



# Central European Symposium on Thermophysics (CEST 2023)

September 6<sup>th</sup> – September 8<sup>th</sup>, 2023, Tatra hotel, Poprad, Slovakia

## Conference programme

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***Wednesday, September 6<sup>th</sup>, 2023***

*13:30 – 14:30 Conference registration*

*13:30 – 14:30 Lunch*

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*14:50 Conference opening*

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*15:00 Invited lecture (30 minutes)*

*chairman: Anton Trník*

**Christ Glorieux**

PHOTOTHERMAL AND PHOTOACOUSTIC EXPLORATION OF RELAXATION IN SUPERCOOLED LIQUIDS

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*15:30 Lectures (4 × 20 minutes)*

*chairman: Anton Trník*

**Václav Kočí, Robert Černý, and Martin Keppert**

REACTION KINETICS OF BASALTIC ELEMENTS IN CEMENTITIOUS MATRICES: THEORETICAL CONSIDERATIONS

**Petr Hotěk, Lukáš Fiala, and Robert Černý**

THERMOELECTRIC PROPERTIES OF METASHALE GEOPOLYMER MORTAR DOPED WITH GRAPHITE POWDER

**Štefan Csáki, Omar Al-Shantir, Marek Vrabec, and Anton Trník**

AC CONDUCTIVITY OF C130 TYPE ELECTROPORCELAIN AS A FUNCTION OF FIRING TEMPERATURE AND  
COMPACTION PRESSURE

**Lenka Scheinherrova, Jitka Krejsová, Michal Beneš, Milan Šteffek, and Robert Černý**

LABORATORY SYNTHESIS OF C<sub>3</sub>A ON THE KILOGRAM SCALE: PRELIMINARY RESULTS

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*16:50 Coffee break (20 minutes)*

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*17:10 Lectures (4 × 20 minutes)*

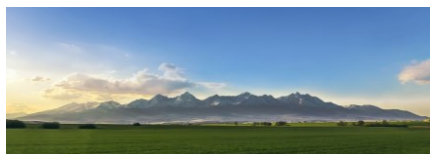
*chairman: Ján Ondruška*

**Przemysław Brzyski, Mateusz Józwiak, Jakub Siwiec, Maris Sinka, and Igor Medved'**

INFLUENCE OF COMPACTION DIRECTION ON SELECTED THERMAL AND MOISTURE PROPERTIES OF A  
LIGHTWEIGHT COMPOSITE BASED ON MAGNESIUM BINDER AND ORGANIC FILLER

**Dariusz Majerek, Elżbieta Woško, Magdalena Paśnikowska-Lukaszuk, Ewa Łazuka, Zbigniew Suchorab,  
Grzegorz Łagód**

APPLICATION OF AUTOMATIC IMAGE ANALYSIS TO EVALUATE THE ANISOTROPY OF AUTOCLAVED AERATED  
CONCRETE FOR MOISTURE TRANSPORT



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**Zbigniew Suchorab, Krzysztof Tabiś, Zenon Szczepaniak, Magdalena Paśnikowska-Lukaszuk, and Waldemar Susek**

COMPARISON OF MICROWAVE MOISTURE EVALUATION QUALITY IN TIME AND FREQUENCY DOMAIN

**Magdalena Paśnikowska-Lukaszuk, Jacek Zaburko, Magda Wlazło, Joanna Szulzyk-Cieplak, and Zbigniew Suchorab**

ESTIMATION OF APPARENT PERMITTIVITY VALUE OF POLYLACTYDE POLYMERS USING REFLECTOMETRIC TECHNIQUE

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*19:00 Dinner*

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*Thursday, September 7<sup>th</sup>, 2023*

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*9:00 Invited lecture (30 minutes)*

*chairman: Zbigniew Suchorab*

**Piotr Koniorczyk and Mateusz Zieliński**

SOME PROBLEMS RELATED TO THERMOPHYSICAL PROPERTIES OF SELECTED BARREL STEELS

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*9:30 Lectures (4 × 20 minutes)*

*chairman: Zbigniew Suchorab*

**Mateusz Zieliński and Piotr Koniorczyk**

THERMAL DIFFUSIVITY AND THERMAL EXPANSION INVESTIGATIONS OF WLW STEEL

**Martin Keppert, Vojtěch Pommer, Kateřina Šádková, Dana Koňáková, Eva Vejmelková, and Robert Černý**

PHYSICAL PROPERTIES OF ALKALI ACTIVATED ALUMINOSILICATES BASED ON LOW-REACTIVITY CERAMICS IN ROOM TEMPERATURE CONDITIONS

**Ján Ondruška, Omar Al-Shantir, and Igor Stubňa**

THERMODYNAMICS OF QUARTZ PORCELAIN MIXTURE UNDER TENSILE LOADING

**Klára Kobetičová, Jana Nábělková, Viktor Brejcha, Jiří Brich, Martin Böhm, and Robert Černý**

VIABILITY OF YEASTS AFTER EXPOSURE TO FLAX-FIBER BASED COMPOSITE MATERIALS

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*10:50 Coffee break (20 minutes)*

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*11:10 Lectures (4 × 20 minutes)*

*chairman: Igor Medved'*

**Magdalena Jastrzębska, Anna Futa, and Zbigniew Suchorab**

THE LINEAR REGRESSION MODEL TO EVALUATE MATERIAL MOISTURE USING REFLECTOMETRIC TECHNIQUE

**Anna Futa, Magdalena Jastrzębska, and Zbigniew Suchorab**

COMPARISON OF REGRESSION MODELS OF LINEAR AND POLYNOMIAL DEPENDENCIES IN MOISTURE DETECTION TECHNIQUE

**Agnieszka Żelazna**

THE EFFECT OF DESIGN PARAMETERS OF SOLAR COLLECTOR INSTALLATION ON ITS ENERGETIC, ECONOMIC AND ENVIRONMENTAL EFFICIENCY

**Grzegorz Łagód, Magdalena Pilat-Rożek, Dariusz Majerek, Ewa Łazuka, Vaclav Koci, and Robert Černý**

APPLICATION OF KOHONEN SELF-ORGANIZING MAPS WITH BOUNDARIES DETERMINED BY WARD CLUSTERING ALGORITHM FOR ANALYSIS OF MULTIDIMENSIONAL DATA FROM GAS SENSORS ARRAY ANALYZING THE MOLD THREAT OF BUILDINGS

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*12:30 Lunch*

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*14:00 Poster section*

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**Anatoliy Taran, Oleksandr Kyslytsyn, Oksana Podshyvalova, Svitlana Taran, and Andriy Okhrimovckyy**

THERMAL VACUUM EVAPORATION PECULIARITIES OF PEROVSKITE-TYPE BARIUM-STRONTIUM HAFNATE

**Piotr Kosiński and Adam Startek**

MOISTURE TRANSPORT IN LOOSE FIBROUS INSULATIONS SUBJECTED TO AIR FILTRATION

**Jaroslav Pokorný and Radek Ševčík**

THE INFLUENCE OF GRAPHENE ADMIXTURE ON STRENGTH PROPERTIES OF CEMENT-BASED COMPOSITES

**Svetozár Malinarič**

EVALUATION OF TRANSIENT MEASUREMENTS OF THERMOPHYSICAL PARAMETERS USING FINITE ELEMENTS METHOD

**Klára Kobetičová, Jana Nábělková, Viktor Brejcha, Jiří Brich, Martin Böhm, and Robert Černý**

RESISTANCE TO MOLDS OF FLAX-FIBER BASED MATERIALS

**Joanna Szulzyk-Cieplak, Daniel Oborski, Magdalena Paśnikowska-Łukaszuk, Magda Wlazło, Arkadiusz Urzędowski, and Jacek Zaborko**

THE INFLUENCE OF THE COOLING SYSTEM ON THE EFFICIENCY OF THERMAL MANAGEMENT AND THE PERFORMANCE OF COMPUTER COMPONENTS



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**Václav Kočí, Martin Keppert, and Robert Černý**

DETERIORATION OF BASALT-BASED REINFORCEMENT IN CORROSIVE ENVIRONMENTS: EXPERIMENTAL MONITORING AND MATHEMATICAL MODELS

**Eva Vejmelková, Dana Koňáková, Vojtěch Pommer, and Kateřina Šádková**

THE POSSIBILITY OF THERMAL ACTIVATION OF BENTONITIC CLAYS: IMPACT OF TEMPERATURE

**Eva Vejmelková, Vojtěch Pommer, Kateřina Šádková, and Dana Koňáková**

THE NATURE OF KAOLINITIC CLAYS AND THEIR IMPACT ON THE PERFORMANCE OF SCM

**Jacek Zaborko, Arkadiusz Urzędowski, Joanna Szulzyk-Cieplak, Anton Trník, Magdalena Paśnikowska-Łukaszuk, Magda Wlazło, and Grzegorz Łagód**

ANALYSIS OF THE POSSIBILITY OF REUSING WASTE MATERIALS FROM 3D PRINTING

**Edyta Wojtaś, Justyna Kujawska, Grzegorz Łagód, and Zbigniew Suchorab**

MEASUREMENT OF SALINITY IN BUILDING MATERIALS: A SYNOPSIS OF CURRENT PRACTICES AND POTENTIAL INNOVATIONS

**Krzysztof Tabiś, Zbigniew Suchorab, Zenon Szczepaniak, Dariusz Majerek, T Rogala, M Kniola, and W Susek**

CALIBRATION OF MICROWAVE ANTENNA FOR POROUS MATERIALS MOISTURE EVALUATION USING FREQUENCY DOMAIN ANALYSIS

**Anna Badora, Edyta Wojtaś, and Zbigniew Suchorab**

THE USE OF MULTI-SENSOR ARRAYS FOR EARLY DETECTION OF INDOOR AIR POLLUTION CAUSED BY MOULD

**Igor Medved', Michal Kuruc, Tibor Kovács, Anton Trník**

DECONVOLUTION OF DSC PEAKS OF HIGH-TEMPERATURE PHASES IN AN ILLITE/SMECTITE-CACA<sub>3</sub> MIXTURE

**Magda Wlazło, Magdalena Paśnikowska-Łukaszuk, Joanna Szulzyk-Cieplak, Jacek Zaborko, Zbigniew Suchorab, and Łukasz Guz**

APPLICATION OF NUMERICAL MODELLING TO EVALUATE THE INFLUENCE OF SMOKE EXTRACTION FLAPS ON FIRE SAFETY OF THE BUILDINGS

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*16:00 Cultural programme*

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*19:00 Conference dinner*

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***Friday, September 8<sup>th</sup>, 2023***

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***9:20 Lectures (4 × 20 minutes)***

***chairman: Štefan Csáki***

**Szabolcs Szekeres**

ANALYSIS OF INDOOR AIR PARAMETERS IN THE OCCUPIED ZONE



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**Attila Kostyák**

INDIRECT EVAPORATIVE COOLING PRIMARY AND SECONDARY EFFECTS FOR THE COOLING ENERGY  
CONSUMPTION OF THE AIR HANDLING UNITS

**Alagba Henry Eze and Ákos Lakatos**

APPLICATIONS OF THERMAL INSULATION MATERIALS BY AIRCRAFT

**Goran Bulatovič and Peter Bokes**

QUASI-ONE-DIMENSIONAL TREATMENT OF HEAT TRANSFER IN BEAMS OF NON-UNIFORM CROSS-SECTION

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*10:40 Coffee break (20 minutes)*

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*11:00 Lectures (3 × 20 minutes)*

*chairman: Anton Trník*

**Omar Al-Shantir, Marrku Ruokanen, Marek Vrabec, Štefan Csáki, Dominika Mikušová, František Lukáč,  
and Anton Trník**

DEPENDENCE OF MECHANICAL PROPERTIES OF ELECTROPORCELAIN ON QUARTZ PARTICLE SIZE SUBJECTED TO  
CYCLIC TESTS

**Dominika Mikušová, Tomáš Húlan, František Lukáč, Štefan Csáki, and Anton Trník**

STUDY OF THE ILLITE-KAOLINITE-CACO<sub>3</sub> MIXTURES DURING FIRING

**Tibor Kovács and Anton Trník**

YOUNG'S MODULUS OF ELASTICITY OF ILLITIC CLAY AND CACO<sub>3</sub> MIXTURES DURING THERMAL TREATMENT UP  
TO 1100 °C

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*12:00 Closing ceremony*

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*12:10 Lunch*

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