and then just walk down to the city center) or
- just go shopping (Tuesdays, shops stay open until 8 pm and Thessaloniki is famous for the shopping experience it offers...).



The entrance to the royal tomb, and gold artifacts found inside.

o Wednesday 31st

09:00 - 16:00: **DION & PALAIOS PANTELEIMON**



90 km from Thessaloniki, Dion, situated at the foot of mount Olympus, is the site of an ancient Macedonian city, a large temple of Zeus, as well as of a series of temples dedicated to Demeter and Egyptian Isis. Alexander assembled his armies in Dion before embarking on his eastward campaign of conquest. In 2006, a 2,200 year old statue of Hera was found built into the walls of the city.

INDICATIVE PROGRAM:

09:00 Departure from HELEXPO
10:30 Arrival at Dion, visit to the archaeological site and museum
11:30 Departure for Palaios Panteleimon
12:00 Palaios Panteleimon, walk and lunch in a local taverna
14:30 Departure
16:00 Return to HELEXPO
COST : 20-30 Euros (depending on the number of participants)
- cost includes only bus and entrance fees.

19:15 - : GALA DINNER (at the roof garden of Porto Palace Hotel - busses depart from HELEXPO)

o Thursday 1st

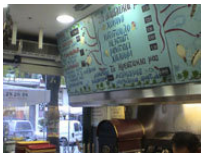
09:00 - 12:00: **FREE MORNING...**

The village of Palaios Panteleimon was abandoned in the beginning of the century as its inhabitants formed a new village next to the sea. The village was recently renovated following its previous style.

A bite in the city...

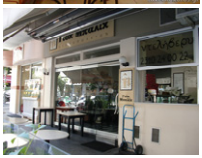
Thessaloniki being in the crossroads of east and west is famous for its food. Here is our personal choice, for everyone... I suggest you try anything that looks peculiar in the list, or ask us... we will gladly help! Go on, be brave!!! ha ha ha....

❖ Quick-bite places... (usually for young ones, cost <10 Euros)

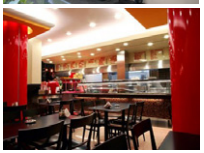


DERLICATESSEN yes with an R! (Kouskoura Str. 7)
open all-day, Derlicatessen is a must-try place for fast food right in the center of the town; different kinds of specialties for all kinds of tastes in a good price. Try “dikavalo”, a sandwich with two sticks of meat wrapped with special yogurt and garlic sauce.

ETSI (Nikiforou Foka Str. 2)
guaranteed to serve you one of the best meat or chicken sandwiches in town. If you find it hard to decide, choose between meat or chicken combined with an “anethiki” salad (translated as “anethical”, and so it is..)



YOK BALIK (Ethnikis Aminis Str. 34)
an alternative choice for special meat or chicken wraps. Regular customers choose “Fterwto” and “Mpouri theklas”, two of the most famous chicken wraps.

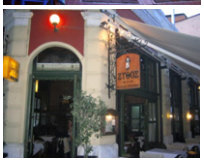


SPATA (Svolou Str. 34)
a classic choice for Greek fast-food lovers. Gyros is the Greek version of Kebab and one of the most popular food choices for all Greeks or anyone who visits Greece.

❖ Tavernas (local very picturesque, simple restaurants, cost <15 Euros)

You can not come to Greece and not eat in a taverna! Go to Athonos, and have fun, hear the rhythm of the people, listen to the sounds, feel the heat..

ATHONOS AREA TAVERNAS (or Vatikiotou str.)
the typical Greek environment packed in one place. Athonos is an area a bit higher than Aristoteles square, home of Greek tavernas, traditional dishes and live music. It is worthwhile even to walk in the area..



ZYTHOS (Katouni str. 5)
one of the oldest restaurants for traditional food and a wide variety of beers located in the main square of the old, commercial area, “Ladadika”.

NTO RE (Tsirogianni str. 7)
branch of “Zythos” restaurant, located opposite the White Tower, one of the main attractions of Thessaloniki. Must try: “soutzoukakia” (meat balls) and the “anithosalata” (anise salad).

DIAGONIOS (Stratigou Kallari str. 13)
large, delicious dishes guaranteed to make you full. A full menu consists of a Greek salad, as a starter, meatballs or souvlaki (stick of meat) and a dessert, necessary for digestion.

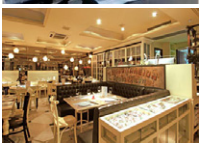
OUZOU MELATHRON (Karipi str. 21)
a classic Greek restaurant with special dishes, hard to find anywhere else. Friendly staff, typical Greek atmosphere and delicious food, all found in one place.

I ORAIA ELLAS (Konstantinou Paleologou str. 9)
located near the Arch of Galerios, another famous tourist attraction of the city; cozy environment with traditional tastes, you should combine it with a visit to the Arch of Galerios and Rotonda.

❖ Restaurants (try the Greek style, cost >20 Euros)

KITCHEN BAR (in the harbour, facing the city)
located at the harbour in a newly renovated warehouse, thus offering an amazing view of the city. The restaurant is famous for its wide variety of high-quality choices in the menu and its refreshing cocktails for the afternoon. It is the less expensive in the list...

ELECTRA PALACE HOTEL ROOF GARDEN (Aristotelous square 9)
one of the most luxurious hotels in the Aristotle’s square, famous for its roof garden, its gourmet dishes and the mind-blowing view of the beautiful sunset. That is the one you SHOULD try, if that is what you are searching for....



AGIOLI (Aristotelous square 9)
another high-quality restaurant in the Aristotle’s square. Enjoy your special dish with a choice of wine recommended by the restaurant’s staff.

EXCELSIOR RESTAURANT BAR (Komninon 1 & Mitropleos 23)
expresses the new generation of Bistros. Offers creative Greek cuisine in a casual, comfortable and contemporary setting with the sparkle of one of the best cocktail Bars in the city. A wide variety of pasta, risotto, meat, seafood and fish dishes, as well as the most tempting desserts.

Scientific Program

SUNDAY, AUGUST 28th 2011	
17:00	**Open Registration & Ice Breaking Reception**

MONDAY, AUGUST 29th 2011				
	Hall A	**Hall B**	**Hall C**	**Hall D**
08:40	**Opening Ceremony** (Hall A)			
09:00	**Plenary Lectures** (Hall A)			
11:00	Coffee Break - Poster Session 1			
Chair	E. Voutsas	W.A. Wakeham	U. Hammerschmidt	J.-L. Daridon
11:20	**Special Session** Phase Equilibria 1	Measuring Techniques 1	Transient Techniques 1	Volumetric Properties
13:00	Lunch - Poster Session 1			
Chair	D. Tassios	A. Nagashima	D. Gaal	L. Kubicar
14:00	Phase Equilibria 2	Measuring Techniques 2	Transient Techniques 2	Nanocomposites 1
15:40	Coffee Break - Poster Session 1			
Chair	A. Heintz	Y. Taguchi	J. Wu	R. Ohmura
16:40	Phase Equilibria 3	Measuring Techniques 3	Viscosity 1	Nanocomposites 2
18:40	**Greek Night**			

TUESDAY, AUGUST 30th 2011				
	Hall A	**Hall B**	**Hall C**	**Hall D**
08:40	**Social Event**			
13:00	Light Lunch - Poster Session 2			
Chair	A. Mandelis	F. Righini	C.M.B.P. Oliveira	J. Fernandez
14:00	**Special Session** Photothermal & Photoacoustic Thermophysics 1	Radiation	Viscosity 2	Engineering Applications 1
15:40	Coffee Break - Poster Session 2			
Chair	A. Mandelis	N. Milosevic	A. Fröba	P. Gaal
16:40	**Special Session** Photothermal & Photoacoustic Thermophysics 2	High Temperatures	Viscosity 3	Engineering Applications 2

WEDNESDAY, AUGUST 31st 2011				
	Hall A	**Hall B**	**Hall C**	**Hall D**
Chair	W.A. Wakeham	C.A. Nieto de Castro	R. Li Voti	G.Pottlacher
09:00	**Special Session** Theory & Modelling 1	Mass Difussion & Thermo-Difussion	Photothermal Techniques 1	Thermal Properties 1
11:00	Coffee Break - Poster Session 3			
Chair	V. Vesovic	K.D. Antoniadis	M. Sigrist	T. Baba
11:20	Theory & Modelling 2	Critical Properties	Photothermal Techniques 2	Thermal Properties 2
13:00	Lunch - Poster Session 3			
Chair	M.J. Assael, F. Righini, J. Blumm			
14:00	**Awards Ceremony** (Hall A)			
15:20	**Announcement of Related Conferences** (Hall A)			
15:40	Coffee Break - Poster Session 3			
Chair	R. Sadus	H. Kim	D. Friend	Y. Nagasaka
16:40	Theory & Modelling 3	Calorimetry	Standards	Thermal Properties 3
18:40	**GALA DINNER** (Departure from HELEXPO at 19:00)			

THURSDAY, SEPTEMBER 1st 2011				
	Hall A	**Hall B**	**Hall C**	**Hall D**
Chair	J.P.M. Trusler	L. Santos	H.-P. Ebert	J.-F. Sacadura
09:00	Theory & Modelling 4	Ionic Liquids	Thermal Insulations & Dynamic Techniques	PCM Materials
11:00	Coffee Break			
Chair	B. Rathke	M. Haynes	I. Egry	A.R.H. Goodwin
11:20	Interfacial Properties	Lubricants & Refrigerants	Alloys	Speed of Sound
12:40	**Closing Ceremony** (Hall A)			
13:00	Light Lunch			

MONDAY, AUGUST 29TH 2011 09:00 – 11:00

PLENARY LECTURES

Hall A

Chair: M.J. Assael

09:00 **Thermophysical properties of mixtures containing CO_2 for applications in carbon storage and enhanced oil recovery**
J.P.M. Trusler
Qatar Carbonates and Carbon Storage Research Centre (QCCSRC), Qatar, Department of Chemical Engineering, Imperial College, London, UK

09:40 **Thermophysical properties required for the hydrocarbon economy**
A.R.H. Goodwin
Schlumberger Technology Corporation, Sugar Land, U.S.A.

10:20 **A true transient-technique tale**
U. Hammerschmidt
Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

MONDAY, AUGUST 29TH 2011 11:20 – 13:00

SPECIAL SESSION
PHASE EQUILIBRIA 1

Hall A

Chair: E. Voutsas

11:20 **Thermodynamic modeling and applications to phase equilibrium calculations with the Cubic Plus Association (CPA) and the Universal Mixing Rule (UMR) models**
D. Tassios, **Invited Speaker**
National Technical University of Athens, Greece

11:40 **Chemicals in Gas Processing (CHIGP): An industrial project for the thermodynamics of complex petroleum fluids and chemicals**
G. Kontogeorgis, I. Tsivintzelis, M. Michelsen and E. Stenby
Center for Energy Resources Engineering (CERE), Department of Chemical and Biochemical Engineering, Technical University of Denmark, Denmark

12:00 **Activity coefficient prediction of hydrofluorocarbon + ionic liquid systems by UNIFAC model for working-fluids selection of compression and absorption hybrid cycles**
L. Dong, X. Wu and D. Zheng
Beijing University of Chemical Technology, P.R. China

12:20 **Measurements and modeling of vapor liquid equilibria in binary systems of methane + {n-C5, n-C6, or BTEX compounds} at cryogenic temperatures and high pressures**
E. May[1], M. Kandil[1], B. Graham[1], K. Marsh[1] and S. Huang[2]
[1]Centre for Energy, The University of Western Australia, Crawley, Australia, [2]Chevron Energy Technology Company, Houston, TX, USA

12:40 **Measurements and modeling of the solubility of natural phenolic compounds in organic and supercritical solvents**
A. Queimada, J. Baldaia, F. Mota and E. Macedo
LSRE/LCM -Laboratory of Separation and Reaction Engineering, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal

MONDAY, AUGUST 29TH 2011 11:20 – 13:00

MEASURING TECHNIQUES 1

Hall B

Chair: W.A. Wakeham

11:20 **A new guarded heat flow apparatus for thermal characterization of thermoelectric modules up to 500°C**
F. Hemberger, J. Wachtel, A. Göbel and H. Ebert
Bavarian Center for Applied Energy Research (ZAE Bayern)

11:40 **Guarded hot plate apparatus for extreme conditions: temperatures up to 1000°C and pressures from 10^{-8} to 10^{+2} bar**
U. Gross, K. Raed
TU Bergakademie Freiberg, Institute of Thermal Engineering, Germany

12:00 **Peltier element driven AC calorimetry**
J. Leys, C. Glorieux and J. Thoen
Laboratorium voor Akoestiek en Termische Fysica, Departement Natuurkunde en Sterrenkunde, Katholieke Universiteit Leuven, Leuven, Belgium

12:20 **Thermal diffusivity of non-flat plates using the flash method**
A. Salazar, R. Fuente, E. Apiñaniz and A. Mendioroz
Fisika Aplikatua I Saila, Euskal Herriko Unibertsitatea, Spain

12:40 **Experimental verification to obtain inherent thermal diffusivity by laser flash method**
M. Akoshima[1], B. Hay[2], M. Neda[1] and M. Grelard[2]
[1]National Metrology Institute of Japan (NMIJ), AIST, Japan, [2]Laboratoire National de Métrologie et d'Essais (LNE), France

TRANSIENT TECHNIQUES 1

Hall C

Chair: U. Hammerschmidt

11:20 **22 pure elements - 30 years of pulse heating experience**
G. Pottlacher, **Invited Speaker**
Institute of Experimental Physics, Graz University of Technology, Austria

11:40 **Virtual experiments by pulse heating techniques: tubular tungsten specimens**
G. Bussolino[1], F. Righini[2]
[1]CNR Istituto Nazionale Ottica, Pisa, Italy, [2]INRIM Istituto Nazionale Ricerca Metrologica,Torino, Italy

12:00 **Measuring regime and the accuracy of the transient hot-ball method**
Ľ. Kubičár[1], U. Hammerschmidt[2], D. Fidríková[1], P. Dieška[3] and V. Vretenár[1]
[1]Institute of Physics SAS, Bratislava, Slovakia, [2]Physikalisch-Technische Bundesanstalt, Braunschweig, Germany, [3]Faculty of Electrical Engineering and Information Technology STU, Bratislava, Slovakia

12:20 **Thermal diffusivity measurements of dry and moist sandstone using the transient hot-bridge sensor and the xenon-flash method**
F. Mzali[1], M. Abid[2], F. Albouchi[1], U. Hammerschmidt[2] and V. Meier[2]
[1]National Engineering School (ENIM), University of Monastir, Monastir, Tunisia, [2]Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany

12:40 **Experimental data for carbides (ZrC, TaC) in the vicinity of melting region under fast electrical pulse heating**
S. Onufriev, A. Savvatimskiy and V. Yanchuk
Joint Institute for High Temperatures Russian Academy of Sciences, Moscow, Russia

MONDAY, AUGUST 29TH 2011 11:20 – 13:00

VOLUMETRIC PROPERTIES

Hall D

Chair: J.-L. Daridon

11:20 **Wide-ranging densimetry of the compressed-liquid binary system ethanol + 2,2,4-trimethylpentane**
S. Outcalt, A. Laesecke and E. Lemmon
National Institute of Standards and Technology, Materials Measurement Laboratory, Thermophysical Properties Division, USA

11:40 **A three-parameter corresponding states model for non-polar fluids based on reference equations of state**
J. Estela-Uribe
Universidad Javeriana Cali, Colombia

12:00 **Temperature dependence of partial molal volume at infinite dilution for two macrocyclic aminals in aqueous solution between 275.15 and 278.15K**
L. Blanco, J. Clavijo
Departamento de Química, Universidad Nacional de Colombia, Bogotá, Colombia

12:20 **Equation of state of dense fluids in the high pressure - high temperature region**
V. Bardik[1], N. Malomuzh[2] and K. Shakun[3]
[1]Kiev Taras Shevchenko National University, Ukraine, [2]Odessa National University, Ukraine, [3]Odessa National Maritime Academy, Ukraine

12:40 **Measurements and molecular interactions for N,N-dimethylformamide with ionic liquid mixed solvents**
P. Madhusudhana Reddy, P. Venkatesu
University of Delhi, Delhi, India

MONDAY, AUGUST 29TH 2011 14:00 – 15:40

PHASE EQUILIBRIA 2

Hall A

Chair: D. Tassios

14:00 **Correspondence of the critical parameters and zeno-line in thermodynamics**
V. Vorob'ev, E. Apfelbaum
Joiny Institute for High Temperatures of Russian Academy of Sciences, Russia

14:20 **Phase equilibrium for structure H hydrate formed in the CO_2 - 2, 2 dimethylbutane - H_2O system**
R. Shen, K. Tezuka and R. Ohmura
Department of Mechanical Engineering, Keio University, Tokyo, Japan

14:40 **Thermophysical properties of the system N-heptane-water**
M. Veronika, K. Ibragimkhan, N. Denis and I. Nabiyulla
Institute of Physics Dagestan Scientific Center Russian Academy of Sciences, Russian

15:00 **Measurements of phase densities and compositions for the methane-ethane-propane system at cryogenic temperatures and high pressures for improved process design and simulation**
J. Guo[1], M. Kandil[1], B. Graham[1], E. May[1], K. Marsh[1] and S. Huang[2]
[1]University of Western Australia, Australia [2]Chevron Energy Technology Company

MEASURING TECHNIQUES 2

Hall B

Chair: A. Nagashima

14:00 **A fast measuring method for thermal expansion of metals using a feedback-controlled pulse heating technique**
H. Watanabe
National Institute of Advanced Industrial Science and Technology (AIST), Japan

14:20 **Lorentz force sigmometry: a new method for thermophysical property measurement in high temperature melts**
A. Thess, Y. Kolesnikov and C. Heinicke
Ilmenau University of Technology, Germany

14:40 **Characterisation of glass transition temperature of polymeric materials using an AFM Scanning Thermal Microscopy (SThM) probe technique**
A. Dawson, M. Rides, A. Cuenat and L. Winkless
National Physical Laboratory, U.K.

15:00 **Development of fluorescence near-field optics thermal nanoscopy using photonic crystal fiber for high sensitivity temperature measurement**
T. Fujii, Y. Taguchi, T. Saiki and Y. Nagasaka
Keio University, Tokyo, Japan

15:20 **Thermogravitational microcolumn for thermodiffusion study of biological fluids**
A. Martin[1], M. Klein[2], M. Bou-Ali[1] and S. Wiegand[2]
[1]Mondragon Goi Eskola Politeknikoa, Spain, [2]Institut für Festkörperforschung, Forschungszentrum Jülich, Germany

MONDAY, AUGUST 29TH 2011 14:00 – 15:40

TRANSIENT TECHNIQUES 2

Hall C

Chair: D. Gaal

14:00 **A new laser flash apparatus for thermal diffusivity and specific heat capacity measurements down to 30 K**
A. Göbel[1], F. Hemberger[1], H. Ebert[1], M. Jansen[2] and J. Wilfert[2]
[1]Bavarian Center for Applied Energy Research (ZAE Bayern), Germany, [2]Max Planck Institute for Solid State Research, Germany

14:20 **Thermophysical properties characterization of resins during curing using the flash method**
J. Blumm, A. Lindemann and S. Schmoelzer
Netzsch-Gerätebau GmbH, Selb, Germany

14:40 **Estimation of parameters of vapor diffusion during dehydroxylation in a cylindrical ceramic sample**
J. Ondruska[1], A. Trník[1,2], I. Medved[1,2] and L. Vozar[1]
[1]Constantine the Philosopher University in Nitra, Slovakia, [2]Czech Technical University, Czech republic

15:00 **Thin film thermal conductivity measurement on semi-conducting polymer materials using the 3-omega technique**
S. Rausch, D. Rauh, S. Vidi and H. Ebert
Bavarian Centre for Applied Energy Research (ZAE Bayern), Germany

15:20 **Thermophysical properties of solid-phase paladium in a wide temperature range**
N. Milosevic, M. Babic
Institute of Nuclear Sciences VINCHA, Belgrade, Serbia

NANOCOMPOSITES 1

Hall D

Chair: L. Kubicar

14:00 **Nano/Micro thermophysical properties sensing engineering and its applications**
Y. Nagasaka, **Invited Speaker**
Keio University, Hiyoshi, Yokohama, Japan

14:20 **Synthesis of the copper and bronze nanopowders and materials on their basis**
B. Gelchinski[1,3], E. Dyuldina[2] and L. Zolotukhina[3]
[1]Institute of Metallurgy of Ural Branch of the Russian Academy of Science, Russia, [2]Magnitogorsk State Technical Unoversity, Russia, [3]Fine Metal Powders Company, Russia

14:40 **Evaluation of thermal conductivity of single walled carbon nanotube composite film (SWNT-PVA samples with different length, density and alignment)**
T. Sato[1], Y. Taguchi[2] and Y. Nagasaka[2]
[1]School of Integrated Design Engineering, Keio University, Tokyo, Japan [2]Department of System Design Engineering, Keio University, Tokyo, Japan

15:00 **Thermal conductivity of three-component composites of core-shell particles with nanostructured shell layer**
S. Kim[1], S. Mun[1], H. Choi[2] and K. Lee[2]
[1]Center for High-Temperature Energy-Materials, Korea Institute of Science and Technology, Sungbuk-Gu, Seoul, Korea, [2]R&D Center of Donghyun Electronics Co., Ltd., Cheongbuk, Pyeongtaek-Si, Korea

15:20 **Thermal conductivity of carbon nanotubes with point defects**
W. Li, Y. Feng and X. Zhang
University of Science and Technology Beijing, Beijing, P.R. China

MONDAY, AUGUST 29TH 2011 16:40 – 18:40

PHASE EQUILIBRIA 3

Hall A

Chair: A.Heintz

16:40 **Volatility of some [CnCnim][NTf2] ionic liquids**
M. Rocha[1], B. Schroder[2], J. Coutinho[2] and L. Santos[1]
[1]Centro de Investigacao em Quimica, Faculdade de Ciencias da Universidade do Porto, Porto, Portugal, [2]CICECO, Departamento de Quimica, Universidade de Aveiro, Aveiro, Portugal

17:00 **Thermodynamics of metalorganic and elementoganic compounds: retrospective and perspective ideas**
A. Baev
International Sacharov Ecological University, Belarus

17:20 **Phase diagrams and thermodynamic properties of the KCl, NaCl, KNO_2 and $NaNO_2$ system**
J. Ding[1], Q. Peng[1], X. Wei[2], J. Yang[2] and X. Yang[2,3]
[1]School of Engineering, Sun Yat-sen University, [2]School of Chemistry and Chemical Engineering, South China University of Technology, [3]Dongguan University of Technology

17:40 **High temperature vapour-liquid equilibrium measurements with a flow apparatus**
A. Cristino[1], A. Palavra[2] and C. Nieto de Castro[1]
[1]Departamento de Química e Bioquímica and Centro de Ciências Moleculares e Materiais, Faculdade de Ciências da Universidade de Lisboa, Portugal, [2]Centro de Química Estrutural, Instituto Superior Técnico, Universidade Técnica de Lisboa, Portugal

18:00 **The calculations of nanodrops thermodynamic properties by molecular dynamics method**
G. Kharlamov[1], A. Onischuk[2], S. Vosel[2,3] and P. Purtov[2]
[1]Novosibirsk State Technical University, Russia, [2]Institute of Chemical Kinetics and Combustion of RAS, Russia, [3]Institute of Geology and Mineralogy of RAS, Russia

MEASURING TECHNIQUES 3

Hall B

Chair: Y. Taguchi

16:40 **Thermophysical properties on demand: determining measurement priorities and addressing needs**
D. Friend, **Invited Speaker**
National Institute of Standards and Technology, Boulder, CO USA

17:00 **Improving thermophysical properties measurements of advanced materials used in future gas turbines**
B. Hay[1], K. Anhalt [2], L. Chapman[3] and J. Hameury[1]
[1]Laboratoire National de Metrologie et Essais (LNE), France , [2]Physikalisch-Technische Bundesanstalt (PTB), Germany, [3]National Physical Laboratory (NPL), United Kingdom

17:20 **Determination of local thermal conductivity by the use of thermal nanoprobes**
J. Bodzenta, J. Juszczyk, A. Kaźmierczak-Bałata, J. Mazur and M. Wojtol
Silesian University of Technology, Gliwice, Poland

17:40 **Application of hot-ball method for investigation of water diffusion in different porous stones**
D. Fidríková, Ľ. Kubičár
Slovak Academy of Sciences, Institute of Physics, Slovakia

18:00 **Viscosity and density measurements of isobutane in wide ranges of temperature and pressure and in the near critical region using a vibrating-wire viscometer and a single-sinker densimeter**
S. Herrmann[1,2], E. Vogel[1] and E. Hassel[2]
[1]Institute of Chemistry, University of Rostock, Rostock, Germany, [2]Department of Technical Thermodynamics, University of Rostock, Rostock, Germany

18:20 **Non-content spectral emissivity measurement using an electrostatic levitation method**
Y. Ito[1], T. Ishikawa[2], J. Okada[2] and T. Masaki[1]
[1]Shibaura Institute of Technology, Japan, [2]Japan Aerospace Exploration Agency, Japan

MONDAY, AUGUST 29TH 2011 16:40 – 18:40

VISCOSITY 1

Hall C

Chair: J.Wu

16:40 **The viscosity of sulfur hexafluoride**
S. Quiñones-Cisneros[1], M. Huber[2] and U. Deiters[3]
[1]Universidad Nacional Autónoma de México (UNAM), Mexico, [2]National Institute of Standards and Technology (NIST), Boulder CO, USA, [3]University of Cologne, Germany

17:00 **Elementary considerations on the viscosity of Fe-C melts**
F. Miani, D. Ceotto and P. Biasin
Univ. of Udine, DICA, Via delle Scienze, Italy

17:20 **Using a high temperature, high pressure Couette viscometer to assess KrytoxB® oils as a deepwater HTHP viscosity standard**
R. Enick[1], D. Tapriyal[2], J. Jain[2], W. Burgess[3], B. Morreale[3], Y. Soong[3], A. Laesecke[4], V. Krukonis[5] and M. McHugh[6]
[1]NETL RUA Faculty Researcher and Dept. of Chemical and Petroleum Eng., Univ. of Pittsburgh, USA [2]URS, USA [3]US DOE NETL, USA [4]NIST, Thermophysical Properties Division, USA [5]Phasex, USA [6]Dept. of Chemical Eng., Virginia Commonwealth University, USA

17:40 **High pressure viscosity measurements of 1,1,1,2-tetrafluoroethane**
A. Laesecke[1], S. Bair[2]
[1]National Institute of Standards and Technology, Boulder, Colorado, USA, [2]Center for High-Pressure Rheology, Georgia Institute of Technology, Atlanta, Georgia, USA

18:00 **Prediction of gaseous viscosity of CO_2/hydrocarbons mixtures**
X. Wang, Y. Gao, J. Wu and Z. Liu
Xi'an Jiaotong University, P.R. China

18:20 **Shear viscosity and time correlation functions of two-dimensional strongly coupled yukawa liquids**
A. Shahzad, M. He
State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an, P.R. China

NANOCOMPOSITES 2

Hall D

Chair: R. Ohmura

16:40 **Thermal conductivity of copper nanowires filled mesoporous silica**
C. Huang[1], Y. Feng[1], X. Zhang[1], D. Zhang[1] and G. Wang[2]
[1]School of Mechanical Engineering, University of Science and Technology Beijing, [2]School of Materials Science and Engineering, University of Science and Technology Beijing, P.R. China

17:00 **Graphene based nanofluids**
H. Xie, W. Yu
Shanghai Second Polytechnic University, P.R. China

17:20 **Thermal resistance of Au/sapphire interfaces with different micro-structures**
Y. Xu, R. Kato and M. Goto
National Institute for Materials Science, Japan

17:40 **Thermal properties of volatile Sc(III) complexes with beta-diketonates - viable precursors for MOCVD processes**
K. Zherikova, L. Zelenina and N. Morozova
Nikolaev Institute of inorganic Chemistry, SB RAS, Russia

18:00 **Dynamic heat capacity in Perovskite Manganites**
Y. Jeong
Department of Physics, Pohang University of Science and Technology, Pohang, Korea

18:20 **Excess pressure of the phonon gas in nanocrystals**
A. Karasevskii
Institute for Metal Physics, Kiev, Ukraine

POSTER SESSION 1

1st floor

Ionic Liquids

P1.1 **Density of 1-butyl-3-methylpyridinium tetrafluoroborate at high temperatures and pressures**
J. Safarov[1,2], I. Kul[3], W. El-Awady[4], A. Shahverdiyev[2] and E. Hassel[1]
[1]University of Rostock, Germany, [2]Azerbaijan Technical University, Azerbaijan, [3]Widener University, USA, [4]Mansoura Univeristy, Egypt

P1.2 **Viscosity of ionic liquids**
H. Schmidt[1], M. Engelmann[1], M. Talibov[2], J. Safarov[1,2], A. Shahverdiyev[2] and E. Hassel[1]
[1]University of Rostock, Germany, [2]Azerbaijan Technical University, Azerbaijan

P1.3 **Surface tension of binary mixtures of ionic liquids with the common bistriflamide anion**
J. Coutinho[1], M. Perez[2], M. Freire[1] and O. Cabeza[2]
[1]Departamento de Química, CICECO, Universidade de Aveiro, Aveiro, Portugal, [2]Dpto de Física, Facultade de Ciencias, Universidade da Coruña, Coruña, Spain

P1.4 **Structural isomerism of hydrophobic ionic liquids: Thermophysical properties and solution behaviour**
C. Neves[1], M. Freire[1], L. Santos[2] and J. Coutinho[1]
[1]Departamento de Química, CICECO, Universidade de Aveiro, Aveiro, Portugal, [2]CIQ, Departamento de Química, Faculdade de Ciências da Universidade do Porto, Porto, Portugal

P1.5 **ThermophIL: An online application for ionic liquids property estimation**
J. Coutinho[1], P. Carvalho[1] and R. Gardas[2]
[1]CICECO, Departamento de Química, Universidade de Aveiro, Aveiro, Portugal, [2]Department of Chemistry, Indian Institute of Technology Madras, Chennai, India

P1.6 **Thermophysical properties of triazolium based ionic liquids**
R. Gardas, A. Gupta and P. Chhotaray
Department of Chemistry, Indian Institute of Technology Madras, India

P1.7 **Volumetric, viscometric and acoustic properties of binary mixtures of 1-butyl-3-methylimidazolium hexafluorophosfate + organic solvents at several temperatures and atmospheric pressure**
H. Hoga[1], P. Volpe[1] and R. Tôrres[2]
[1]Departamento de Físico-Química, Universidade Estadual de Campinas, Campinas, São Paulo, Brazil, [2]Departamento de Engenharia Química, Centro Universitário da FEI, São Bernardo do Campo, São Paulo, Brazil

P1.8 **Thermophysical properties of alkylammonium-based ionic liquids**
K. Machanová[1], Z. Sedláková[1], A. Boisset[2], M. Bendová[1], J. Jacquemin[2] and K. Aim[1]
[1]E. Hála Laboratory of Thermodynamics, Institute of Chemical Process Fundamentals AS CR, v. v. i., Prague, Czech Republic, [2]Université François Rabelais, Laboratoire PCMB, Equipe CIME, Faculté des Sciences et Techniques, Tours, France

P1.9 **Experimental vapour pressure of binary systems for 2,2,2-trifluoroethanol + ionic liquids. PC-SAFT modelling**
J. Garcia[2], M. Curras[1,2], M. Costa-Gomes[3], A. Padua[1], P. Husson[1] and J. Vijande[2]
[1]Universite´ Blaise Pascal, Laboratoire Thermodynamique et Interactions Moléculaires, Aubière, France, [2]Departamento de Física Aplicada, Edificio de Ciencias Experimentais, Universidade de Vigo, Vigo, Spain, [3]CNRS, Laboratoire Thermodynamique et Interactions Moléculaires, Aubière, Clermont Universite´, France

P1.10 **Volumetric properties of binary mixtures of the ionic liquid 1-butyl-3- methylimidazolium tetrafluoroborate with alkanols at temperature range (298.15 to 313.15 K)**
S. Ijardar
S.V. National Institute of Technology, Surat, Gujarat, India

P1.11 **Speed of sound of binary mixtures of the ionic liquid 1-butyl-3-methylimidazolium tetrafluoroborate with alkanol at 298.15 to 313.15 K**
M. Naved I
S.V. National Institute of Technology, Surat, Gujarat, India

P1.12 **Density and thermal conductivity of 1-butyl-3-methylimidazolium tetrafluoroborate + methanol mixture**
D. Tomida, T. Odashima, K. Qiao and C. Yokoyama
Tohoku University (IMRAM), Japan

P1.13 **Liquid-liquid interfacial tensions of ionic liquid systems**
A. Queimada, F. Mota and E. Macedo
LSRE/LCM -Laboratory of Separation and Reaction Engineering, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal

P1.14 **Measurements and modelling of antioxidants' solubility in ionic liquids**
E. Alevizou, E. Voutsas
National Technical University of Athens, Greece

P1.15 **Thermodynamic modelling of mixtures containing antioxidants, organic solvents and ionic liquids**
E. Panteli, E. Voutsas
National Technical University of Athens, Greece

Phase Equilibria

P1.16 **Vapor-liquid equilibria of the trans-1,3,3,3-tetrafluoropropene (R1234ze(E)) + isobutane (R600a) system at various temperatures from (258.150 to 288.150 K)**
X. Dong, M. Gong and J. Wu
Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, P.R. China

P1.17 **Phase stability trend in linear oligothiophene materials**
J. Costa[1], C. Lima[1], L. Gomes[2] and L. Santos[1]
[1]CIQ, Departamento de Quimica e Bioquimica, Faculdade de Ciencias da Universidade do Porto, Porto, Portugal, [2]CIAGEB, Faculdade de Ciencias da Saude, Universidade Fernando Pessoa, Porto, Portugal

P1.18 **Thermophysical properties of linear perfluorinated alcohols**
J. Costa[1], M. Fulem[2], B. Schroder[3], J. Coutinho[3], M. Monte[1] and L. Santos[1]
[1]CIQ, Departamento de Quimica e Bioquimica, Faculdade de Ciencias da Universidade do Porto, Porto, Portugal, [2]Department of Physical Chemistry, Institute of Chemical Technology Technicka, Prague, Czech Republic, [3]CICECO, Departamento de Quimica, Universidade de Aveiro, Aveiro, Portugal

P1.19 **How residual entropy and hindered rotation influence sublimation equilibria in polyphenylbenzenes**
C. Lima[1], M. Rocha[1], A. Melo[1], L. Gomes[2] and L. Santos[1]
[1]CIQ, Departamento de Quimica e Bioquimica, Faculdade de Ciencias da Universidade do Porto, Porto, Portugal, [2]CIAGEB, Faculdade de Ciencias da Saude, Universidade Fernando Pessoa, Porto, Portugal

P1.20 **The Yang-Yang anomaly in nitromethane and 3-pentanol binary liquid mixture: Experimental search by adiabatic scanning calorimetry**
P. Losada-Perez, C. Tripathi, J. Leys, C. Glorieux and J. Thoen
Laboratorium voor Akoestiek en Thermische Fysica, Departement Natuurkunde en Sterrenkunde Katholieke Universiteit Leuven, Heverlee, Belgium

P1.21 **Thermophysical properties of some nonlinear polyphenyls**
A. Rodrigues[1], M. Rocha[1], M. Bastos[1], L. Gomes[2] and L. Santos[1]
[1]Centro de Investigacao em Quimica, Faculdade de Ciencias da Universidade do Porto, Porto, Portugal, [2]CBFC, Faculdade de Ciências da Saúde, Universidade Fernando Pessoa, Porto, Portugal

P1.22 **Phase equilibria of mixtures related to the catalytic oxidation of alcohols in supercritical CO_2: An experimental and theoretical study**
I. Tsivintzelis[1], M. Beier[1], J. Grunwaldt[2] and G. Kontogeorgis[1]
[1]Department of Chemical and Biochemical Engineering, Technical University of Denmark, Denmark, [2]Institute for Chemical Technology and Polymer Chemistry, Karlsruhe Institute of Technology (KIT), Germany

P1.23 **PVTx for the carbon dioxide + hydrofluoromethane 2,3,3,3-tetrafluoroprop-1-ene binary system**
G. di Nicola[1], C. di Nicola[1], G. Giuliani[1] and R. Stryjek[2]
[1]Dipartimento di Energetica, Università Politecnica delle Marche, Ancona, Italy, [2]Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland

P1.24 **The prediction of vapour pressures and enthalpies of vaporization of $[c_nc_nim][ntf_2]$ ionic liquids with cosmo-rs**
B. Schroder[1], L. Santos[2], M. Rocha[2] and J. Coutinho[1]
[1]CICECO, Universidade de Aveiro, Departamento de Química, Aveiro, Portugal, [2]Centro de Investigação em Química, Faculdade de Ciências da Universidade do Porto, Porto, Portugal

P1.25 **Measurement and correlation of the solubility of water in the carbon dioxide rich phase using the cubic-plus-association equation of state**
S. Kim, S. Kim and J. Kang
Department of Chemical Engineering, Korea University, Korea

P1.26 **A vegetable lubricant developed for two stroke engines: compressibility and CO_2 solubilities**
T. Regueira[1], L. Lugo[2], E. Lopez[1] and J. Fernandez[1]
[1]University of Santiago de Compostela, Spain, [2]University of Vigo, Spain

P1.27 **Mutual dissolvability of dimethyl ether (DME) + castor oil, dimethyl ether (DME) + rap oil**
L. Zhang, X. Zhao and Z. Liu
State Key Laboratory of Thermal Fluid Science and Engineering of MOE, Xi'an Jiaotong University, P.R. China

Mass Diffusion and Thermo-Diffusion

P1.28 **Heat and mass transport coefficients in nanopore by molecular dynamics**
R. Hannaoui, G. Galliero and C. Boned
Laboratoire des Fluides Complexes et leurs Réservoirs (UMR 5150 CNRS/TOTAL), Université de Pau et des Pays de l'Adour, PAU Cedex, France

Petroleum Fluids

P1.29 **Heat of combustion of commercial diesel and biodiesel fuels and their blends: effect of water content**
I. Fernandez[1], E. Alvarez[1], F. Cerdeira[2], M. Vazquez[2] and M. Iris[3]
[1]Chemical Engineering Department, University of Vigo, Spain, [2]Mechanical Engineering, Thermal Machines and Motors & Fluids Department, University of Vigo, Spain, [3]Galician Automotive Technology Centre, Porriño, Spain

P1.30 **Piezoelectric Axial Vibrator (PAV) - The study of rheological properties of heavy oils at reservoir conditions**
M. Sultan, M. Milhet and A. Graciaa
Laboratoire des Fluides Complexes et leurs Réservoirs (UMR TOTAL CNRS 5150), Université de Pau et des Pays de l'Adour, Pau Cedex France

P1.31 **Asphaltene flocculation caused by CO_2 injection during enhanced oil recovery: an experimental investigation of a model system at high pressure**
F. Marcano[1,2], H. Carrier[1], M. Ranaudo[2], J. Chirinos[2], S. Acevedo[2] and J. Daridon[1]
[1]Laboratoire des Fluides Complexes, UMR 5150, Université de Pau et des Pays de l´Adour, France, [2]Laboratorio de Fisicoquímica de Hidrocarburos, Caracas, Venezuela

Aqueous Systems

P1.32 **The enthalpy of hydrogen bonding of amines in methanol and water**
K. Zaitseva, A. Tukhbatulina, M. Varfolomeev and B. Solomonov
Kazan Federal University, Russia

Transient Techniques

P1.33 **Characterization of nonlinear thermophysical properties of carbon layers deposited on the tiles of the JET tokamak divertor**
J. Gaspar[1], J. Gardarein[1], F. Rigollet[1], C. Le Niliot[1] and Y. Corre[2]
[1]IUSTI UMR CNRS 6595, Université de Provence Marseille, France, [2]CEA/IRFM, St Paul lez Durance, France

P1.34 **Hot ring method for measuring thermophysical properties**
V. Vretenár[1], Ľ. Kubičár[1], V. Boháč[1] and P. Dieška[2]
[1]Institute of Physics SAS, Bratislava, Slovakia, [2]Faculty of Electrical Engineering and Information Technology, STU, Bratislava, Slovakia

Measuring Techniques

P1.35 **Petrophysical measurements to optimize the development of heavy oil and natural bitumen**
A. Lipaev, L. Alekseeva
Almetyevsk State Oil Institute, Russia

P1.36 **Experimental assessment of thermal conductivity of grinded brick block in the conditions of semi-scale experiment**
Z. Pavlik, L. Fiala, M. Jerman, J. Zumar and R. Cerny
Czech Technical University Prague, Czech Republic

P1.37 **Fuzzy algorithm for location of nanoparticles in specific areas where are dropped for photothermal measurements**
B. Briseño Tepepa
UPIITA-IPN, Mexico

P1.38 **A new guarded hot plate for thermal conductivity measurement of solid moderately conductive materials at high temperatures**
J. Hameury, V. Scoarnec and B. Hay
Laboratoire National de Métrologie et d'Essais (LNE), Trappes, France

P1.39 **Improved hot wire methodology for thermal conductivity measurement in liquids**
E. Marin[1], S. Alvarado[1], G. Juarez[1], A. Calderon[1] and R. Ivanov[2]
[1]Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada (CICATA), Instituto Politécnico Nacional (IPN), México D.F., México, [2]Facultad de Física, Universidad Autónoma de Zacatecas, Zacatecas, México

P1.40 **Practical measurement method of relative thermal conductivity of core-shell type composite powder**
H. Choi, M. Moon and K. Lee
R&D Center of Donghyun Electronics Co., Ltd., Cheongbuk, Pyeongtaek-Si, Korea

P1.41 **Development of apparatus for evaluation of figure of merit of thermoelectric devices**
S. Kwon, Y. Kim and S. Lee
Korea Research Instititue of Standards and Science, Korea

P1.42 **Thermal and optical properties of vanadium oxide thin films near the transition temperature**
M. Kang[1], M. Chu[1], S. Kim[1], J. Ryu[2], H. Park[3] and S. Lee[4]
[1]University of Ulsan, Korea [2]Kongju National University, Korea [3]Ulsan College, Korea [4]Korea Research Institute of Standards and Science, Korea

P1.43 **Simultaneous measurement of temperature dependent thermophysical properties by the BICOND method with genetic algorithm based evaluation**
B. Czél[1], G. Gróf[1] and L. Kiss[2]
[1]Budapest University of Technology and Economics, Department of Energy Engineering, Hungary, [2]Université du Québec à Chicoutimi, Département des sciences appliquées, Canada

P1.44 **The investigation of transient heat transfer in composite materials on the example of carbon/epoxy composites.**
J. Terpiłowski[1], B. Gawron[1] and G. Woroniak[2]
[1]Military University of Technology, Poland, [2]Bialystok Technical University, Poland

P1.45 **A novel concept for phase equilibria measurements of chiral systems using polarimetry and Raman spectroscopy**
A. Butka, C. Pauls, K. Leonhard and A. Bardow
Chair of Technical Thermodynamics, RWTH Aachen University, Germany

P1.46 **Uncertainty of specific heat of uranium dioxide fuel pellets by differential scanning calorimetry**
K. Faêda, L. Carneiro, C. Vicente, F. Lameiras, D. Camarano and L. de Faria
CDTN/CNEN Centro de Desenvolvimento da Tecnologia Nuclear/ Comissão Nacional de Energia Nuclear, Brazil

P1.47 **Implementation of a concentric cylinder rheometer for high pressures**
T. Regueira[1], M. Comunas[1], L. Lugo[2], X. Paredes[1] and J. Fernandez[1]
[1]University of Santiago de Compostela, Spain, [2]University of Vigo, Spain

P1.48 **The apparatus for high precision measurements of the thermal conductivity**
G. Guseinov, E. Guseinov
Institute of Physics, Daghestan Scientific Center of the RAS, Makhachkala, Russia

P1.49 **The spectral emissivity determination of thermal protection ceramic material with FT-IR spectrometer**
Z. Wang, J. Dai
Harbin institute of technology, P.R. China

P1.50 **Spectral emissivity measurement facility for solar absorbing coating based on integrating-sphere reflectometry**
Z. Yufeng, J. Dai
Harbin Institute of Technology, P.R. China

P1.51 **Study of the thermal and mechanical properties of silver tin alloy with addition of silver nanoparticles**
L. Ortega Arroyo[1], E. San Martín Mártinez [1], F. Barcelo Santana[2], A. Cruz-Orea[3], M. Aguilar Mendez[1] and J. Vargas Aparicio[4]
[1]Centro de Investigación en Ciencia Apliacada y Tecnología Avanzada del Instituto Politécnico Nacional, [2]División de Estudios de Posgrado e Investigación, Facultad de Odontología, UNAM, [3]Departamento de Fisica,Centro de Investigación y de Estudios Avanzados del IPN, [4]Sección de Estudios de Posgrado e Investigación, ESIME- Zacatenco IPN, Mexico

Nanocomposites

P1.52 **Thermal diffusivity and conductivity measurements of polymer nanocomposites**
U. Gross[1], A. Fina[2] and M. Mainil[3]
[1]TU Bergakademie Freiberg, Institute of Thermal Engineering, Germany, [2]Politecnico di Torino – Sede di Alessandria, Italy, [3]NANOCYL S.A., R&D Department, Sambreville, Belgium

P1.53 **Specific heat capacity of nano- and ionano-fluids**
S. Murshed[1], C. Nieto de Castro[1], A. Ribeiro[1], M. Lourenço[1] and U. Mardolcar[2]
[1]Faculdade de Ciências da Universidade de Lisboa, Portugal, [2]Instituto Superior Técnico, Lisboa, Portugal

P1.54 **Thermodynamics of carbosilanecyclesiloxane dendrimers**
Y. Samosudova[1], A. Markin[1], N. Smirnova[1], E. Katarzhnova[2], G. Ignateva[2] and A. Muzafarov[2]
[1]Research Institute of Chemistry Nizhny Novgorod State University, Russia [2]Enikolopov Institute of Synthetic Polymer Materials, Russian Academy of Sciences, Russia

TUESDAY, AUGUST 30TH 2011 14:00 – 15:40

SPECIAL SESSION
PHOTOTHERMAL & PHOTOACOUSTIC THERMOPHYSICS 1

Hall A

Chair: A. Mandelis

14:00 **Photothermal thermophysics: techniques for the measurement of thermophysical properties of matter**
A. Mandelis, **Invited Speaker**
University of Toronto, Canada

14:30 **Laser-photoacoustic and photothermal spectroscopy in thermophysical sensing applications**
M. Sigrist, J. Rey
ETH Zürich, Switzerland

15:00 **Biomedical diagnostic techniques and imaging based on photothermal thermophysics: Blood glucose biosensor and early dental enamel caries imager**
A. Mandelis, X. Guo and N. Tabatabaei
University of Toronto, Canada

RADIATION

Hall B

Chair: F. Righini

14:00 **High sensitivity multi - specimen device for rapid measurement of linear thermal expansion**
P. Gaal, **Invited Speaker**
Anter Corporation, Pittsburgh PA, USA

14:20 **Intercomparison "Emissivity of thermal paints" in the temperature range from 100 °C to 800 °C**
C. Monte[1], M. Becker[1], J. Hollandt[1], J. Manara[2], M. Arduini-Schuster[2], S. Kabelac[3], R. Conrad[3], F. Greffrath[4], V. Scherer[4], R. Kulenovic[5], M. Linder[6], A. Steinbeck[7] and R. Pfeil[8]
[1]Physikalisch-Technische Bundesanstalt, Braunschweig und Berlin, Berlin, [2]Bayerisches Zentrum für Angewandte Energieforschung e.V., Am Hubland, Würzburg, [3]Helmut Schmidt Universität, Hamburg, [4]Lehrstuhl für Energieanlagen und Energieprozesstechnik, Ruhr-Universität Bochum, Bochum, [5]Institut für Kernenergetik und Energiesysteme, Universität Stuttgart, Stuttgart, [6]Institut für Technische Thermodynamik, Deutsches Zentrum für Luft- und Raumfahrt e. V., Stuttgart, [7]Institut für Raumfahrtsysteme, Universität Stuttgart, Stuttgart, [8]Rolls-Royce Mechanical Test Operations Centre GmbH, Blankenfelde-Mahlow, Germany

14:40 **Measurement of output power of thermophotovoltaic cells using a pseudo blackbody surface**
K. Hanamura, Y. Taniguchi, P. Jayavel, E. Srinivasan, H. Fukai and T. Yamada
Tokyo Institute of Technology, Japan

15:00 **Near-field radiative heat transfer of mesoporous materials**
J. Li, X. Zhang and Y. Feng
School of Mechanical Engineering, University of Science and Technology Beijing, Beijing, P.R. China

15:20 **Determination of the complex refractive index of thermochromic perovskite manganites with mixed-valences at cryogenic temperatures**
J. Manara, J. Hauck, M. Arduini-Schuster, M. Keller and M. Rydzek
Bavarian Center for Applied Energy Research (ZAE Bayern), Germany

TUESDAY, AUGUST 30TH 2011 14:00 – 15:40

VISCOSITY 2

Hall C

Chair: C.M.B.P. Oliveira

14:00 **Viscosity measurements of ionic liquids using the vibrating wire technique**
J. Diogo[1], F. Caetano[1,2], J. Fareleira[1] and W. Wakeham[1]
[1]Centro de Química Estrutural, Universidade Técnica de Lisboa, Portugal, [2]Universidade Aberta, Lisbon, Portugal

14:20 **The VW method for chain molecules: petroleum fluids**
N. Riesco, V. Vesovic
Imperial College London, Qatar Carbonates and Carbon Storage Research Centre (QCCSRC), Department of Earth Science & Engineering, South Kensington Campus, London, United Kingdom

14:40 **Viscosity of pure water in near critical and supercritical regions**
X. Liu, M. He and Y. Zhang
Xi'an Jiaotong University, China

15:00 **Measurement of hydrogen viscosity with capillary tube method in the range from 295K to 400K and from 5MPa to 100MPa**
Y. Nagahama[1], E. Yusibani[2], K. Yoshimura[1], K. Shinzato[2], M. Kohno[1], M. Fujii[2] and Y. Takata[1]
[1]Department of Mechanical Engineering, Kyushu University, Japan, [2]Research Center for HYDROGENIUS (AIST), Japan

ENGINEERING APPLICATIONS 1

Hall D

Chair: J. Fernandez

14:00 **Application of isothermal calorimetry to evaluate thermal properties and cooling effect of poly(urethane-urea) microcapsules containing xylitol**
F. Salaün[1,2], G. Bedek[1, 3], E. Devaux[1, 2], D. Dupont[1, 3], O. Maret[4] and B. Tillman[4]
[1]ENSAIT, GEMTEX, F-59100 Roubaix, France, [2]Univ Lille Nord de France, Lille, France, [3]HEI, Lille, France, [4]Damartex, Roubaix, France

14:20 **Dynamic column breakthrough measurements of nitrogen, methane and their mixtures for increased liquefied natural gas production efficiency**
P. Hofman, T. Rufford, G. Watson and E. May
Centre for Energy, The University of Western Australia, Crawley WA, Australia

14:40 **Correlation: thermal conductivity β€“ compressional wave velocity on rocks**
N. Gegenhuber
Montanuniversität, Austria

15:00 **Application of effective media theory for determination of thermal properties of cavity bricks in dependence on moisture content**
E. Vejmelkova, M. Jerman, L. Fiala, Z. Pavlik and R. Cerny
Czech Technical University in Prague, Czech Republic

15:20 **Influence cattails [14.5% Ni(Al_2O_3)] and pressures to exchange thermodynamics properties hydrate hydrazine**
M. Safarov, H. Zoirov, S. Tagoev, S. Najmiddinov, M. Zaripova and T. Tilloeva
Tajik Technical University after named by ac. M.S.Osimi, Tajikistan

TUESDAY, AUGUST 30TH 2011 16:40 – 19:20

SPECIAL SESSION
PHOTOTHERMAL & PHOTOACOUSTIC THERMOPHYSICS 2

Hall A

Chair: A. Mandelis

16:40 **Wide band photothermal ac calorimetry and heat transport measurement in supercooled liquids and gels**
R. Salenbien[1], G. Evingur[2], X. Xu[3], M. Kuriakose[4], P. Menon[5], R. Rajesh[5], K. Binnemans[6], L. Martinez[7], P. Griesmar[7], S. Longuemart[4], J. Leys[1] and C. Glorieux[1]
[1]Laboratorium voor Akoestiek en Thermische Fysica, Departement Natuurkunde en Sterrenkunde, KatholiekeUniversiteit Leuven, Leuven, Belgium, [2]Department of Physics, Faculty of Arts and Science, Istanbul Technical University, Maslak- Istanbul, Turkey, [3]Laboratory of Modern Acoustics, Institute of Acoustics, Nanjing University, Nanjing, China , [4]Univ. Lille Nord de France, Lille, France; ULCO, LDSMM, Dunkerque, France; CNRS UMR 8024, Dunkerque, France, [5]Div. Postgrado, Facultad de Ingenieria Mecanica y Electrica (FIME), Universidad Autonoma de Nuevo Leon (UANL), San Nicolas de Los Garza, Nuevo Leon, Mexico, [6]Laboratorium voor Coördinatiechemie, Afdeling Moleculair Design en Synthese, Departement Chemie, Katholieke Universiteit Leuven, Leuven, Belgium, [7]Equipe Circuit instrumentation et Modelisation en Electronique (ECIME) IUP GE, Universite de Cergy, Neuville sur Oise, Cergy Pontoise Cedex, France

17:10 **Thermal wave experiments using mirage detection in investigation of thermal properties of solids**
J. Bodzenta
Silesian University of Technology, Gliwice, Poland

17:40 **Thermal conductivity and diffusivity of thin layers: thermoreflectance microscope measurements**
D. Fournier[1,2], C. Fretigny[1] and J. Duquesne[1]
[1]Université Pierre et Marie Curie, France, [2]Centre National de la Recherche Scientifique (CNRS), France

18:10 **Optical and thermal characterization of synthetic opals by photothermal techniques**
R. Li Voti, L. Di Dio
Sapienza Università di Roma, Dipartimento SBAI, Roma, Italy

18:40 **Photopyroelectric calorimetry for the study of phase transitions in plastic crystals**
U. Zammit, S. Paoloni, F. Mercuri and M. Marinelli
Dept. Mechanical Engineering - University of Rome, Italy

HIGH TEMPERATURES

Hall B

Chair: N. Milosevic

16:40 **High temperature measurements of thermal conductivity for insulation materials**
D. Gaal[1], R. Fedore[1] and M. Thermitus[2]
[1]Anter Laboratories, Inc., Pittsburgh PA, USA, [2]Anter Corporation, Pittsburgh PA, USA

17:00 **Advanced research in thermoelectrics**
C. Linseis
Linseis Messgeräte GmbH Selb, Germany

17:20 **Normal total emittance of nickel at its melting point**
K. Boboridis[1], A. Seifter[2] and A. Obst[3]
[1]Joint Research Centre of the European Commission, Institute for Transuranium Elements, Karlsruhe, Germany, [2]Prinsegracht 7, The Hague, The Netherlands, [3]Los Alamos National Laboratory, New Mexico, USA

17:40 **Thermodynamic characterization of Ti-15at.%Nb alloy by drop calorimetry**
J. Prabha[1], R. Subramanian[2], J. Balakrishnan[2], A. Rai[2], M. Behera[2], M. Vijayalakshmi[2] and I. Johnson[3]
[1]Bishop Heber College, Trichy, India, [2]Indira Gandhi Centre for Atomic Research, Kalpakkam, India, [3]St. Joseph's College, Trichy, India

18:00 **Thermal stability and thermal property studies on Ti-5Ta-1.8Nb (mass %) alloy**
M. Behera, R. Subramanian, J. Balakrishnan, R. Mythili and S. Saibaba
Indira Gandhi Centre for Atomic Research, Kalpakkam, India

18:20 **Thermodynamic investigation of phase formation processes in the systems $LnSe_{2-x}$-$LnSe_{1.5}$ (Ln = La, Ce, Pr, Nd, Sm, Gd)**
L. Zelenina, T. Chusova and I. Vasilyeva
Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia

18:40 **Investigation of thermophysical properties of materials at extreme conditions**
V. Fortov, M. Sheindlin, M. Brykin, V. Korabenko, K. Khodakov and A. Rakhel
Joint Institute for High Temperatures, Russian Academy of Sciences, Russia

Viscosity 3

Hall C

Chair: A. Fröba

16:40 **Application of quartz crystal resonators for measuring thermophysical properties in fluids**
J. Daridon[1], M. Cassiède[1], J. Pauly[1] and J. Paillol[2], **Invited Speaker**
[1]Laboratoire des Fluides Complexes, Université de Pau, France, [2]Laboratoire de Génie Electrique, Université de Pau, France

17:00 **Density, speed of sound, and viscosity measurements of standard reference materials for biofuels**
A. Laesecke, T. Fortin and J. Splett
National Institute of Standards and Technology, Boulder, Colorado, USA

17:20 **Experimental and theoretical study on rheological properties of three types of non-newtonian standard liquids by laser-induced capillary wave method**
Y. Nagasaka[1], H. Takiguchi[2]
[1]Keio University, Department of System Design Engineering, Hiyoshi, Yokohama, Japan, [2]School of Integrated Design Engineering, Hiyoshi, Yokohama, Japan

17:40 **Viscosity and density measurements of ammonia and dimethyl ether blend**
K. Zhang, X. Meng and J. Wu
Xi'an Jiaotong University, Xi'an, P.R. China

18:00 **Evaluation of predictive models for the viscosity of biodiesel**
S. Freitas[1], M. Pratas[1], R. Ceriani[2], Á. Lima[3] and J. Coutinho[1]
[1]Centre for Research in Ceramics and Composite Materials (CICECO), Chemistry Department, University of Aveiro, Campus de Santiago, Aveiro, Portugal, [2]Department of Chemical Processes, University of Campinas, Campinas, São Paulo, Brazil, [3]Programa de Pós-Graduacão em Engenharia de Processos, Universidade Tiradentes, Farolândia, Aracaju-SE, Brazil

18:20 **Viscosity measurements of molten refractory metals using an electrostatic levitator**
T. Ishikawa[1], P. Paradis[1], J. Okada[1] and Y. Watanabe[2]
[1]Japan Aerospace Exploration Agency, japan, [2]Advanced Engineering Service Co. Ltd., Japan

18:40 **Viscosity of 1,1,1,2,3,3-hexafluoropropane (R236ea) and 1,1,1,3,3,3-hexafluoropropane (R236fa)**
X. Meng, J. Zhang, K. Zhang and J. Wu
Xi'an Jiaotong University, Xi'an, P.R. China

19:00 **Automatic flow analysis for rabbit blood with anticoagulant using a newly developed compact-sized falling needle rheometer**
H. Yamamoto[1], T. Suzuki[1], K. Kawamura[2], R. Plasenzotti[3] and D. Bernitzky[3]
[1]Kansai University of Suita, Japan, [2]Asahi Breweries, Ltd, Ibaraki, Japan, [3]Medical University of Vienna, Wien, Austria

TUESDAY, AUGUST 30TH 2011 16:40 – 19:20

ENGINEERING APPLICATIONS 2

Hall D

Chair: P. Gaal

16:40 **Database evolution to meet IT revolution**
A. Nagashima, **Invited Speaker**
Keio University, Hiyoshi, Yokohama, Japan

17:00 **Improving the quality of published experimental data on the basis of a global validation review process**
R. Chirico[1], M. Frenkel[1], J. Magee[1], V. Diky[1], C. Muzny[1], A. Kazakov[1], I. Abdulagatov[1], G. Hardin[1], J. Kang[2], P. Cummings[3], T. De Loss[4], J. O' Connell[5], K. Marsh[6], P. Brown[7], A. Goodwin[8], J. Wu[9], R. Weir[10], J. Trusler[11], A. Padua[12], W. Haynes[1], D. Friend[1], A. Mandelis[13], V. Rives[14], C. Schick[15], S. Vyazovkin[16], L. Hansen[17], J. Brennecke[18] and H. Habernickel[19]
[1]National Institute of Standards and Technology, Thermophysical Properties Division, Boulder, Colorado, USA, [2]Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, and Guest Researcher at the National Institute of Standards and Technology, Thermodynamics Research Center, Boulder, Colorado, USA, [3]Department of Chemical Engineering, Vanderbilt University, Nashville, Tennessee, USA, [4]Department of Process and Energy, Delft University of Technology, Delft, Netherlands, [5]Department of Chemical Engineering, University of Virginia, Charlottesville, Virginia, USA, [6]Department of Chemical and Process Engineering, University of Canterbury, Christchurch, New Zealand, [7]Rio Tinto Technology and Innovation, Bundoora, Australia, [8]Schlumberger Technology Corporation, Sugar Land, Texas, USA, [9]Center for Thermal and Fluid Science, Xi'an Jiaotong University, Xi'an, Shaanxi, China, [10]Department of Chemistry and Chemical Engineering, Royal Military College of Canada, Kingston, Ontario, Canada, [11]Department of Chemical Engineering and Chemical Technology, Imperial College, South Kensington Campus, London, United Kingdom, [12]Laboratoire Thermodynamique et Interactions Moléculaires, Université Blaise Pascal and CNRS, Clermont-Ferrand, France, [13]Faculty of Applied Science and Engineering, University of Toronto, Toronto, Ontario, Canada, [14]Departamento de Quimica Inorganica, Universidad de Salamanca, Salamanca, Spain, [15]Institute of Physics, Universität Rostock, Rostock, Germany, [16]Department of Chemistry, University of Alabama at Birmington, Birmingham, Alabama,USA, [17]Department of Chemistry and Biochemistry, Brigham Young University, Provo, Utah, USA, [18]Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, Indiana, USA, [19]Physical and Theoretical Chemistry 2, Elsevier, Amsterdam, Netherlands

17:20 **Thermophysical data of copper, iron -12 copper and tungsten -8 nickel - 2 copper during and after sintering**
W. Hohenauer[1], I. Mohsin[1] and D. Lager[2]
[1]AIT Austrian Institute of Technology, Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H., Vienna, Austria, [2]AAC Aerospace & Advanced Composites GmbH, c/o Forschungszentrum Seibersdorf, Seibersdorf, Austria

17:40 **Further progress on dynamic data evaluation system for thermophysical properties**
V. Diky, R. Chirico, A. Kazakov, C. Muzny, K. Kroenlein, J. Magee, I. Abdulagatov and M. Frenkel
Thermophysical Properties Division, NIST, USA

18:00 **Thermo-magnetic properties of dual functional sheet made of core shell type composite powder**
H. Choi[1], M. Moon[1], S. Kim[2] and K. Lee[1]
[1]R&D Center of Donghyun Electronics Co., Ltd. Cheongbuk, Pyeongtaek-Si, Korea, [2]Center for Energy-Materials Research, Korea Institute of Science and Technology, Seongbuk-Gu, Seoul, Korea

18:20 **Thermophysical properties of a hot work steel with high thermal conductivity**
E. Kaschnitz, P. Hofer and W. Funk
Österreischisches Gießerei-Institut, Leoben, Austria

18:40 **Thermophysical properties of working media from internet resources**
E. Ustyuzhanin[1], V. Ochkov[1], V. Znamenskiy[1], V. Mazur[2] and M. Frenkel[3]
[1]Moscow Power Engineering Institute (Technical University), Moscow, Russia, [2]Odessa State Academy of Freeze, Odessa, Ukraine, [3]NIST, Boulder, USA

TUESDAY, AUGUST 30TH 2011 13:00 – 19:20

POSTER SESSION 2

1st floor

Viscosity

P2.1 **Thermal conductivity and viscosity measurements of ethylene glycol-based Al_2O_3 nanofluids**
M. Pastoriza-Gallego, L. Lugo, J. Legido and M. Piñeiro
Física Aplicada, Facultad de Ciencias, Univesidad de Vigo, Spain

P2.2 **QSPR modeling of internal combustion for methylic and ethylic biodiesel**
J. Morón-Villarreyes, E. Miyasaki , Â. Carlos, P. de Oliveira , P. de Abreu , R. Clementin and M. D´Oca
Universidade Federal do Rio Grande, Brazil

P2.3 **Rheological characterization of distillate and residue streams obtained by centrifugal reactive-molecular distillation process**
L. Plazas Tovar[1], A. Winter[1], M. Wolf Maciel[1], C. Batistella[1], R. Maciel Filho[2] and L. Medina[3]
[1]Separation Processes Development Laboratory (LDPS), School of Chemical Engineering. State University of Campinas, UNICAMP, Campinas-SP, Brazil, [2]Project, and Advanced Control Laboratory (LOPCA), School of Chemical Engineering, State University of Campinas, UNICAMP, Campinas-SP, Brazil, [3]CENPES/PDP/TPAP/PETROBRAS, Rio de Janeiro-RJ, Brazil

P2.4 **Biofuels properties**
N. De Lima Da Silva, M. Wolf Maciel and R. Maciel Filho
School of Chemical Engineer, State University of Campinas (UNICAMP), Brazil

P2.5 **Modelling the viscosity of simple fluids based on Enskog theory**
R. Umla, V. Vesovic and N. Riesco
Imperial College London, Qatar Carbonates and Carbon Storage Research Centre (QCCSRC), Department of Earth Science & Engineering, South Kensington Campus, London, United Kingdom

P2.6 **Viscosity analysis of thermal peloids for use in thermotherapy**
L. Casás, J. Legido, M. Mourelle, C. Medina and C. Gómez
Departament of Applied Physics, Faculty of Science, University of Vigo, Vigo, Spain

P2.7 **Calibration fluid for diesel injection pump : density (up to 140 mpa) and viscosity (up to 200 MPa) between 293.15 K and 353.15 K**
J. Bazile, M. Milhet, J. Daridon and C. Boned
Laboratoire des fluides complexes et leurs réservoirs - Université de Pau et des Pays de l'Adour - France

P2.8 **Rheology of ionic liquids**
F. Santos[1], A. Ribeiro[1], M. Lourenço[1], C. Nieto de Castro[1], M. Tariq[2], I. Marrucho[2], J. Lopes[2], H. Veiga[2], A. Macatrão[2], J. Esperança[2], L. Rebelo[2], C. Marques[3] and C. Afonso[3]
[1]Departamento de Química e Bioquímica and Centro de Ciências Moleculares e Materiais, Faculdade de Ciências da Universidade de Lisboa, Portugal, [2]Instituto de Tecnologia Química e Biológica da Universidade Nova de Lisboa, Portugal , [3]Centro de Química Estrutural e Instituto Superior Técnico da Universidade Técnica de Lisboa, Portugal

Engineering Applications

P2.9 **Optimism effective of solar collector at the calculation heat capacity transfer fluid**
M. Safarov, M. Anaqulov, J. Zaripov, S. Nazirov, M. Zaripova and S. Tagoev
Tajik Technical University after named by ac. M.S.Osimi, Tajikistan

P2.10 **Heat capacities of kukersite oil shale in comparison with available data of other oil shales**
N. Savest, V. Oja
Tallinn University of Technology, Estonia

P2.11 **Effective thermal conductivity of metal foams**
V. Skibina[1], R. Wulf[1], J. Meinert[2] and U. Gross[1]
[1]TU Bergakademie Freiberg, Institute of Thermal Engineering, Germany, [2]Fraunhofer IFAM, Dresden, Germany

P2.12 **The use of infrared radiation to detect hidden objects under layers of clothing**
A. Andonova, G. Mihov and A. Bekiarski
Technical University – Sofia, Bulgaria

P2.13 **Thermophysical measurements over PCBs, as a complex element in the lead-free assembling process**
M. Branzei[1], I. Plotog[1], P. Svasta[1], M. Miculescu[1] and J. Villain[2]
[1]POLITEHNICA University of Bucharest, Romania, [2]University of Applied Sciences Augsburg, Germany

Volumetric Properties

P2.14 **The volumetric properties and the binary diffusion coefficients of liquid sodium-lead alloys in the concentration interval 0-70 at. % Pb**
R. Khairulin[1], S. Stankus[1], O. Yatsuk[1] and R. Abdullaev[2]
[1]Kutateladze Institute of Thermophysics, Novosibirsk, Russia, [2]Novosibirsk State University, Russia

P2.15 **Density measurements under pressure for the binary systems di-butyl ether + heptane or + cyclohexane at temperatures up to 343.15 K and at pressures up to 50 MPa**
F. Aguilar[1], F. Alaoui[1], C. Chamorro[2], J. Segovia[2], M. Villamañán[2] and E. Montero[1]
[1]Grupo de Ingeniería Energética, Escuela Politécnica Superior, Universidad de Burgos, Burgos, Spain, [2]Grupo de Termodinámica y Calibración TERMOCAL, Escuela de Ingenierías Industriales, Universidad de Valladolid, Valladolid, Spain

P2.16 **Thermophysical properties of geothermal waters of Germany and Azerbaijan**
M. Stephan[1], E. Mammadova[2], H. Schmidt[3], J. Safarov[1,2], J. Nocke[1], A. Shahverdiyev[2] and E. Hassel[1]
[1]University of Rostock, Germany, [2]Azerbaijan Technical University, Azerbaijan, [3]FVTR GmbH, Rostock, Germany

P2.17 **High-pressure volumetric properties of binary mixtures of methyl tert-butyl ether + alcohols**
D. Hauk[1], R. Tôrres[2]
[1]Departamento de Engenharia Mecânica, Centro Universitário da FEI, São Bernardo do Campo, SP, Brazil, [2]Departamento de Engenharia Química, Centro Universitário da FEI, São Bernardo do Campo, SP, Brazil

P2.18 **Volumetric properties of acetonitrile + amine mixtures at several temperatures**
S. Bittencourt[1], R. Tôrres[2]
[1]Departamento de Engenharia Mecânica, Centro Universitário da FEI, São Bernardo do Campo, SP, Brazil, [2]Departamento de Engenharia Química, Centro Universitário da FEI, São Bernardo do Campo, SP, Brazil

P2.19 **High-pressure density of biodiesel: experimental measurements and modeling with the CPA EoS**
M. Pratas[1], M. Oliveira[1,3], M. Piñeiro[2], M. Gallego[2], A. Queimada[3] and J. Coutinho[1]
[1]CICECO, Chemistry Department, University of Aveiro, Aveiro, Portugal, [2]Facultade de Ciencias, Departamento de Fisica Aplicada, Universidad de Vigo, Vigo, Spain, [3]LSRE - Laboratory of Separation and Reaction Engineering, Faculdade de Engenharia, Universidade do Porto, Porto, Portugal

P2.20 **Measurements and correlation of high pressure densities of protic ionic liquids**
J. Coutinho[1], P. Carvalho[1], S. Mattedi[2], M. Iglesias[2], I. Fonseca[3] and A. Ferreira[3]
[1]CICECO, Departamento de Química, Universidade de Aveiro, Aveiro, Portugal , [2]Programa de Pós Graduação em Engenharia Química, Escola Politécnica, Universidade Federal da Bahia (UFBA), Salvador-BA, Brazil, [3]Departamento de Engenharia Química, Faculdade de Ciências a Tecnologia, Universidade de Coimbra, Coimbra, Portugal

P2.21 **Development of apparatuses for PVT properties of hydrogen and measurements at high temperatures and high pressures**
N. Sakoda[1], K. Motomura[2], . Supriatno[2], Y. Fukatani[2], K. Shinzato[3], M. Kohno[2], Y. Takata[2] and M. Fujii[3]
[1]International Research Center for Hydrogen Energy, Kyushu University, Japan, [2]Department of Mechanical Engineering, Kyushu University, Japan, [3]HYDROGENIUS, National Institute of Advanced Industrial Science and Technology (AIST), Japan

P2.22 **Volumetric behaviour under pressure and thermal conductivity of ethylene glycol based FexOy ferrofluids**
L. Lugo, M. Pastoriza-Gallego, J. Legido and M. Piñeiro
Departamento de Fisica Aplicada, Facultad de Ciencias del Mar, Universidad de Vigo, Spain

P2.23 **Volumetric properties of carbon dioxide + carbon disulfide at several temperatures up to 120 MPa**
L. Lugo[1], T. Regueira[2], J. Fernandez[2], P. Carvalho[3] and J. Coutinho[3]
[1]Departamento de Física Aplicada, Facultade de Ciencias, Universidade de Vigo, Vigo, Spain, [2]Laboratorio de Propiedades Termofisicas, Universidade de Santiago de Compostela, Santiago de Compostela, Spain, [3]CICECO, Departamento de Química, Universidade de Aveiro, Aveiro, Portugal

P2.24 **Excess properties evaluation of n-alkanes binary liquid mixtures with use of acoustic measurements results**
T. Khasanshin, V. Samuilov, A. Shchamialiou and N. Starovoitova
Mogilev State University of Food Technology, Russia

Lubricants & Refrigerants

P2.25 **Density and thermal conductivity of R-409a refrigerant in the gaseous state**
O. Verba, S. Komarov, E. Raschektaeva and S. Stankus
Kutateladze Institute of Thermophysics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

P2.26 **Modeling of the thermophysical properties of CO_2-lubricant oil mixtures**
G. Raabe, J. Koehler
Institut fuer Thermodynamik, TU Braunschweig, Germany

P2.27 **Phase behavior of some binary mixtures of refrigerants with carbon dioxide**
A. Vasserman, S. Kozlovsky and V. Malchevsky
Odessa National Maritime University, Ukraine

P2.28 **High-viscous vegetable based oils as substitutes of mineral oils for their use in wind turbines**
X. Paredes, M. Comunas, A. Pensado and J. Fernandez
University of Santiago de Compostela, Spain

P2.29 **Measurements of transport properties in the gas phase for hydrofluoroolefins by using a cylindrical acoustic resonator**
Y. Kano, K. Fujii
National Institute of Advanced Industrial Science and Technology, Japan

Speed of Sound

P2.30 **Speed of sound, density and compressibility of a fuel from ultrasonic measurement under pressure**
E. Ndiaye, J. Daridon and D. Nasri
Université de Pau - LFC-R, France

P2.31 **Thermodynamic properties of compressed 1,4- and 2,3-butanediol calculated from the high-pressure speed of sound measurements**
M. Dzida, E. Zorebski and M. Zorebski
Silesian University, Katowice, Poland

High Temperatures

P2.32 **The apportionment of the aerodynamic heating and temperature difference in thermal protection structure**
G. Yewei[1], D. Yanxia[1], H. Lixin[1], D. Guangqi[2] and S. Yue'e[2]
[1]China Aerodynamics Research and Development Center, Mianyang, P.R. China, [2]Beijing Electro-mechanical Engineering Institute, Bejing, P.R. China

P2.33 **Study on the design of experimental state parameter of the thermal structure**
G. Xiangren[1], G. Yewei[1], L. Lei[2], Z. Lei[1] and W. Anling[1]
[1]China Aerodynamics Research and Development Center, P.R. China [2]State Key Laboratory of Aerodynamics, Mianyang Sichuan, P.R. China

P2.34 **Analysis of modal characteristics of aircraft wing structure in the aerodynamic heating environment**
L. Lei[1], G. Xiangren[2], G. Yewei[2], H. Lixin[2] and W. Anling[2]
[1]State Key Laboratory of Aerodynamics, Mianyang Sichuan,China, [2]China Aerodynamics Research and Development Center, Mianyang, Sichuan, P.R. China

P2.35 **Thermal expansion of ZrO_2-20 mol%Gd_2O_3 measured by XRD**
K. Kang, S. Na and G. Park
Korea Atomic Energy Research Institute, Korea

P2.36 **In-situ calibration exercise for radiation thermometers used in fast laser-heating experiments**
K. Boboridis[1], L. Capriotti[1,2] and R. Böhler[1]
[1]Joint Research Centre of the European Commission, Institute for Transuranium Elements, Karlsruhe, Germany, [2]Department of Nuclear Engineering, Politecnico di Milano, Milano, Italy

Photoacoustic Thermophysics

P2.37 **Obtaining of thermal images of small agricultural seed by techniques photoacoustic and photopyroelectric microscopy**
A. Dominguez Pacheco[1,2], C. Hernandez Aguilar[1,2] and A. Cruz-Orea[2]
[1]Instituto Politécnico Nacional - ESIME zacatenco, Mexico [2]CINVESTAV – IPN, Mexico

P2.38 **Non-radiative relaxation time of lettuce seed obtained by photoacoustic spectroscopy**
C. Hernandez Aguilar[1,2], A. Dominguez Pacheco[1,2], A. Cruz-Orea[2] and F. Sánchez-Sinéncio[2,3]
[1]Instituto Politécnico Nacional - ESIME zacatenco, Mexico [2]CINVESTAV – IPN, Mexico [3]Centro Latino-Americano de Física

P2.39 **Analysis of maize seed germs by thermal imaging technique using photoacoustic microscopy**
A. Dominguez Pacheco[1,2], C. Hernandez Aguilar[1,2] and A. Cruz-Orea[2]
[1]Instituto Politécnico Nacional - ESIME zacatenco, Mexico [2]CINVESTAV – IPN, Mexico

P2.40 **Influence of electromagnetic field to the spectra of the brightness of the reflection of visible light from the surface of 2205MFA duplex steel**
V. Yermishkin [1], N. Minina [1], V. Roshchupkin [1] and P. Tomaio [2]
[1]Baikov Institute of Metallurgy and Materials Science, RAS, Moscow, Russia, [2]Institute Polytechnico National, Mexico

P2.41 **An acoustic method of investigating the titanium alloys construction materials**
M. Lyakhovitskiy , V. Roshchupkin , M. Pokrasin and N. Minina
Baikov Institute of Metallurgy and Materials Science, RAS, Moscow, Russia

P2.42 **Surface tension and viscosity measurement of some fuels using the (Surface Laser-Light Scattering)SLLS method**
S. Bi, G. Zhao, J. Wu and Z. Liu
Key Laboratory of Thermal Fluid Science and Engineering of MOE, Xi'an Jiaotong University, Xi'an Shaanxi, P.R. China

P2.43 **Photoacoustic studies on zircaloy-2**
P. Palanichamy [1], C. Sanjeeviraja[2], K. Ramachandran[3], K. Jeyadheepan[2] and P. Kalyanasundaram [1]
[1]NDE Division, Indira Gandhi Center for Atomic Research, Kalpakkam, India, [2]School of Physics, Alagappa University, Karaikudi, India, [3]School of Physics, Madurai Kamaraj University, Madurai, India

Photothermal Techniques

P2.44 **On the heating and temperature measurement for high temperature emissivity analyses of coatings**
M. Honner, P. Vacíková and J. Martan
University of West Bohemia in Pilsen, Czech Republic

P2.45 **Thermal diffusivity dependence on temperature of single crystals applied in nonlinear optics**
D. Trefon-Radziejewska, J. Bodzenta
Institute of Physics CND, Gliwice, Poland

P2.46 **Photopyroelectric calorimetry applied to the study of phase transitions down to 10K**
A. Oleaga, A. Mendioroz and A. Salazar
Departamento Fisica Aplicada I, Escuela Tecnica Superior de Ingenieria, Universidad del Pais Vasco, Bilbao, Spain

P2.47 **Electropyroelectric technique for measurement of the thermal effusivity of liquids**
R. Ivanov[1], E. Marin[2], I. Moreno[1] and C. Araujo[1]
[1]Facultad de Física, Universidad Autónoma de Zacatecas, Zacatecas, México, [2]Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada, Instituto Politécnico Nacional, México D. F., México

P2.48 **Thermal diffusivity behavior of guadua angustifolia kunth as a function of culm zone and moisture content**
F. Gordillo-Delgado[1], D. Cortes-Hernández[1] and E. Marin[1]
[1]Laboratorio de Optoelectrónica, Armenia, Colombia, [2]Centro de Investigación en Ciencia aplicada y Tecnología Avanzada del I.P.N, Unidad Legaria, México D.F, México

P2.49 **Optical absorption coefficient of different tortillas by photoacoustic spectroscopy**
C. Hernandez Aguilar[1,2], D. Gutierrez Cruz[1], A. Dominguez Pacheco[1,2], A. Cruz-Orea[2], R. Zepeda Bautista[1] and J. Lopez Bonilla[1]
[1]Instituto Politécnico Nacional - ESIME zacatenco, Mexico [2]CINVESTAV – IPN, Mexico

P2.50 **Moving persons tracking from infrared image sequences**
A. Andonova, A. Bekiarski and S. Pleshkova-Bekiarska
Technical University of Sofia, Bulgaria

Radiation

P2.51 **The influence of laser processing on the emissivity of ASTM A681 steel.**
P. Vacíková, M. Honner
University of West Bohemia in Pilsen, Czech Republic

P2.52 **Radiative properties of rutile**
L. González-Fernández[1], L. del Campo[2], D. De Sousa Meneses[3,4], P. Echegut[3], R. Pérez-Sáez[1,5] and M. Tello[1,5]
[1]Departamento de Física de la Materia Condensada, Facultad de Ciencia y Tecnología, Universidad del País Vasco, Bizkaia, Spain, [2]Departamento de Física Aplicada II, Facultad de Ciencia y Tecnología, Universidad del País Vasco, Bizkaia, Spain, [3]CNRS, UPR3079 CEMHTI, Orléans cedex 2, France, [4]Université d'Orléans, polytech' Orléans, Orléans cedex 2, France, [5]Instituto de Síntesis y Estudio de Materiales, Universidad del País Vasco, Bilbao, Spain.

P2.53 **Emissivity measurements on Ti-6Al-4V**
E. Risueño[1], L. González-Fernández[2,3], R. Pérez-Sáez[1,2], L. del Campo[4] and M. Tello[1, 2]
[1]Instituto de Síntesis y Estudio de Materiales, Universidad del País Vasco, Bilbao, Spain, [2]Departamento de Física de la Materia Condensada, Facultad de Ciencia y Tecnología, Universidad del País Vasco, Bizkaia, Spain, [3]Industria de Turbo Propulsores, S.A., Zamudio, Bizkaia, Spain, [4]Departamento de Física Aplicada II, Facultad de Ciencia y Tecnología, Universidad del País Vasco, Bizkaia, Spain

P2.54 **Radiative properties of zirconia coatings on inconel substrates**
L. González-Fernández[1,2], L. del Campo[3], R. Pérez-Sáez[1,4] and M. Tello[1,4]
[1]Departamento de Física de la Materia Condensada, Facultad de Ciencia y Tecnología, Universidad del País Vasco, Leioa, Bizkaia, Spain, [2]Industria de Turbopropulsores, S.A, Zamudio, Bizkaia, Spain, [3]Departamento de Física Aplicada II, Facultad de Ciencia y Tecnología, Universidad del País Vasco, Bizkaia, Spain, [4]Instituto de Síntesis y Estudio de Materiales, Universidad del País Vasco, Bilbao, Spain

WEDNESDAY, AUGUST 31ST 2011 09:00 – 11:00

SPECIAL SESSION
THEORY & MODELLING 1

Hall A

Chair: W.A. Wakeham

09:00 **Thermomagnetic and viscomagnetic effects in a dilute gas**
V. Vesovic[1], R. Hellmann[2], E. Bich[2] and E. Vogel[2], **Invited Speaker**
[1]Department of Earth Science and Engineering, Imperial College London, London, UK, [2]Institute of Chemistry, University of Rostock, Rostock, Germany

09:20 **Influence of polar interactions on the thermodynamic properties of fluids from molecular dynamics**
R. Sadus
Swinburne University of Technology, Australia

09:40 **A friction-theory-based model for the viscosity of alcohol-water mixtures**
A. Ruiz-Llamas, R. Macías-Salinas
SEPI-ESIQIE, Instituto Politecnico Nacional, Mexico

10:00 **Calculation of thermophysical properties of nitrogen gas based on an ab initio intermolecular potential energy surface**
R. Hellmann, E. Bich and E. Vogel
Institute of Chemistry, University of Rostock, Rostock, Germany

10:20 **Surrogate mixtures for modeling the thermophysical properties of aviation fuel**
M. Huber, T. Bruno
National Institute of Standards and Technology, Boulder CO USA

10:40 **Thermophysical properties of fluids: towards a single molecular model valid for n-alkanes ?**
G. Galliero, C. Boned
Laboratoire des Fluides Complexes et leurs Réservoirs (UMR 5150 CNRS/TOTAL), Université de Pau et des Pays de l'Adour,PAU Cedex, France

MASS DIFFUSION AND THERMO-DIFFUSION

Hall B

Chair: C.A. Nieto de Castro

09:00 **Measurements of binary diffusion coefficients in argon-neon mixtures using a Loschmidt cell combined with holographic interferometry**
T. Kugler[1,2], M. Rausch[1,2], A. Fröba[1,2], D. Buttig[3,4], E. Bich[3], E. Vogel[3] and E. Hassel[4]
[1]Erlangen Graduate School in Advanced Optical Technologies (SAOT), University Erlangen-Nuremberg, Germany, [2]Institute of Engineering Thermodynamics (LTT), University of Erlangen-Nuremberg, Germany, [3]Institute of Chemistry, University of Rostock, Germany, [4]Department of Engineering Thermodynamics, University of Rostock, Germany

09:20 **Measurement of the product of cross diffusion coefficients of ternary polymer solutions (cellulose acetate butyrate/styrene/methyl ethyl ketone) using Soret Forced Rayleigh Scattering method**
K. Koba[1], Y. Nagasaka[2]
[1]School of Integrated Design Engineering, Keio University, Japan, [2]Department of System Design Engineering, Keio University, Japan

09:40 **Measurement and correlation of high-pressure high-temperature hydrogen thermal conductivity**
P. Woodfield[1], S. Moroe[2], K. Kimura[2], M. Kohno[2], J. Fukai[2], Y. Takata[2], K. Shinzato[3] and M. Fujii[3]
[1]Griffith University, Australia, [2]Kyushu University, Japan, [3]AIST, Japan

10:00 **Sensitivity-optimized microfluidic H-sensor for rapid diffusion measurements**
P. Domagalski[1,2], M. Ottens[2] and A. Bardow[1,3]
[1]Process and Energy Department, Delft University of Technology, Netherlands, [2]Department of Biotechnology, Delft University of Technology, Netherlands, [3]Chair of Technical Thermodynamics, RWTH Aachen University, Germany

10:20 **Measurements of dispersion coefficients of CO_2 in CH_4 for sequestration and enhanced gas recovery**
T. Hughes[1], B. Graham[1], A. Chauhan[1,2] and E. May[1]
[1]Centre for Energy, University of Western Australia, [2]Shell Development Australia

10:40 **Determination of thermal diffusion and molecular diffusion coefficients in n-alkane binary mixtures**
D. Alonso de Mezquia[1], M. Bou-Ali[1], J. Madariaga[2], C. Santamaría[2] and P. Urteaga[1]
[1]Mondragon Goi Eskola Politeknikoa, Spain, [2]University of Basque Country, Spain

PHOTOTHERMAL TECHNIQUES 1

Hall C

Chair: R. Li Voti

09:00 **Thermophysical properties of thin films and boundary thermal resistances - Measurements by ultra fast laser flash methods and development of their database**
T. Baba, N. Taketoshi, T. Yagi and Y. Yamashita, **Invited Speaker**
National Metrology Institute of Japan, AIST, Japan

09:20 **Fly-ash influence on thermal diffusivity of ceramics samples**
J. Kovac[1], A. Trník[1,2], I. Medved[1,2] and L. Vozar[1]
[1]Constatine the Philosopher Univiersity in Nitra, Slovakia, [2]Czech Technical University, Czech Republic

09:40 **Simultaneous estimation of the temperature dependant thermal effusivity and thermal boundary resistance at the Al/$Ge_2Sb_2Te_5$ interface using the time resolved pump probe technique and a Bayesian estimation approach**
J. Battaglia[1], O. Fudym[2], H. Orlande[3], V. Schick[1], A. Kusiak[1], C. Rossignol[1] and C. Wiemer[4]
[1]Université de Bordeaux 1, France, [2]ENSTIMAC, France, [3]University of Rio de Janeiro, Brazil, [4]Laboratorio MDM , Italia

10:00 **Photoacoustic studies on nuclear materials**
P. Perumal, K. Perumal, C. Sanjeeviraja and K. Ramachandran
Indira Gandhi Centre for Atomic Research, Kalpakkam, India

10:20 **Enhanced IR-optical and electrical properties of sol-gel derived tco thin films for energy-efficient window applications**
M. Rydzek, N. Wolf, M. Arduini-Schuster and J. Manara
Bavarian Center for Applied Energy Research (ZAE Bayern), Germany

10:40 **Thermal diffusivity measurement on sub-mm specimen using heat diffusion image by spot heating thermoreflectance**
T. Yagi[1], S. Firoz[2], N. Taketoshi[1] and T. Baba[1]
[1]National Institute of Advanced Industrial Science and Technology, Japan [2]Ahsanullah University of Science and Technology, Japan

THERMAL PROPERTIES 1

Hall D

Chair: G. Pottlacher

09:00 **Transport properties research at Xi'an Jiaotong University**
J. Wu, **Invited Speaker**
Xi'an Jiaotong University, P.R. China

09:20 **The experimental system of dynamic light scattering for thermal conductivity coefficient of fluid**
S. Wang, M. He and Y. Zhang
Xi'an Jiaotong University, P.R. China

WEDNESDAY, AUGUST 31ST 2011 09:00 – 11:00

09:40 **Genetic-algorithm based method for thermophysical properties identification in a wide temperature range**
A. Smotritskiy[1], A. Kazakov[2], A. Starostin[1], A. Yampol'skiy[1] and P. Skripov[1]
[1]Institute of Thermal Physics, Russian Academy of Sciences, Russia, [2]Thermophysical Properties Division, National Institute of Standards and Technology, U.S.A.

10:00 **Photoacoustic technique applied to thermo-optical characterization of citrus essential oils**
G. López Muñoz[1], R. López González [2] and J. Balderas López[3]
[1]Unidad Profesional Interdisciplinaria en Ingeniería y Tecnologías Avanzadas UPIITA-IPN México, [2]Química Aromática S.A. México, [3]Unidad Profesional Interdisciplinaria en Biotecnología UPIIBI-IPN México

10:20 **Simultaneous measurement of thermal diffusivity and thermal effusivity of liquids by photoacoustic technique**
A. Yoshida, K. Wakamiya and T. Yamada
Osaka Prefecture University, Japan

10:40 **Apparatus for accurate density measurements of fluids over wide ranges of temperature, pressure, and density based on a compact single-sinker densimeter**
H. Li[1,2], M. Gong[1], H. Guo[1,2] and J. Wu[1]
[1]Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, P.R. China, [2]Graduate University of Chinese Academy of Sciences, Beijing, P.R. China

THEORY & MODELLING 2

Hall A

Chair: V. Vesovic

11:20 **Reference data for the density and viscosity of liquid antimony, bismuth, lead, nickel and silver**
M. Assael[1], A. Kalyva[1], K.D. Antoniadis[1], M. Banish[2], I. Egry[3], J. Wu[4], E. Kaschnitz[5] and W. Wakeham[6]
[1]Aristotle University of Thessaloniki, Greece, [2]University of Alabama in Huntsville, USA, [3]Institut für Materialphysik im Weltraum, Germany, [4]Xi'an Jiaotong University, P.R. China, [5]Österreichisches Gießerei-Institut, Austria, [6]Imperial College, UK

11:40 **Thermodynamics of binary transition-metal alloys**
N. Dubinin[1], L. Son[2]
[1]Institute of Metallurgy of the Ural Branch of the Russian Academy of Sciences, Ekaterinburg, Russia , [2]Ural State Technical University, Ekaterinburg, Russia

12:00 **Multiscale computer simulation of gas-phase synthesis of metal nanoclasters**
B. Gelchinski[1], A. Korenchenko[1,2] and A. Vorontsov[2]
[1]Institute of Metallurgy of Ural Branch of the Russian Academy of Science, Russia, [2]Southern Ural State University, Russia

12:20 **Multiphase equations of state for metals over wide range of temperatures and pressures**
K. Khishchenko
Joint Institute for High Temperatures RAS, Moscow, Russia

12:40 **Thermal conductivity of three-dimensional strongly coupled Yukawa liquids (dusty plasma)**
A. Shahzad, M. He
State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an, P. R. China

CRITICAL PROPERTIES

Hall B

Chair: K.D. Antoniadis

11:20 **Measurement of the critical properties of endothermic hydrocarbon fuels**
Y. Liu, M. He and Y. Zhang
Xi'an Jiaotong University, P.R. China

11:40 **The critical behaviour of the dielectric constant in the polar-polar mixture nitromethane + 3-pentanol. An unusual sign in its critical amplitude in the homogeneous region**
J. Leys[1], P. Losada-Perez[1], J. Troncoso[2], C. Glorieux[1] and J. Thoen[1]
[1]Laboratorium voor Akoestiek en Termische Fysica, Departement Natuurkunde en Sterrenkunde, Katholieke Universiteit Leuven, Leuven, Belgium, [2]Departamento de Física Aplicada, Universidad de Vigo (Campus de Ourense), Ourense, Spain

12:00 **Polymer modifies the critical region of the coexisting liquid phases**
P. Venkatesu
University of Delhi, Delhi, India

12:20 **Comparison of electron capture and beta decay rates in high temperature environment in explosion of supernova type II**
R. Baruah
HRH The Prince of Wales Institute of Engineering and Technology, India

WEDNESDAY, AUGUST 31ST 2011 11:20 – 13:00

PHOTOTHERMAL TECHNIQUES 2

Hall C

Chair: M. Sigrist

11:20 **Development of photothermal reflectance method for evaluating thermal contact resistance in SiP-mounted semiconductor devices (Three-dimensional heat conduction model for micro-scale sample configuration)**
Y. Otsubo[1], Y. Taguchi[2] and Y. Nagasaka[2]
[1]School of Integrated Design Engineering, Keio University, Tokyo, Japan [2]Department of System Design Engineering, Keio University, Tokyo, Japan

11:40 **Simultaneous measurement of thermal diffusivity and optical absorption coefficient of homogeneous solids using photothermal radiometry**
R. Fuente, E. Apiñaniz, A. Mendioroz and A. Salazar
Fisika Aplikatua I Saila, Euskal Herriko Unibertsitatea, Spain

12:00 **Thermal and optical characterization of multilayered solids using photothermal radiometry**
R. Fuente[1], E. Apiñaniz[1], A. Mendioroz[1], R. Celorrio[2] and A. Salazar[1]
[1]Departamento Fisica Aplicada I, Escuela Tecnica Superior de Ingenieria, Universidad del Pais Vasco, Spain, [2]Departamento de Matemática Aplicada, Universidad de Zaragoza, Zaragoza, Spain

12:20 **Temperature dependent thermal properties of thin films up to high temperatures β€“ pulsed photothermal radiometry measurement system and Si-B-C-N films**
J. Martan, J. Čapek and E. Amin Chalhoub
Department of Physics, University of West Bohemia, Plzeň, Czech Republic

12:40 **Measurement of thermal diffusivity and thermal effusivity of thick solids by photoacoustic technique**
A. Yoshida, A. Imuta and T. Yamada
Osaka Prefecture University, Japan

THERMAL PROPERTIES 2

Hall D

Chair: T. Baba

11:20 **Thermal properties of frits needed for controlling interface structures of electronic devices**
H. Kim, D. Kim, J. Kim and J. Lee, **Invited Speaker**
Inha University, Incheon, Korea

11:40 **Thermophysical properties of YSZ nanofluids in a wide temperature range**
A. Smotritskiy[1], P. Skripov[1], A. Kazakov[2] and S. Rutin[1]
[1]Institute of Thermal Physics, Russian Academy of Sciences, Ekaterinburg, Russian Federation, [2]Thermophysical Properties Division, National Institute of Standards and Technology, U.S.A

12:00 **Radiative properties of aqueous fluids dispersed with metal or dielectric oxide nanoparticles**
Q. Zhu[1], L. Mu[1], Y. Cui[1] and Z. Liu[2]
[1]Shanghai University of Electric Power, P.R. China, [2]Shanghai Jiaotong University, P.R. China

12:20 **Photopyroelectric spectroscopy used to study pure olive oil**
A. García-Quiroz[1], A. Cruz-Orea[2]
[1]Universidad Autonoma de la Ciudad de Mexico, Col. Centro, México D.F., México, [2]CINVESTAV-IPN, Colonia San Pedro Zacatenco, México D.F., México

12:40 **Isobaric heat capacity of nano silver colloid in dependence temperature atmospherics pressures**
M. Safarov, T. Tilloeva, S. Tagoev and H. Zoirov
Tajik Technical University after named by ac. M.S.Osimi, Tajikistan

WEDNESDAY, AUGUST 31ST 2011 14:00 – 15:20

AWARDS CEREMONY

Hall A

Chair: M.J. Assael F. Righini J. Blumm

14:00 **Thermophysical properties of industrially relevant fluids and fluid mixtures from pure theory**
R. Hellmann
Institute of Chemistry, University of Rostock, D-18059 Rostock, Germany

14:40 **"Mis-management" of a lifetime in thermophysics**
W. A. Wakeham
Imperial College London, U.K.

WEDNESDAY, AUGUST 31ST 2011 15:20 – 15:40

ANNOUNCEMENT OF RELATED CONFERENCES

Hall A

15:20 **18th Symposium on Thermophysical Properties, June 24th – 29th, 2012, Boulder, Colorado, U.S.A**

15:25 **10th Asian Thermophysical Properties Conference, 2013, Korea**

15:30 **20th European Conference on Thermophysical Properties, 2014, Portugal**

WEDNESDAY, AUGUST 31ST 2011 16:40 – 18:40

THEORY & MODELLING 3

Hall A

Chair: R. Sadus

16:40 **Ab initio equation of state for gaseous and supercritical argon based on the virial expansion**
B. Jäger, R. Hellmann and E. Bich
Institute of Chemisty, University of Rostock, Rostock, Germany

17:00 **Gaseous transport properties of hydrogen, deuterium and their binary mixtures from ab initio potential**
B. Song, X. Wang, J. Wu and Z. Liu
Key Laboratory of Thermal Fluid Science and Engineering of MOE, Xi'an Jiaotong University, China

17:20 **Computer simulations of hydrothermal fluids and ion association**
I. Svishchev, A. Plugatyr
Trent University, Canada

17:40 **Microscopic approach to the description of thermodynamic properties of water**
N. Malomuzh, I. Zhyganiuk and P. Mahlaichuk
Department of Theoretical Physics, I.I. Mechnikov Odessa National University, Ukraine

18:00 **Use of iterates in thermodynamics**
P. Valentin
Retired from Ecole Polytechnique and Total, France

18:20 **Estimation of Global Warming Potential (GWP) from molecular structure for rapid screening of potential refrigerants**
A. Kazakov[1], J. Brown[2] and M. Frenkel[1]
[1]Thermophysical Properties Division, NIST, USA, [2]Department of Mechanical Engineering, The Catholic University of America, USA

CALORIMETRY

Hall B

Chair: H. Kim

16:40 **High pressure cryogenic heat capacity measurements of liquid methane, ethane, propane and their mixtures by differential scanning calorimetery**
T. Syed, T. Hughes, K. Marsh and E. May
Centre for Energy, The University of Western Australia, Crawley WA, Australia

17:00 **Noncontact laser modulation calorimetry for high purity liquid iron**
K. Sugie[1], H. Kobatake[1], H. Fukuyama[1], M. Uchikoshi[1], M. Isshiki[1], K. Sugioka[2] and T. Tsukada[2]
[1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan, [2]Department of Chemical Engineering, Tohoku University, Sendai, Japan

17:20 **An apparatus of flow calorimetry for liquids and the measurements of ethanol**
T. Miyazawa[1], S. Kondo[2], T. Suzuki[3] and H. Sato[2]
[1]Graduate School of Science and Technolagy, Keio University, Japan, [2]Department of System Design Engineering, Keio University, Japan, [3]JX Nippon Oil & Energy Corporation

17:40 **Thermodynamics of fullerides [(bis-arene)2M][C60] (M = Cr, Mo and V)**
V. Ruchenin, A. Markin and N. Smirnova
Nizhni Novgorod State National Research University, Russia

18:00 **Calorimetric properties of aqueous of alkanolamines**
C. Romero, Y. Cruz
Departamento de Química, Universidad Nacional de Colombia. Bogota, Colombia

18:20 **The thermophysical properties of fullerene nanostructures**
A. Markin, N. Smirnova
Nizhny Novgorod State University, Russia

WEDNESDAY, AUGUST 31ST 2011 16:40 – 18:40

STANDARDS

Hall C

Chair: D. Friend

16:40 **Inter-laboratory comparison on thermal conductivity measurements by guarded hot plate**
B. Hay[1], L. Cortes[2], J. Filtz [1], N. Fleurence[1], U. Hammerschmidt[3], N. Sokolov [4], C. Stacey[5], R. Zarr [6] and J. Zhang[7]
[1]Laboratoire National de Metrologie et Essais (LNE), France , [2]Centro Nacional de Metrología (CENAM), Mexico, [3]Physikalisch-Technische Bundesanstalt (PTB), Germany, [4]D.I. Mendeleyev Institute for Metrology (VNIIM), Russia, [5]National Physical Laboratory (NPL), U.K., [6]National Institute of Standards and Technology (NIST), USA, [7]National Institute of Metrology (NIM), P.R. China

17:00 **Intercomparison of thermal conductivity measurements on a calcium silicate insulation material**
H. Ebert, F. Hemberger
Bavarian Center for Applied Energy Research (ZAE Bayern), Germany

17:20 **Establishment of an infrared total emittance capability at NIST**
L. Hanssen, B. Wilthan
National Institute of Standards and Technology, U.S.A.

17:40 **The international comparison on thermal diffusivity measurements for iron and isotropic graphite using the laser flash method in CCT-WG9**
M. Akoshima[1], B. Hay[2], J. Zhang[3], L. Chapman[4] and T. Baba[1]
[1]National Metrology Institute of Japan (NMIJ), AIST, Japan, [2]Laboratoire National de Métrologie et d'Essais (LNE), France, [3]National Institute of Metrology (NIM), P.R. China, [4]National Physical Laboratory (NPL), U.K.

18:00 **Results of an extensive intercomparison of infrared spectral reflectance capabilities**
B. Wilthan, L. Hanssen
National Institute of Standards and Technology, U.S.A.

THERMAL PROPERTIES 3

Hall D

Chair: Y. Nagasaka

16:40 **Search LMGS and measuring phase equilibrium for structure-H hydrates**
K. Tezuka[1], I. Kobayashi[1], T. Taguchi[1], S. Alavi[2], A. Sum[3], S. Takeya[4] and R. Ohmura[1]
[1]Department of Mechanical Engineering, Keio University, Japan, [2]Steacie Institute for Molecular Sciences, National Research Council of Canada, Ottawa, Ontario, Canada, [3]Center for Hydrate Research, Chemical Engineering Department, Colorado School of Mines, Golden, Colorado, [4]National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

17:00 **Thermal and apparent molar properties of seawater at high temperatures and pressures**
S. Berndt[1], J. Safarov[1,2], F. Millero[3], R. Feistel[4], A. Heintz[1] and E. Hassel[1]
[1]University of Rostock, Germany, [2]Azerbaijan Technical University, Azerbaijan, [3]University of Miami, USA, [4]Leibniz-Institut für Ostseeforschung, Germany

17:20 **Scaling Models of thermodynamic properties for the diethyl ether at the saturation**
I. Abdulagatov[1], E. Ustyuzhanin [2], V. Shishakov[2], P. Popov[2], J. Wu[3] and Y. Zhou[3]
[1]Geothermal Research Institute of the Dagestan Scientific Center RAS, Makhachkala, Russia, [2]Moscow Power Engineering Institute (Technical University), Moscow, Russia, [3]Xi'an Jiaotong University, Xi'an, P.R. China

17:40 **Anisotropic thermal transport in graphene oxide films**
W. Yu, H. Xie
Shanghai Second Polytechnic University, P.R. China

18:00 **Thermochemical investigation of peculiarities of hydrogen bonding in self-associated solvents**
K. Zaitseva, M. Varfolomeev, A. Tukhbatulina and B. Solomonov
Kazan Federal University, Russia

18:20 **Thermodynamics of oxygen in dilute liquid silver- lead-tellurium alloys**
J. Nyk, B. Onderka
AGH University of Science and Technology, Poland

WEDNESDAY, AUGUST 31ST 2011 11:00 – 18:40

POSTER SESSION 3

1st floor

Thermal Properties

P3.1 **Experimental investigation of Cv,x, P-O -T properties and equation of state**
M. Zaripova, H. Zoirov, S. Tagoev, S. Najmiddinov, M. Safarov and A. Toshov
Tajik Technical University after named by ac. M.S.Osimi, Tajikistan

P3.2 **Enthalpy and entropy ternary systems (ethylenglicol +water+grafit) and (ethylenglicol +water+soot)**
S. Nazirov, M. Anaqulov, M. Zaripova, M. Safarov, S. Najmiddinov, J. Zaripov and S. Tagoev
Tajik Technical University after named by ac. M.S.Osimi, Tajikistan

P3.3 **Thermal conductivity of some jam (plum) and products beer in dependence temperature and pressures**
M. Safarov[1], B. Abdullaev[2], M. Kurbanov[2], F. Kurbanov[2], M. Abdullava[2] and H. Zoirov[1]
[1]Tajik Technical University after named by ac. M.S.Osimi, Tajikistan [2]Technological University of Tajikistan

P3.4 **Accurate heat capacities measurements of imidazolium based ionic liquids**
M. Rocha[1], B. Schroder[2], J. Coutinho[2] and L. Santos[1]
[1]Centro de Investigacao em Quimica, Faculdade de Ciencias da Universidade do Porto, Portugal, [2]CICECO, Departamento de Química, Universidade de Aveiro, Portugal

P3.5 **Thermal characterization of edible oils by using photopyroelectric technique**
J. Valcárcel[1], G. Lara-Hernández[2], A. Cruz-Orea[2], J. Mendoza-Alvarez[2], F. Sánchez-Sinéncio[2] and A. García-Quiroz[3]
[1]Universidad Surcolombiana, Neiva H., Colombia, [2]Departamento de Física, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, México , [3]Universidad Autonoma de la Ciudad de Mexico, México

P3.6 **Measurement of gas solubility of oxygen in pure and mixed solvents at 298 K and 101.3 kPa**
H. Yamamoto, T. Sato, S. Araki and Y. Hamada
Kansai University of Suita, Japan

P3.7 **Thermal characterization of solutions containing gold nanoparticles at different pH values**
R. Gutierres Fuentes[1], J. Pescador-Rojas[1], J. Sánchez Rámirez[1], J. Jiménez Pérez[1], A. Cruz-Orea[2] and F. Sánchez-Sinéncio[2]
[1]Unidad Profesional Interdisciplinaria en Ingeniería y Tecnologías Avanzadas, Col. Barrio la Laguna Ticomán Delegación Gustavo A. Madero, México D.F., Mexico, [2]Departamento de Física, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Col. San Pedro Zacatenco, México, D.F., Mexico

P3.8 **Photothermal techniques applied to the thermal characterization of L-Cysteine-nanofluid**
E. Maldonado Alvarado[1], J. Jiménez Pérez[2], A. Cruz-Orea[3], E. Ramón Gallegos[1], J. Hernández Rosas[2] and P. Lomeli Mejia[4]
[1]Environment Citopathology Laboratory, Morphology Departament, Escuela Nacional de Ciencias Biológicas del IPN, Col. Sto. Tomas, México D.F., México, [2]Unidad Profesional Interdisciplinaria en Ingeniería y Tecnologías Avanzadas, Col. Barrio la Laguna Ticomán Delegación Gustavo A. Madero, México D.F., Mexico, [3]Departamento de Física, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Col. San Pedro Zacatenco, México D.F., México, [4]Centro Nacional de Rehabilitación y Ortopedia, Col. Arenal de Guadalupe, México D.F., Mexico

P3.9 **Photoacoustic thermal and optical characterization of blood**
J. Balderas López[1], G. Espinoza-Chávez[1] and L. Martinez-Pérez[2]
[1]Unidad Profesional Interdisciplinaria de Biotecnología del IPN, Basic Science Department, Mexico, [2]Unidad Profesional Interdisciplinaria de Ingeniería y Tecnologías Avanzadas del IPN, Bionic Department, Mexico

P3.10 **Heat capacity of mixtures of clay and salt solutions for their use in thalassotherapy**
C. Gómez[1], J. Legido[1], L. Casás[1], F. Plantier[2] and D. Bessières[2]
[1]Departament of Applied Physics, Faculty of Science, University of Vigo, Vigo, Spain, [2]Laboratoire des Fluides Complexes et leurs Réservoirs - UMR 5150, Université de Pau et des Pays de l'Adour, Pau, France

P3.11 **Calorimetric and gas chromatographic study of hydrogen bonding in ethylene glycol and diethylene glycol**
K. Zaitseva, A. Tukhbatulina, M. Varfolomeev and B. Solomonov
Kazan Federal University, Russia

P3.12 **Thermal stability of compound Yb14MnSb11 and their solid solutions**
M. Abdusalyamova[1], F. Makhmudov[1] and S. Kauzlarich[2]
[1]Institute of Chemistry Tajik Acad.Sci, Tajikistan [2]Department of Chemistry, University of California, Davis, CA, USA

P3.13 **The thermal conductivity of the carbon dioxide in porous glass media at the critical point vicinity**
G. Guseinov
Institute of Physics, Daghestan Scientific Center of the RAS, Makhachkala, Russia

P3.14 **On a correlation between the thermophysical properties of the solutions**
G. Guseinov
Institute of Physics, Daghestan Scientific Center of the RAS, Makhachkala, Russia

Theory & Modelling

P3.15 **Viscosity modelling of alcohols using the CPA EoS and the friction theory**
W. Yan[1], C. Langlais[2] and E. Stenby[1]
[1]Technical University of Denmark, Denmark, [2]University of Pau, France

P3.16 **Some features of thermophysical properties of liquid metals at near critical point finding by first principal molecular dynamics simulation**
B. Gelchinski[1], A. Mirzoev, Jr. [2] and A. Mirzoev [3]
[1]Institute of Metallurgy of Ural Branch of the Russian Academy of Science, Russia, [2]Stockholm University, Sweden, [3]Southern Ural State University, Russia

P3.17 **Investigation of natural convection effect on thermal response of annular PCM energy storage unit**
T. Wei, D. Yanxia, G. Yewei and H. Lixin
China Aerodynamics Research and Development Center, Mianyang, Sichuan, P.R. China

P3.18 **Calculations of binary diffusion coefficients and thermal diffusion factors of gaseous neon-argon and helium-krypton mixtures from state-of-the-art ab initio pair potentials**
E. Bich, R. Hellmann, B. Jäger and E. Vogel
Institute of Chemistry, University of Rostock, Rostock, Germany

P3.19 **Comparative study between equations of state that uses associating contribution: Application of the CarnahanβEUStarling Repulsion term and introduction of a co-volume parameter temperature-dependent**
R. Checoni[1], S. Ravagnani[2]
[1]Instituto de Quimica - Universidade Estadual de Campinas - UNICAMP - Brasil, [2]Faculade de Engenharia Química - Universidade Estadual de Campinas - UNICAMP - Brasil

P3.20 **Specific heat of TiO_2 nanoparticles in water**
J. Hernández Rosas[1], J. Jiménez Pérez[1], J. Herrera-Pérez[2], J. Sánchez Rámirez[1] and J. Mendoza-Alvarez[3]
[1]UPIITA-IPN, Mexico [2]CICATA-IPN, Mexico [3]CINVESTAV-IPN, Mexico

Calorimetry

P3.21 **Measurement and modeling of the excess molar enthalpy for water + amide mixtures from 288.15 K to 303.15 K and at atmospheric pressure**
R. Checoni[1], P. Volpe[2]
[1]Universidade Estadual de Campinas - UNICAMP, Brazil [2]Universidade Estadual de Campinas – UNICAMP, Brazil

P3.22 **Thermophysical properties of the poly-1,1,1,3,3,3-hexafluoroisopropyl-2-fluoro acrylate**
S. Zaitsev, A. Markin and L. Kurushina
Nizhny Novrorod State University, Russia

P3.23 **Thermodynamics of biofuels: excess enthalpies and isothermal vapour-liquid equilibria of binary mixtures containing 1-pentanol and isoctane or heptane**
A. Moreau, J. Segovia, M. Villamañán, C. Chamorro, R. Villamañán and M. Martín
Research Group TERMOCAL, University of Valladolid, Spain

P3.24 **Investigation O kinetic of oxidation of auriferous antimony - Mercurial concentrat**
M. Abdusalyamova, S. Gadoev and O. Rakhmatov
Institute of Chemistry Tajik Acad. Sci, Tajikistan

P3.25 **Calorimetry as a tool for the determination of the intramolecular hydrogen bond enthalpy in ortho-substituted phenols**
M. Varfolomeev, D. Abaidullina and B. Solomonov
Kazan (Volga region) Federal University, Russia

P3.26 **Solution enthalpies of amides in the organic solvents at infinite dilution: hydrogen bond analysis**
M. Varfolomeev, I. Rakipov
Kazan (Volga region) Federal University, Russia

Critical Properties

P3.27 **Heat capacity of macro- and nano-systems under gravity near the critical point**
A. Alekhin, B. Abdikarimov, E. Rudnikov and Y. Ostapchuk
Physics Department, Kyiv National Taras Shevchenko University, Kyiv, Ukraine

P3.28 **Experimental study of the thermal (PVT) and caloric (Cv) properties of aqueous ammonia solution in the critical, supercritical, and retrograde regions**
P. Nikolay[1], I. Abdulagatov[2], B. Rabiyat[1] and S. Gennadiy[1]
[1]Institute of Physics of the Dagestan Scientific Center of the Russian Academy of Sciences, Makhachkala, Dagestan, Russia, [2]National Institute of Standards and Technology, Boulder, Colorado, U.S.A.

P3.29 **The investigation of the thermodynamic properties of the diethyl ether**
P. Nikolay[1], B. Rabiyat[1], I. Abdulagatov[2] and S. Gennadiy[1]
[1]1Institute of Physics of the Dagestan Scientific Center of the Russian Academy of Sciences, Makhachkala, Dagestan, Russia, [2]National Institute of Standards and Technology, Boulder, Colorado, U.S.A.

Interfacial Properties

P3.30 **Surface tension of diethanolamine-K_2CO_3-water mixtures**
X. Wang, Y. Gao and Z. Liu
Xi'an Jiaotong University, P.R. China

P3.31 **Influence of oxygen and carbon activities on surface tension of liquid iron studied using oscillating droplet method**
K. Morohoshi, M. Uchikoshi, M. Isshiki and H. Fukuyama
Tohoku University, Japan

P3.32 **A correlation of surface tension of binary and ternary mixtures based on the friction theory**
G. Zhao, S. Bi and J. Wu
Key Laboratory of Thermal Fluid Science and Engineering of MOE, Xi'an Jiaotong University, Xi'an Shaanxi, P.R. China

P3.33 **Surface tension of binary mixtures including polar components modeled by the density gradient theory combined with the PC-SAFT equation of state**
V. Vinš, J. Hrubý and B. Planková
Institute of Thermomechanics AS CR, Prague, Czech Republic

P3.34 **Behaviour of density and surface tension as a function of temperature mixing 1-alkanol + n-alkane**
J. Corralo, L. Casás and J. Legido
Departament of Applied Physics, Faculty of Science, University of Vigo, Vigo, Spain

Bio-materials

P3.35 **Preparation of atactic poly(vinyl alcohol) nanoweb having high water resistance by heat treatment**
W. Lyoo[1], S. Lee[1], J. Cha[1], M. Kim[1], S. Lee[1], S. Han[1], M. Lee[1], C. Kim[2], Y. Chung[3] and S. Han[1]
[1]Division of Advanced Organic Materials, School of Textiles, Yeungnam University, Gyeongsan, Korea, [2]WooJinChem Co., Ltd., Gyochon-ri, Jain-Myeon, Gyeongsan-si, Gyeongsangbuk-do, Korea, [3]Department of Textile Engineering, Chunbuk National University, Jeonju, Korea

P3.36 **Thermophysical study by DSC of several barbituric acid derivatives**
M. Roux[1], M. Temprado[1], R. Notario[1], F. Ros[2], M. Segura[3] and J. Chickos[4]
[1]Institute of Physical Chemistry Rocasolano, CSIC, Madrid, Spain, [2]Institute of Medical Chemistry, CSIC, Madrid, Spain, [3]PerkinElmer España S.L., Tres Cantos, Spain, [4]Department of Chemistry and Biochemistry, University of Missouri-St. Louis, St. Louis, Missouri, USA

P3.37 **Unified and heterogeneous modelling of water vapour sorption in wood**
A. Tekleyohannes[1], S. Avramidis[2]
[1]Ethiopian Institute of Agricultural Research, Ethiopia, [2]University of British Columbia, Canada

PCM materials

P3.38 **Apparent thermal properties of phase-change materials: an analysis using differential scanning calorimetry and transient impulse method**
Z. Pavlik[1], A. Trník[2], M. Keppert[1], M. Pavlíková[1], P. Volfová[1] and R. Cerny[1]
[1]Czech Technical University in Prague, Czech Republic, [2]Constantine the Philosopher University, Slovakia

P3.39 **Study of heat transfer characteristics and numerical method for phase-change thermal control unit**
D. Yanxia[1], G. Yewei[1], Z. Lina[2] and Y. Mingxing[2]
[1]China Aerodynamics Research and Development Center, Mianyang, Sichuan, P.R. China, [2]Beijing Institute of Nearspace Vehicle's Systems Engineering, Beijing, P.R. China

P3.40 **Thermodynamics of triphenylantimony dimethylacrylate**
I. Letyanina, A. Markin, A. Gushchin and D. Shashkin
Lobachevskiy State University of Nizhny Novgorod, Russia

Processes

P3.41 **Low-temperature charge transfer in thallium-doped GaSe single crystals**
S. Mustafaeva[1], M. Asadov[2] and A. Ismailov[1]
[1]Institute of Physics, National Academy of Sciences of Azerbaijan, Azerbaijan [2]Institute of Chemical Problems, National Academy of Sciences of Azerbaijan, Azerbaijan

P3.42 **Defect structure influence on thermal conductivity of gadolinium sulfides**
S. Luguev[1], N. Lugueva[1], V. Sokolov[2] and T. Luguev[1]
[1]Institute of Physics of Daghestan Scientific Center of RAS, Russia, [2]Nikolaev Institute of Inorganic Chemistry, Siberian Branch of RAS, Russia

P3.43 **Thermal property of zinc oxide coating films with controlled crystal preferred orientation**
M. Goto[1], Y. Xu[2], A. Kasahara[1] and M. Tosa[1]
[1]Materials Reliability Center, National Institute for Materials Science, [2]Materials Database Station, National Institute for Materials Science

P3.44 **Pressure effect on the thermal conductivity of $As_2(Se_{1-x}Te_x)_3$ solid solutions**
N. Kramynina, S. Luguev and N. Lugueva
Institute of Physics of Dagestan Scientific Center of RAS, Russia

P3.45 **Volatile Ni(II) complexes with beta-diiminates derived - novel precursors for MOCVD processes**
N. Morozova, K. Zherikova
Nikolaev Institute of Inorganic Chemistry of SB RAS, Russia

P3.46 **Energies of multiple hydrogen trapping by vacancies in bcc iron**
A. Mirzoev , D. Mirzaev and K. Okishev
South Ural State University, Chelyabinsk, Russia

Standards

P3.47 **A reference material for laser flash apparatus for thermal diffusivity measurements**
S. Lee[2], S. Kwon[2] and H. Ham[1]
[1]KRISS (Korea Research Institute of Standards and Science), Korea [2]Kyungpook National University, Korea

Thermal Insulations

P3.48 **Modeling of the heat transfer across porous honeycomb structures**
R. Coquard[1], M. Thomas[2], D. Baillis[3] and B. Estebe[2]
[1]Société « Etude Conseils Calcul en Mécanique des Structures » (EC²MS) , France, [2]Airbus Operation SAS, France, [3]Université de Lyon, CNRS, INSA-Lyon, France

P3.49 **Study on general calculating method of thermal conductivity for porous materials**
X. Dehong[1], D. Zheng[1], H. Xuejun[2] and L. Xin[3]
[1]University of Science & Technology Beijing, Beijing, P.R. China, [2]School of Environment and Energy Engineering, Beijing University of Civil Engineering and Architecture, Beijing, P.R. China, [3]Beijing Society of Thermophysics and Energy Engineering, Beijing , P.R. China

P3.50 **Study on the measurement of specific heat capacity of plastic composite using differential scanning calorimetry (discussion on measurement accuracy with pure metal and metal-oxide specimens, results for plastic composite specimen)**
J. Fujino, T. Honda
Fukuoka University, Japan

P3.51 **Thermophysical property measurements of thermal barrier coatings materials**
O. Nashed[1], R. Wulf[1], O. Fabrichnaya[2], G. Savinykh[2], M. Kriegel[2], H. Seifert[2] and U. Gross[1]
[1]TU Bergakademie Freiberg, Institute of Thermal Engineering, Germany, [2]TU Bergakademie Freiberg, Institute of Materials Science, Germany

P3.52 **Methods and instruments for researching thermophysical properties under heating and cooling**
I. Baranov, E. Ivashko
Saint-Petersburg State University of Refrigeration and Food Engineering, Russia

P3.53 **Thermophysical properties measurements of boron-modified phenolic resin used for ablative composites**
R. Ferreira [1], D. Camarano[1], L. Carneiro[1], O. Miranda[1], P. Grossi[1] and L. Pardini[2]
[1]Centro de Desenvolvimento da Tecnologia Nuclear - CDTN Comissão Nacional de Energia Nuclear – CNEN, Brazil [2]Instituto de Aeronáutica e Espaço - IAE Comando-Geral de Tecnologia Aeroespacial – DCTA, Brazil

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THEORY & MODELLING 4

Hall A

Chair: J.M.P. Trursler

09:00 **Analysis of performance and robustness of pseudorandom number generators in Monte Carlo simulation of vapor liquid equilibria**
K. Kroenlein[1], B. Alpert[2], M. Martin[3] and M. Frenkel[1]
[1]Thermophysical Properties Division, National Institute of Standards and Technology, Boulder, Colorado, USA, [2]Applied and Computational Mathematics Division, National Institute of Standards and Technology, Boulder, Colorado, USA, [3]Useful Bias, Edgewood, New Mexico, USA

09:20 **Modeling acid gas-water-alkanolamine systems using an extension of cubic-two-state equation of state**
M. Medeiros, P. Tellez-Arredondo
Facultad de Química, Depto. Fisicoquímica, Universidad Nacional Autónoma de México, Mexico

09:40 **Modeling the solubility of CO_2 in ionic liquids**
A. Chávez-Velasco, R. Macías-Salinas
SEPI-ESIQIE, Instituto Politecnico Nacional, Mexico

10:00 **A new method for evaluation of UNIFAC interaction parameters**
J. Kang[1], V. Dicky[2], R. Chirico[2], J. Magee[2], C. Muzny[2], I. Abdulagatov[2], A. Kazakov[2] and M. Frenkel[2]
[1]Dept of Chemical Engineering, Korea University, [2]Thermophysical Properties Division, NIST, U.S.A.

10:20 **A new empirical equation of state of hydrocarbons**
Y. Sun, X. Wang and Z. Liu
Key Laboratory of Thermal Fluid Science and Engineering of MOE, Xi'an Jiaotong University, China

10:40 **Thermodynamic properties of cyclohexane**
Y. Zhou[1], E. Lemmon[2] and J. Wu[1]
[1]Xi'an Jiaotong University, P. R. China, [2]National Institute of Standards and Technology, USA

IONIC LIQUIDS

Hall B

Chair: L. Santos

09:00 **Thermodynamic properties of ionic liquids and their mixtures with other solvents. Most recents developments and future aspects**
A. Heintz, **Invited Speaker**
University of Rostock, Germany

09:20 **Kinetics in a neat ionic liquid of the type CnmimNTf2**
B. Rathke[1], V. Vale[1], S. Will[1] and W. Schröer[2]
[1]Universität Bremen, Technische Thermodynamik, Bremen, Germany, [2]Universität Bremen, Institut f. Anorganische und Physikalische Chemie, Bremen, Germany

09:40 **Thermophysical properties of [C6mim][Tf2N]**
E. Langa[1], A. Ribeiro[1,3], F. Santos[1,3], M. Lourenço[1,3], C. Nieto de Castro[1,3], M. Santos[2,3] and A. Mainard[4]
[1]Centro de Ciências Moleculares e Materiais, Faculdade de Ciências, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal, [2]Centro de Química e Bioquímica, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal, [3]Departamento de Química e Bioquímica, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal, [4]Group of Applied Thermodynamics and Surfaces (GATHERS), Aragon Institute for Engineering Research (I3A), Science Faculty, University of Zaragoza, Zaragoza, Spain

10:00 **Heat capacity and viscosity of several ionanofluids**
A. Ribeiro[1,2], U. Mardolcar[3], F. Santos[1], S. Murshed[1], P. Goodrich[2], C. Hardacre[2], M. Lourenço[1] and C. Nieto de Castro[1]
[1]Departamento de Química e Bioquímica and Centro de Ciências Moleculares e Materiais, Faculdade de Ciências da Universidade de Lisboa, [2]The QUILL Centre/ School of Chemistry and Chemical Engineering, Queen's University Belfast, [3]Instituto Superior Técnico and Centro de Ciências Moleculares e Materiais, Universidade Técnica de Lisboa, Portugal

THURSDAY, SEPTEMBER 1ST 2011 09:00 – 11:00

10:20 **Quinic acid complexes in aqueous, alcoholic and ionic liquid solutions**
K. Majlesi, S. Rezaienejad
Department of Chemistry, Science and Research Branch, Islamic Azad University, Tehran, Iran

10:40 **Thermal conductivity of [C4mim][Tf2N] and [C2mim][EtSO4] and their IoNanofluids with carbon nanotubes**
J. França, S. Vieira, S. Murshed, M. Lourenço and C. Nieto de Castro
Departamento de Química e Bioquímica and Centro de Ciências Moleculares e Materiais, Faculdade de Ciências da Universidade de Lisboa, Lisboa, Portugal

THERMAL INSULATIONS & DYNAMIC TECHNIQUES

Hall C

Chair: H.-P. Ebert

09:00 **Thermophysical properties of materials: How metrology can support industry and society for a sustainable development?**
J. Filtz , B. Hay, J. Hameury, R. Morice and F. Haloua, **Invited Speaker**
LNE, National Metrology and Testing Laboratory, France

09:20 **Thermal conductivity measurements on supporting structures of the mercury probe Bepi Colombo**
S. Vidi[1], S. Rausch[1], H. Ebert[1] and D. Petry[2]
[1]Bavarian Center for Applied Energy Research (ZAE Bayern), Germany, [2]Astrium GmbH, Germany

09:40 **A thermal conductivity measurement method designed for wet porous materials applied to a wood fiber based thermal insulator**
Y. Jannot, V. Félix, A. Degiovanni and C. Moyne
Laboratoire d'Energétique et de Mécanique Théorique et Appliquée, INPL, France

10:00 **Simultaneous thermal properties estimation using partially heated surface method. application to a large range of materials**
V. Borges, P. Sousa and G. Guimarães
Federal University of Uberlândia, School of Mechanical Engineering, Brazil

10:20 **Parameter estimation procedure of model for pulse transient technique with heat loss effect verified on porous stone material**
V. Boháč, P. Dieška and Ľ. Kubičár
Instititue of Physics, Slovak Academy of Sciences, Slovakia

10:40 **Thermophysical properties for compounds with Kosnarite-type structure**
V. Pet'kov, E. Asabina and I. Schelokov
Lobachevsky State University of Nizhni Novgorod, Russia

PCM MATERIALS

Hall D

Chair: J.-F. Sacadura

09:00 **Thermal-property measurements for clathrate hydrates suitable as thermal energy storage for air-conditioning**
K. Sato[1], H. Sakamoto[1], S. Takeya[2], M. Nakajima[3] and R. Ohmura[1]
[1]Department of Mechanical Engineering, Keio University, [2]National Institute of Advanced Industrial Science and Technology, [3]Heat & Fluid Dynamics Department, IHI Corporation, Japan

09:20 **Determination of the enthalpy of PCM as a function of temperature using hf-DSC - A study of different measurement and evaluation methods**
H. Mehling, S. Hiebler, E. Guenther and F. Hemberger
Bavarian Center for Applied Energy Research (ZAE Bayern), Germany

09:40 **Effective thermal conductivity of composites using artificial neural network**
R. Bhoopal, R. Singh
Thermal Physics Laboratory, Department of Physics, University of Rajasthan, Jaipur, India

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10:00 **Solid-liquid phase change performances of hydrous salts with nanoparticles**
H. Peng, L. Da-Jie and C. Ze-Shao
Department of Thermal Science and Energy Engineering, University of Science and Technology of China, P.R. China

10:20 **The use of PCM boards for solar cells cooling**
O. Zmeskal[1], R. Barinka[2] and N. Karamahmut[1,3]
[1]Brno University of Technology, Faculty of Chemistry, Centre for Materials Research, Brno, Czech Republic, [2]Solartec s.r.o., Roznov pod Radhostem, Czech Republic, [3]Yıldız Technical University, Davutpaşa, Istanbul, Turkey

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INTERFACIAL PROPERTIES

Hall A

Chair: B. Rathke

11:20 **Wetting of oriented sapphire surfaces by liquid Al-Cu Alloys**
J. Schmitz, I. Egry and J. Brillo
Institut für Materialphysik im Weltraum, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Köln, Germany

11:40 **Measurement and modeling of biodiesels surface tensions**
S. Freitas[1], M. Oliveira[1], M. Pratas[1] and A. Queimada[2]
[1]Centre for Research in Ceramics and Composite Materials (CICECO), Chemistry Department, University of Aveiro, Campus de Santiago, Aveiro, Portugal, [2]LSRE - Laboratory of Separation and Reaction Engineering, Faculdade de engenharia, Universidade do Porto, Porto, Portugal

12:00 **Experimental verification of the possibility of detecting nano-bubbles generated from O_2 and Ar in water by using Ripplon surface Laser Light Scattering method with variable wavelength of Ripplon from 50 to 200 µm**
Y. Ichikawa[1], Y. Nagasaka[2]
[1]School of Integrated Design Engineering, Keio University, Japan, [2]Department of System Design Engineering, Keio University, Japan

12:20 **Oxygen tensioactive effect on molten Bi-Sn system**
D. Giuranno[1], E. Ricci[1], R. Novakovic[1] and E. Arato[2]
[1]National Research Council of Italy-Institute for Energetics and Interphases, Italy [2]University of Genoa-Department of Civil, Environmental and Architectural Engineering, Italy

LUBRICANTS & REFRIGERANTS

Hall B

Chair: M. Haynes

11:20 **Thermophysical properties of the refrigerant mixtures R22L and R22M from dynamic light scattering (DLS)**
A. Heller[1], M. Rausch[1, 2], A. Leipertz[1, 2] and A. Fröba[1, 2]
[1]Graduate School in Advanced Optical Technologies (SAOT), University Erlangen-Nuremberg, Germany, [2]Institute of Engineering Thermodynamics (LTT), University of Erlangen-Nuremberg, Germany

11:40 **Pressure-viscosity behaviour of ionic liquids, vegetable oils and other lubricants**
J. Fernandez, X. Paredes, F. Gacino, M. Comunas and A. Pensado
University of Santiago de Compostela, Spain

12:00 **Compressed liquid density measurements for 2,3,3,3-tetrafluoroprop-1-ene (R1234yf)**
L. Fedele[1], L. Colla[1], S. Bobbo[1], M. Scattolini[1], C. Zilio[2] and J. Brown[3]
[1]Consiglio Nazionale delle Ricerche, Istituto per le Tecnologie della Costruzione, Padova, Italy, [2]Dipartimento di Fisica Tecnica, Università degli Studi di Padova, Padova, Italy, [3]Department of Mechanical Engineering, The Catholic University of America, Washington, DC, USA

12:20 **Calculations of transport properties of CO_2-HCs mixtures based on semi-empirical potential energy surface**
F. Yang, B. Song, X. Wang and Z. Liu
Key Laboratory of Thermal Fluid Science and Engineering of MOE, Xi'an Jiaotong University, P.R. China

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ALLOYS

Hall C

Chair: I. Egry

11:20 **Density and viscosity of the binary $Zr_{64}Ni_{36}$ liquid alloy**
J. Brillo, A. Pommrich, S. Schneider and A. Meyer
German Aerospace Center, Institute of Materials Physics in Space, Cologne, Germany

11:40 **Thermal conductivity of low melting point metals in the liquid state**
S. Stankus[1], I. Savchenko[1] and A. Agazhanov[2]
[1]Kutateladze Institute of Thermophysics, Siberian Branch of the Russian Academy of Sciences, Russia, [2]Novosibirsk State University, Russia

12:00 **Thermodynamic properties in copper-silver-galium liquid system determined from E.M.F. and calorimetric methods**
D. Jendrzejczyk-Handzlik[1], K. Fitzner[1] and W. Gierlotka[1,2]
[1]AGH University of Science and Technology, Krakow, Poland, [2]Yuan Ze University, Chung-Li, Taiwan, R.O.C.

SPEED OF SOUND

Hall D

Chair: A.R.H. Goodwin

11:20 **A novel application of recursive equation method for the calculation of fluids properties**
S. Lago, A. Giuliano Albo
Istituto Nazionale di Ricerca Metrologica, Italy

11:40 **Measurement of sound speed of n-hydrogen from 100kPa to 1MPa and from 323K to 373K**
T. Yamaguchi, S. Momoki, O. Jambal, Y. Uetaki, T. Imamichi, H. Matsuzaki, K. Kanemaru and T. Shigechi
Nagasaki University, Japan

12:00 **Advances in characterization of acoustic resonators used to determine thermodynamic properties of gases**
A. Giuliano Albo
Istituto Nazionale di Ricerca Metrologica, Italy

12:20 **Partial molar volumes and isentropic compressibilities of transfer of L- leucine and L-isoleucine from water to aqueous K_2SO_4 / KNO_3 solution at (298.15 to 323.15 K)**
R. Uddeen, U. Gazal
Aligarh Muslim University, India

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