International Conference on Temperature and Thermal Measurements
Oct. 20～23, 2008
Beijing, China

NIM • CSM
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Conference Meals and Social Program

Sunday, Oct 19
13:30-17:00 Registration Desk (Crowne Plaza Hotel)

Monday, Oct, 20-TEMPBEIJING2008 DAY 1
7:00-8:30 Breakfast (Crowne Plaza Hotel or Guizhou Mansion)
8:30-11:00 Registration Desk (Crowne Plaza Hotel)
10:30-11:00 Coffee Break
12:30-13:30 Lunch (Crowne Plaza Hotel)
15:00-15:30 Coffee Break
18:00-20:00 Welcome Dinner

Tuesday, Oct, 21-TEMPBEIJING2008 DAY 2
7:00-8:30 Breakfast (Crowne Plaza Hotel or Guizhou Mansion)
10:30-11:00 Coffee Break
12:30-13:30 Lunch (Crowne Plaza Hotel)
15:00-15:30 Coffee Break

Wednesday, Oct, 22-TEMPBEIJING2008 DAY 3
7:00-8:30 Breakfast (Crowne Plaza Hotel or Guizhou Mansion)
10:30-11:00 Coffee Break
12:30-13:30 Lunch (Crowne Plaza Hotel)
13:30-17:00 Lab Visit (He Ping Li)

Thursday, Oct, 23-TEMPBEIJING2008 DAY 4
7:00-8:30 Breakfast (Crowne Plaza Hotel & Guizhou Mansion)
9:00-18:00 City tour and Lab Visit (Second Experimental Base of NIM)
18:00-20:00 Closing Banquet (Second Experimental Base of NIM)

Program at a glance

<table>
<thead>
<tr>
<th>TempBeijing2008</th>
<th>October 19 (Sun)</th>
<th>October 20 (Mon)</th>
<th>October 21 (Tue)</th>
<th>October 22 (Wed) Changping</th>
<th>October 23 (Thurs)</th>
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<tbody>
<tr>
<td>9:00-9:30</td>
<td>Opening</td>
<td>Parallel Session</td>
<td>Parallel Session</td>
<td>City tour and Lab Visit</td>
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<tr>
<td>9:30-10:30</td>
<td>Invited talk</td>
<td>Coffee break</td>
<td>Coffee break</td>
<td>(Second Experimental Base</td>
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<tr>
<td>10:30-11:00</td>
<td>Coffee break</td>
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<td>Coffee break</td>
<td>of NIM)</td>
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<tr>
<td>11:00-12:30</td>
<td>Invited talk</td>
<td>Parallel Session</td>
<td>Parallel Session</td>
<td>(Crowne Plaza Hotel)</td>
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<tr>
<td>12:30-13:30</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>(Guizhou Mansion)</td>
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<tr>
<td>13:30-15:00</td>
<td>Registration Desk</td>
<td>Plenary Session</td>
<td>Parallel Session</td>
<td>Lab tour (He Ping Li)</td>
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<tr>
<td>15:00-15:30</td>
<td>Coffee break</td>
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<td>Coffee break</td>
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<tr>
<td>15:30-17:00</td>
<td>Plenary Session</td>
<td>Parallel Session</td>
<td>Lab tour (He Ping Li)</td>
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<tr>
<td>18:00</td>
<td>Welcome Dinner</td>
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<td>Closing Banquet</td>
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Registration Desk [] Crowne Plaza Hotel[]
Sunday, October 19th
13:30 – 17:00

Monday, October 20th
8:30 – 11:00
Monday, October 20th – TEMPBEIJING Day 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>9:00 – 9:30</td>
<td>Opening</td>
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<tr>
<td>9:30 – 10:30</td>
<td>1. Keynote I</td>
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<tr>
<td>11:00 – 12:30</td>
<td>2. Keynote II</td>
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<tr>
<td>13:30 – 15:00</td>
<td>3. Plenary Reports I</td>
</tr>
<tr>
<td>15:30 – 17:00</td>
<td>4. Plenary Reports II</td>
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</table>

Tuesday, October 21st – TEMPBEIJING Day 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Meeting Room 1</th>
<th>Meeting Room 2</th>
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</thead>
<tbody>
<tr>
<td>9:00 – 10:30</td>
<td>5. Fixed Points</td>
<td>6. Eutectics I</td>
</tr>
<tr>
<td>11:00 – 12:30</td>
<td>7. Thermodynamic Thermometry</td>
<td>8. Thermocouples and Uncertainties</td>
</tr>
<tr>
<td>15:30 – 17:00</td>
<td>11. Thermal Measurement</td>
<td>12. Radiation Thermometry II</td>
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Wednesday, October 22nd – TEMPBEIJING Day 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Meeting Room 1</th>
<th>Meeting Room 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 10:30</td>
<td>Poster Session I</td>
<td>Poster Session II</td>
</tr>
<tr>
<td>11:00 – 12:30</td>
<td>13. Contact Thermometry</td>
<td>14. Eutectics II</td>
</tr>
<tr>
<td>13:30 – 17:00</td>
<td>Visit (He Ping Li)</td>
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Thursday, October 23rd – TEMPBEIJING Day 4

Lab Visit (Second Experimental Base) and City Tour
Scientific Program

Monday, Oct 20

Session 1  Keynote I
Chair: Yuning Duan

Opening Ceremony
ITS-90 Will be the last International Temperature Scale
T.J. Quinn
New Definition of the Kelvin
Joachim Fischer

Session 2: Keynote II
Chair: Joachim Fischer

Recent Development of the National Institute of Metrology (NIM)
Yuning Duan
Realizing the Benefits of Improvements in High Temperature
Metrology
Graham Machin
Acoustic Thermometry: Past, Present, and Future
Michael Moldover

Session 3  Plenary Reports I
Chair: Graham Machin

Uncertainty Analysis and Maintenance of the NIST Detector-
based Temperature Scale
H. W. Yoon, C. E. Gibson, G. P. Eppeldauer, A. W. Smith, S. W. Brown, K.
Toward the Redetermination of Boltzmann Constant by Cylinder Resonance of Gas

Zhang J T, Lin H, Duan Y Y, Feng X J

The evitherm Society plc: a Renewed Vision and New Life for the Virtual Institute for Thermal Metrology

F Pavese, J-R Filtz, J Fischer, W Hohenauer, P Leparlouer, V Mathot, P Nesvadba, I Severn

Linking the Results of EURAMET.T-K7 and CCT-K7 Key Comparisons


Session 4  Plenary Reports II

Chair: Michael Moldover

Stability and robustness tests on Co-C, Pt-C and Re-C cells: the first results


Calibration Facilities for Radiation Thermometry at NIM

YUAN Zundong, WANG Tiejun, WANG Jinghui, BAI Chengyu, LU Xiaofeng

Investigating the Behaviour of Industrial Platinum Resistance Thermometers from 13.8 K to 273.16 K

K. D. Hill

TEMPMEKO&ISHM conference Introduction

Janko Drnovsek

Tuesday, Oct 21

Session 5  Fixed Points

Chair: Franco Pavese

Improved Characterization and Certification Procedure for Fixed-Point Cells

Steffen Rudtsch, Martin Fahr

Effects of Impurities on the Melting Curve of the Aluminium Fixed Point

David I Head, Patchariya Petchpong, Joe Y. H. Au

Long-Term Stability of a Metal Cased Freezing Point of Aluminum Cell

Mingjian Zhao, Rong Ding, Deming Chen, Darnell Cabana

ITS-90 Inconsistency for standard platinum resistance thermometers in the sub-range 0°C to 419.527°C


Impurity Effects on the Tin Fixed-Point Temperature

Patchariya Petchpong, David I Head, Joe Y. H. Au

Session 6  Eutectics I

Chair: Yoshiro Yamada

Investigation of the Long Term Stability of the Co-C and Pt-C

Tiejun Wang, Chengyu Bai, Wei Dong

Developments around the Co-C eutectic point at LNE-INM/Cnam

F. Bourson, S. Briauadeau, B. Rougié, M. Sadli

Metal-Carbon Eutectic Cells for Platinum/Palladium Thermocouple Calibrations
Ronan Morice, Hideki Ogura, Jacques-Olivier Favreau, Thierry Deuje, Pascal Ridoux

New Design of Eutectic Fixed-Point Cell for Simultaneous Contact and Non-contact Measurements
Jovan Bojkovski, Miha Hiti, Janko Drnovšek

Session 7 Thermodynamic Thermometry
Chair: Howard Yoon

Waveguides and remote transducers for acoustic
Hong Lin, Keith A. Gillis, Michael R. Moldover, Jintao Zhang

Acoustic Measurements of the Boltzmann Constant
Michael Moldover

Further measurement of the melting point of gallium by Johnson noise thermometry

The Opening Perturbation on Acoustic Cylinder Resonance
Hong Lin, Keith A. Gillis, Jintao Zhang

Session 8 Thermocouples and Uncertainties
Chair: Georges Bonnier

Cycle temperature influences on thermocouples type N
Karzhavin V.A., Karzhavin A.V

Development and Applications of The WRe Temperature Sensor
Laura Wang, Kuihan Wang

On the Uncertainty in the Temperature Drop across the Backwall of High-Temperature Fixed Points
P. Castro, P. Bloembergen, Y. Yamada, M. A. Villamanan, G. Machin

Long Term Drift Characterisation of Noble Metal Thermocouples Using High Temperature Fixed Points
Jonathan V. Pearce, Graham Machin, Trevor Ford, Steve Wardle

Evaluation and Expression of Uncertainty in the Calibration of Infrared Total Radiation Pyrometer against a Noble Metal Thermocouple in the range 500°-1000 °C Using a Blackbody Source
Y.P. Singh

Session 9 Low Temperature
Chair: David Head

Last Developments in Accurate Cryogenic Thermometry
Franco Pavese

A proposal for calibrate rhodium-iron resistance thermometer by few-point schemes in the range 0.5K to 25K
Lin Peng

New cryostat for long stem thermometer calibration in Argon triple point
Miruna Dobre, Yves Hermier

Recent Progress in the Development of Precision Rh-0.5%atFe Thermometers of Chinese Production
Peng Lin, Xing Wei Li, Szmyrka-Grzebyk, L. Lipinski, F. Pavese

Session 10 Radiation Thermometry I
Chair: Pieter Bloembergen

Automated Evaluation of Blackbody Homogeneity With a
Radiation Thermometer and an Automated Calibration Bench with 5 Degrees of Freedom
Igor Pušnik, Andraž Miklavec, Valentin Batagelj, Jovan Bojkovski
Long term drift of radiation thermometers due to interference filters
Wang Li

The Imaging Radiation Thermometry
Cheng Xiaofang, Yang Zangjian, Fu Tairan, Wang Luping
Development of 2 μm InGaAs radiation thermometer
Fumihiro Sakuma, Laina Ma

Session 11 Thermal Measurement
Chair: Jintao. Zhang

Low-temperature Heat Capacity and Standard Thermodynamic Functions of Sodium Pyroantimonate
Zhi-Cheng Tan, Quan Shi, Jun-Ning Zhao, Li-Xian Sun
Study on influences of some factors on the test of periodic heat flow method
XU Xin, CHEN Xiao-ling, ZHOU Jie-min

Reliability of Thermal Imaging in Calculation of Energy Efficiency of Buildings
Igor Pušnik

Experimental System for pvT(x) Properties and Vapor Pressure Measurements of 1,1,1,3,3-Pentafluoropropane
FENG Xiao-juan, FANG Jin, LIN Hong, DUAN Yuan-yuan
Implement of Nonlinearity Correction for Temperature Frequency Characteristic of Quartz Tuning Fork Temperature Sensor
Jun Xu, Bo You, Hongli Wu, Lihua Hu

Session 12 Radiation Thermometry II
Chair: Wang Li

Emissivity Compensated Radiation Thermometry of Silicon Wafers during the Growth of Oxide Films
Tohru Itachi, Atsushi Gogami

Optimization Analysis of Multi-band Pyrometry
Tairan Fu, Xiaofang Cheng, Zangjian Yang
Development of a changeable-aperture blackbody for low temperature standards
Hsin-Yi Ko, Bor-Jiunn Wen
The Study of Objective Lens for Measuring the Size-of-Source Effect in Radiation Thermometer
Lu Xiaofeng, Yuan Zundong, Liu Jie

Tuesday, Oct 22

Session 13 Contact Thermometry
Chair: Ken Hill

An Automated Ice Mantle Maker
YAN Xiaoke, ZHANG Jintao, MA Chongfang, DUAN Yuning

Technology of high precision quartz tuning-fork temperature sensor design based on resonant principle
Jun Xu, Bo You, Lei Ma
The Immersion Profile in a Triple Point of Water Fixed Point Cell for Different SPRTs of the Same Type
Jovan Bojkovski, Valentin Batagelj
The Research of the Auto-test System of Liquid-in-Glass Thermometer Based on Image Recognition

Huang Tao, Xing Zhi-hong, Li Hong-wei, Dong Liang, Sun Yun-fei, Liu Xin

Contribution for a very accurate determination of the water vapor pressure curve

E. GEORGIN, M. ELGOURDOU, C. MARTIN

Session 14 Eutectics II

Chair: Mohamed Sadli

Long-Term Stability of Metal-Carbon Eutectic Fixed-Point Cells

Y. Yamada, Y. Wang

Experimental research on the melting behavior of Pt-C eutectic fixed point affected by thermal history

Wei Dong, Tiejun Wang, Chengyu Bai, Yuanyuan Duan

On the dependence of the structure of eutectic Fe-C on the impurity content and on freezing and annealing conditions in relation to the associated variations in freezing and melting behaviour: Experiments

W. Zheng, P. Bloembergen, Y. Yamada, Y. Wang, T. Wang

A Robust Pd-C Fixed-point for Calibration of Thermocouples

Jonathan Pearce, Graham Machin

Poster Session I

1 Influences of Water Purification on the Triple Point Temperature of Water

YAN Xiaoke, WU Helian, ZHANG Jintao, MA Chongfang, Duan Yuning

2 Equation of Propagation of Uncertainty of Multivariate non-linear Interpolation with Some Applications to Temperature Measurement

Kang Zhi-Ru, Fu Guang-Sheng

3 Evidence of Furnace-related Aluminium Cell Contamination

E. Renaot

4 Development of a thermoelectric scanning system for Type R thermocouples with non pressure controlled heat-pipes

Hiroyasu SATO

5 Investigation of Reproducibility of Freezing Point of Tin

Kazuaki Kodaira

6 Realization of Zinc Fixed Point Cell in NIMT

C. Yaokulbodee, U. Norranim, E. Puttitwong

7 Study of Pt/Pd thermocouples in the temperature range 800 oC up to 1500 oC at the National Institute of Standards NIS-Egypt

M. G. Ahmed and K. Ali

8 Thermal Radiation Effect on SPRT-Measurements at the Aluminium Point

Martin Fahr, Steffen Rudtsch

9 Study on diminishing periodic interference in measurements with laser flash method

10. Improvement on Thermal Diffusivity Measurement
Repeatability of Laser Flash Method
Jianqing Liu, J P Sun, J T Zhang, Y F Chen

11. The study of a new pattern portable thermostatic bath
Jiong Zhang, Huatai Xu, Xingye Xu

12. Thermal Assessment Of Fixed-Point Cell Design By
Numerical Modelling
G. Failleau, V. Le Sant, R. Morice, P. Ridoux

13. The Study of Metadata-based Thermometry Data Sharing Platform
Shi Zhenshan, Song Yanyan, Chu Wei

Poster Session II

1. Investigation of the Radiance Uniformity across the Aperture of High-Temperature Fixed-Points using a camera system
Klaus Anhalt, Jürgen Hartmann, Detlef Lindner, Udo Krüger

2. Quantifying the Temperature Effects of Imperfectly Formed Metal-Ingots in High Temperature Fixed Point Crucibles
Graham Machin, Pablo Castro, Andrew Levick, Miguel Ángel Villamañán

3. Automatic Characterization of Thermoelectric Homogeneity
Jonathan V. Pearce

4. Developments of Infrared Radiation Thermometers
S. F. Tsai, G. W. Lee, S.Y. Wang, M. C. Luo

5. 2-D mathematical modeling for the dilute region of CFBB
Xiaohui Zhang, Baiqian Liu

6. Statistical Methods in Blackbody Sources Compare Calibration
WANG Jing-hui, YUAN Zun-dong

7. Study on Precise Temperature Control of Boiler Based on Neural Network PID
Honglian Li, Xiaoting Li, Jinhai Li, Chao Li

8. The gas controlled heat-pipe in metrology
M. Elgourdou, E. Georgin, C. Martin

9. Development of a Calibration Technique for Laser Interferometric Thermometry of Semiconductors and Dielectrics
A.N. Magunov, B.A.Lapshinov, T.A. Evdokimova, I.V. Chernyshov
10. The Spectral Pyrometry of Gas Discharge Plasmas
N.K. Berezhetskaya 1, I.A. Kossyi 1, A.N. Magunov 2

11. Spectral Pyrometry of Wide Band-Gap Materials Within the Region of Transparency
S.I. Gritsinin, I.A. Kossyi, A.N. Magunov

12. Measurement uncertainties of Multi-band Pyrometry
Tairan Fu, Zangjian Yang, Xiaofang Cheng

Exhibitor Directory

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In Coordination with: Chinese Society for Measurement (CSM)