Thermophysics 2011 - Conference Programme

16th International Meeting of Thermophysical Society

2nd to 4th November 2011 Valtice, Czech Republic Brno University of Technology

Committees

INTERNATONAL SCIENTIFIC COMMITTEE

Rachel Becker, Civil and Environmental Engineering, Technion, Haifa, ISRAEL

Mark Bomberg, L.C. Smith College of Engineering and Computer Science, Syracuse University, Syracuse, U.S.A.

Robert Cerny, Faculty of Civil Engineering CTU, Prague, CZECH REPUBLIC

Dariusz Gawin, Department of Building Physics & Building Materials, Technical University of Lodz, Lodz, POLAND

John Grunewald, Faculty of Architecture, Dresden University of Technology, Dresden, GERMANY

Ulf Hammerschmidt, Physikalisch-Technische Bundesanstalt, Braunschweig, GERMANY **Shuichi Hokoi**, Department of Architecture and Architectural Engineering, Faculty of Engineering, Kyoto University, Kyoto, JAPAN

Ludovit Kubicar, Institute of Physics SAC, Bratislava, SLOVAK REPUBLIC

Xinying Lu, Department of Civil Engineering, Tsinghua University, Beijing, CHINA

Wahid Maref, NRC Institute for Research in Construction, Ottawa, Ontario, CANADA

Peter Matiasovsky, Institute of Construction and Architecture SAC, Bratislava, SLOVAK REPUBLIC

Igor Medved, Faculty of Natural Sciences, Constantine the Philosopher University, Nitra, SLOVAK REPUBLIC

Zbysek Pavlik, FCE CTU, Prague, CZECH REPUBLIC

Carsten Rode, Department of Civil Engineering, Technical University of Denmark, Lyngby, DENMARK

Staf Roels, Department of Civil Engineering, K. U. LEUVEN, Heverlee Leuven, BELGIUM **Bimal Kumar Sarkar**, Department of Physics, School of Advanced Sciences, VIT University VIT University, Vellore, INDIA

Jay Sanjayan, Faculty of Engineering & Industrial Sciences, Swinburne University of Technology, Hawthorn, AUSTRALIA

Henryk Sobczuk, Faculty of Environmental Engineering, Lublin University of Technology, Lublin, POLAND

Oldrich Zmeskal, Faculty of Chemistry BUT, Brno, CZECH REPUBLIC

ORGANIZING COMMITTEE

Oldrich Zmeskal, FCH BUT, Brno, Czech Republic Tomas Bzatek, FCH BUT, Brno, Czech Republic Lenka Dohnalová, FCH BUT, Brno, Czech Republic Zbysek Pavlik, FCE CTU, Prague, Czech Republic Anton Trnik, FNS CPU, Nitra, Slovak Republic Milena Pavlíková, FCE CTU, Prague, Czech Republic Pavla Stefkova, FCH BUT, Brno, Czech Republic Michal Vesely, FCH BUT, Brno, Czech Republic

Conference Programme

WEDNESDAY, NOVEMBER 2, 2011

14:00 Registration

15:00 Conference opening (Ľudovít Kubičár)

15:10 Invited lecture (30 minutes, Introduction of invited speaker: Ľudovít Kubičár) Július Krempaský

The Growth and the Decline of Thermoelectric Measurements

15:40 Lectures (3 x 20 minutes) Hygrothermal performance of building structures and materials, chairman Ľudovít Kubičár

Kamil Ďurana, Tomáš Korecký, Miroslava Lapková, Jan Toman, Robert Černý

Effect of temperature on liquid water transport in autoclaved aerated concrete (to 16:00)

Václav Kočí, Jan Kočí, Jiří Maděra, Robert Černý, Xinying Lu

Computational analysis of energy efficiency of selected building envelopes provided with thermal insulation systems (to 16:20)

Jozef Kováč, Anton Trník, Igor Medveď

Fly-ash influence on the thermal diffusivity of ceramic samples (to 16:40)

16:40 COFFEE BREAK (20 minutes)

17:00 Lectures (3 x 20 minutes) Thermal performance and material properties, chairman Bimal Kumar Sarkar

Dominika Trefon-Radziejewska, Jerzy Bodzenta

Investigation of thermal diffusivity dependence on temperature of pure and doped YVO4 single crystals by thermal wave method (to 17:20)

Marcin Gapski, Piotr Koniorczyk, Janusz Zmywaczyk

Estimation of thermophysical parameters of polytetrafluoroethylene (PTFE) by a hybrid method (to 17:40)

Dariusz Gawin, Francesco Pesavento

Simplified and full mathematical models of concrete degradation during slow heating to high temperature- a comparative study (to 18:00)

18:00 DINNER

THURSDAY, NOVEMBER 3, 2011

7:30 BREAKFAST

9:00 Invited lecture (30 minutes, Introduction of invited speaker: Anton Trnik)

B. K. Sarkar, Deviprasadh P S, A. S. Verma, Sheetal Sharma, V. K. Jindal

Photoacoustic Spectroscopy: A tool for the investigation of thermal and optical properties of solids

9:30 Lectures (4 x 20 minutes) Thermal performance and material properties, chairman Anton Trník

Jana Moravčíková, Ján Ondruška, Anton Trník, Igor Medveď

Isothermal dilatometric study of sintering in electroceramics (to 9:50)

Vratislav Tydlitát, Jan Zakoutský, Robert Černý

Theoretical Analysis of Sensitivity of Heat Flow Sensor in Isothermal Calorimeter (to 10:10)

Ivan Christov, Gabriela Pavlendová, Juraj Veselský

Dilatometer used for Measurements in Building Materials Testing (to 10:30)

Vlastimil Boháč, Peter Dieška, Ľ. Kubičár, V. Vretenár

Pulse transient model for finite size of cuboid samples tested on stone materials (to 10:50) **10:50 COFFEE BREAK (20 minutes)**

11:10 Lectures (5 x 20 minutes) Thermal performance and material properties, chairman Oldřich Zmeškal

Viliam Vretenár, Ľudovít Kubičár, Vlastimil Boháč and Peter Dieška

New Hot ring method for thermophysical parameters measurement: preliminary results and analysis (to 11:30)

Daniel Kopkáně, Karel Trojan, Jaroslav Nováček

Properties study of reflexive thermal-insulation multilayer for external constructions (to 11:50)

Stanislav Šťastník, Jiří Vala, Karel Trojan

Energy demand for building objects with controlled interior temperature (to 12:10)

Ivan Baník, Jozefa Lukovičová, Gabriela Pavlendová

Crystallization processes in disordered materials and Meyer-Neldel rule (to 12:30)

Oldrich Zmeskal, Lenka Dohnalova, Pavla Stefkova

Using of multi-parametric non-linear regression method based on step wise measurements for determining of thermal parameters of phase change materials (to 12:50)

13:00 LUNCH

14:30 CULTURAL PROGRAMME – visit to Valtice Underground (<u>Valtické podzemí</u>) 19:00 SOCIAL PROGRAMME - conference dinner and wine testing

FRIDAY, NOVEMBER 4, 2011

7:30 BREAKFAST

9:00 Invited lecture (30 minutes, Introduction of invited speaker: Zbysek Pavlik) Ulf Hammerschmidt

Propagation of Heat in a Saturated Porous Medium: Sander Sandstone

9:30 Lectures (3 x 20 minutes) Moisture related problems, chairman Zbysek Pavlik Danica Fidríková , Ľudovít Kubičár

Comparison of water transport in the sandstones with different porosity (to 9:50)

Olga Koronthalyova, Peter Matiasovsky, Juraj Veselsky, Daniel Szabo

Hysteretic effects ofmoisture storage of calcium silicate insulation boards (to 10:10)

T. Palszegi and M. Holubek

Effective permittivity modelling of lime-cement perlite plaster (to 10:30)

10:30 COFFEE BREAK (20 minutes)

10:50 Lectures (3 x 20 minutes) Moisture related problems, chairman Igor Medved Ľudovít Kubičár, Danica Fidriková, Viliam Vretenár, Ján Vlčko, Vladimír Greif, Martin Brček, Ivana Šimková

Monitoring of temperature-moisture regime of rock massive at SpisCastle (to 11:10)

Jan Kočí, Jiří Maděra, Zbyšek Pavlík, Eva Vejmelková, Robert Černý

A Transient Analysis of Water Vapor Transport in Porous Materials in Dependence on Relative Humidity (to 11:30)

Peter Mihalka, Peter Matiasovsky, Bozena Vasilkovova

Sorption hysteresis of lightweight carbonate plasters (to 11:50)

12:00 LUNCH

13:00 MEETING OF THERMOPHYSICAL SOCIETY

List of participants

Prof. RNDr. Ivan Baník Ph.D.

Slovak University of Technology Faculty of Civil Engineering Radlinského 11 813 68 Bratislava SLOVAKIA

Ing. Vlastimil Boháč CSc.

Slovak Academy of Sciences Institute of Physics, SAS Dúbravská cesta 9 845 11 Bratislava 45 SLOVAKIA

Prof. Ing. Robert Černý, DrSc.

Czech Technical University Faculty of Civil Engineering Thákurova 7 16629 Prague CZECH REPUBLIC

Ing. Danica Fidríková

Slovak Academy of Sciences Institute of Physics Dúbravská cesta 9 84511 Bratislava SLOVAKIA

MSc. Marcin Gapski, PhD student

Wojskowa Akademia Techniczna Faculty of Mechatronics Kaliskiego 2 00-908 Warsaw POLAND

D.Sc. Darius Gawin Ph.D., M.E.

Technical University of Lodz Department of Building Physics & Building Materials Al. Politechniki 6 90-590 Lodz POLAND

Mgr. Matúš Holúbek

Slovak University of Technology Faculty of Civil Engineering Radlinského 11 813 68 Bratislava SLOVAKIA

Ing. Jan Kočí

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

Ing. Václav Kočí

Czech Technical University Faculty of Civil Engineering Thákurova 7 16629 Prague 6 CZECH REPUBLIC

Assoc. Prof. Piotr Koniorczyk, Ph.D., DSc., Eng.

Military University of Technology Institute of Aviation Technology Kaliskiego 2 00-908 Warsaw POLAND

Ing. Daniel Kopkáně

Brno University of Technology Faculty of Civil Engineering Veveří 95 60200 Brno CZECH REPUBLIC

Ing. Tomáš Korecký

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

prom. fyz. Ol'ga Koronthályová CSc.

Slovak Academy of Sciences Institute of Construction and Architecture Dubravska cesta 9 845 03 Bratislava SLOVAKIA

Mgr. Jozef Kováč

Constantine the Philosopher University Tr. A. Hlinku 1 949 74 Nitra SLOVAKIA

Ing. Ludovít Kubičár, DrSc.

Slovak Academy of Sciences Institute of Physics SAS Dubravska cesta 9 845 11 Bratislava SLOVAKIA

Ing. Peter Matiašovský, CSc.

Slovak Academy of Sciences Institute of Construction and Architecture Dúbravská cesta 9 845 03 Bratislava 45 SLOVAKIA

doc. RNDr. Igor Medved, Ph.D.

Constantine the Philosopher University Faculty of Natural Sciences Tr. A. Hlinku 1 94974 Nitra SLOVAKIA

Ing. Peter Mihálka, PhD.

Slovak Academy of Sciences Institute of Construction and Architecture Dubravska cesta 9 845 03 Bratislava SLOVAKIA

Mgr. Ján Ondruška, PhD.

Constantine the Philosopher University Faculty of Natural Sciences Tr. A. Hlinku 1 94974 Nitra SLOVAKIA

Ing. Gabriela Pavlendová Ph.D.

Slovak University of Technology Faculty of Civil Engineering Radlinského 11 813 68 Bratislava SLOVAKIA

doc. Ing. Zbyšek Pavlík, Ph.D.

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

Prof. Mgr. Jan Toman, DrSc.

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

RNDr. Anton Trník, Ph.D.

Constantine the Philosopher University Faculty of Natural Sciences Tr. A Hlinku 1 94974 Nitra SLOVAKIA

Prof. Ing. Jiří Vala, CSc.

Brno University of Technology Faculty of Civil Engineering Žižkova 17 60200 Brno CZECH REPUBLIC

Ing. Eva Vejmelková, Ph.D.

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

Ing. Viliam Vretenár, PhD.

Slovak Academy of Sciences Institute of Physics Dúbravská cesta 9 84511 Bratislava SLOVAKIA

Assoc. Prof. Janusz Zmywaczyk, Ph.D

Military University of Technology Faculty of Mechatronics Kaliskiego 2 00-908 Warsaw POLAND

Ing. Tereza Kulovaná

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

Ing. Miloš Jerman, PhD.

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

Ing. Miroslava Lapková

Czech Technical University Faculty of Civil Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

RNDr. Vratislav Tydlitát, CSc.

Czech Technical University Faculty of Engineering Thákurova 7 166 29 Prague 6 CZECH REPUBLIC

doc. Ing. Juraj Veselský, PhD.

Slovak University of Technology Faculty of Civil Engineering Radlinského 11 813 68 Bratislava SLOVAKIA

Dr. Ulf Hammerschmidt, Dipl. Phys.

Physikalisch-Technische Bundesanstalt 1.74 Bundesallee 100 38 116 Braunschweig GERMANY

Prof. Henryk Sobczuk, Ph.D.

Lublin University of Technology Faculty of Environmental Enginering ul. Nadbystrzycka 40B 20-618 Lublin, POLAND

Dominika Trefon-Radziejewska, MSc.

Silesian University of Technology Institute of Physics Krzywoustego 2 44-100 Gliwice POLAND

prof. RNDr. Július Krempaský, DrSc.

Slovak University of Technology Faculty of Electrical Engineering and Information Technology 812 19 Ilkovičova 3 Bratislava SLOVAKIA

Prof. Bimal K. Sarkar, Ph.D.

VIT University Department of Physics Vellore 632014 632014 Tamil Nadu INDIA

Prof. Ing. Oldrich Zmeskal, CSc.

Brno University of Technology Faculty of Chemistry Purkynova 118 612 00 Brno CZECH REPUBLIC

Ing. Lenka Dohnalova

Brno University of Technology Faculty of chemistry Purkynova 118 612 00 Brno CZECH REPUBLIC

Ing. Jaroslav Novacek

Brno University of Technology Faculty of Civil Engineering Veveri 95 60200 Brno CZECH REPUBLIC

Papers that were not presented within the conference program will be published in the
conference proceedings as well as presented papers.