



Central European Symposium on Thermophysics (CEST 2022)

August 31st – September 2nd, 2022, Hotel Flora, Olomouc, Czech Republic

Conference programme

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Wednesday, August 31st, 2022

13:00 – 14:30 Conference registration

13:00 – 14:30 Lunch

14:45 Conference opening

15:00 Invited lecture (30 minutes)

chairman: Anton Trník

Andrei Rotaru

RECENT DEVELOPMENTS IN NON-ISOTHERMAL KINETICS OF HETEROGENEOUS PROCESSES

15:30 Lectures (4 × 20 minutes)

chairman: Anton Trník

Piotr Łapka, Fabian Dietrich, Piotr Furmański, Łukasz Cieřlikiewicz, Maris Sinka, and Diana Bajare

METHOD FOR PREDICTION OF THERMAL CONDUCTIVITY OF BIO-BASED BUILDING COMPOSITES ENHANCED WITH MICROENCAPSULATED PCM

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

HYDRATION KINETICS OF BLENDED CEMENTS FOR APPLICATION WITH BASALT REINFORCEMENT

Štefan Csáki, Ivana Sunitrová, Grzegorz Łagód, and Anton Trník

THERMOPHYSICAL AND ELECTRICAL PROPERTIES OF A NATURAL ZEOLITE

Jan Kočí

PREDICTION OF THERMAL PERFORMANCE OF BUILDING WALLS BASED ON VARIATION OF SELECTED PARAMETERS

16:50 Coffee break (20 minutes)

17:10 Lectures (5 × 20 minutes)

chairman: Zbigniew Suchorab

Václav Kočí and Jiří Maděra

SENSITIVITY ANALYSIS OF MATHEMATICAL MODEL FOR DESCRIPTION OF RADIONUCLIDES TRANSPORT

Grzegorz Łagód, Dariusz Majerek, Vaclav Kočí, and Robert Černý

APPLICATION OF RANDOM FOREST METHOD FOR ANALYSIS OF GAS SENSOR READOUTS FROM MOLD-THREATENED BUILDINGS

Petr Hotěk, Lukáš Fiala, Wei-Ting Lin, and Robert Černý

METAKAOLIN COMPOSITE WITH GRAPHITE POWDER: MATERIAL CHARACTERIZATION FOR SELF-HEATING POTENTIAL EVALUATION



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A. E. Kabeel and Mohamed Abdelgaied

OPTIMIZED NUMBER OF MULTI-STAGE SPIRAL-WOUND REVERSE OSMOSIS CONNECTED IN SERIES TO
ACHIEVES MINIMUM POWER CONSUMPTIONS

**S. A. El-Agouz, Mohamed E. Zayed, Ali M. Abo Ghazala, Ayman Refat Abd Elbar, M. Y. Zakaria, and
Khaled Khodary Ismaeil**

PERFORMANCE ASSESSMENT OF SOLAR-POWERED MEMBRANE DESALINATION SYSTEM: A THEORETICAL
MODELING APPROACH UNDER DIFFERENT OPERATING CONDITIONS

19:00 Dinner

Thursday, September 1st, 2022

9:00 Invited lecture (30 minutes)

chairman: Martin Keppert

Willi Pabst, Eva Gregorová, and Petra Šimonová

THE IMPULSE EXCITATION TECHNIQUE AND ITS USE FOR MONITORING SINTERING PROCESSES

9:30 Lectures (4 × 20 minutes)

chairman: Martin Keppert

Przemysław Brzyski and Zbigniew Suchorab

THE EFFECT OF GUM ARABIC ADMIXTURE ON THE MOISTURE PROPERTIES OF HEMP-LIME COMPOSITE

Piotr Kosiński, Piotr Parzych, and Filip Domzalski

THE SILICONE PLASTER WATER ABSORPTIVITY UNDER CLIMATE LOAD

**Zbigniew Suchorab, Zenon Szczepaniak, Krzysztof Tabiś, Grzegorz Łagód, Przemysław Brzyski, and
Tomasz Rogala**

COMPARISON OF REFLECTOMETRIC AND MICROWAVE MOISTURE DETECTION TECHNIQUES

Igor Medved' and Robert Černý

PREDICTION OF MOISTURE DIFFUSIVITY OF CERAMIC BRICKS FROM PORE SIZE DISTRIBUTION

10:50 Coffee break (20 minutes)



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11:10 Lectures (4 × 20 minutes)

chairman: Igor Medved'

Lenka Scheinherrová, Magdaléna Doleželová, and Eva Vejmelková

COMPOSITION CHANGES OF AERIAL LIME BINDERS WITH WASTE BRICK POWDER: INFLUENCE OF DIFFERENT DRYING TECHNIQUES

Michal Matějka, Zdeněk Veselý, and Jiří Tesar

POSSIBILITIES OF NON-CONTACT TEMPERATURE MEASUREMENT IN ADDITIVE DIRECT METAL LASER SINTERING TECHNOLOGY

Klára Kobetičová, Miloš Jerman, and Robert Černý

VERIFICATION OF ECOTOXICOLOGICAL POTENTIAL OF SODIUM LIGNOSULFONATE USABLE IN CIVIL ENGINEERING

Anatoliy Taran, Oleksandr Kyslytsyn, Mykola Nechiporuk, Oksana Podshyvalova,

Andriy Okhrimovskyy, and Svitlana Taran

MASS TRANSFER IN COMPOSITES BASED ON $BA_xSR_{1-x}HFO_3$ WITH TUNGSTEN AT LARGE TEMPERATURE GRADIENTS

12:30 Lunch

14:00 Poster section

Tomáš Húlan, Dominika Mikušová, František Chmelík, Patrik Dobroň, Michal Knapek, Štefan Csáki, Anton Trník

THE STUDY OF THE FIRING PROCESS OF QUARTZ-CONTAINING CERAMICS BASED ON ILLITE, KAOLINITE, AND $CaCO_3$

Štefan Csáki, Tomáš Húlan, František Lukáč, Jakub Veverka, Michal Knapek

ADVANCED SINTERING OF ANORTHITE CERAMICS

Štefan Csáki, Igor Štubňa, Tiit Kaljuvee, Patrik Dobroň, František Lukáč, Anton Trník

ANORTHITE CERAMICS PREPARED FROM ILLITIC CLAY AND OIL SHALE ASH

Mohamed Abdelgaied and A. E. Kabeel

PERFORMANCE IMPROVEMENT OF PHOTOVOLTAIC/THERMAL PANELS-POWERED RO DESALINATION UNIT USING GEOTHERMAL ENERGY AS PREHEATING UNIT

Jan Fořt, Martin Mildner, Lenka Scheinherrová, Jiří Šál, and Martin Keppert

VALORIZATION OF FRESHWATER SEDIMENTS THROUGH THERMAL TREATMENT FOR ALKALI ACTIVATION

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

CHARACTERIZATION OF LOW-CEMENT HEAT RESISTANT BINDER WITH HIGH ALUMINA CONTENT

Klára Kobetičová, Jan Fořt, and Robert Černý

TOXIC AND BIODEGRADATION POTENTIAL OF WASTE TIRES FOR MICROORGANISMS



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Kateřina Šádková, Dana Koňáková, Eva Vejmelková, Vojtěch Pommer, Wei-Ting Lin, and

Robert Černý

EFFECT OF HEATING TEMPERATURE ON THE PROPERTIES OF LOW-CEMENT HEAT RESISTANT COMPOSITES

Svetozár Malinarič

NEW APPROACH TO TRANSIENT METHODS OF THERMAL CONDUCTIVITY AND DIFFUSIVITY MEASUREMENT

Magdalena Pańnikowska-Lukaszuk and Arkadiusz Urzędowski

DAILY ANALYSIS OF BOILER STEAM PARAMETERS IN TERMS OF WEATHER CONDITIONS

Peter Pős, Ján Ondruška, Martin Keppert, and Anton Trník

DIRECTIONAL THERMAL EXPANSION OF ILLITE/SMECTITE-WASTE GLASS MIXTURES

Zenon Szczepaniak, Waldemar Susek, Tomasz Rogala, Zbigniew Suchorab, and Krzysztof Tabiś

APPLICATION OF MICROWAVE TECHNIQUES FOR ESTIMATION OF BUILDING MATERIALS HUMIDITY

Krzysztof Tabiś, Zbigniew Suchorab, Zenon Szczepaniak, Tomasz Rogala, Grzegorz Łagód,

Przemysław Brzyski, and Kamil Pluta

THE INFLUENCE OF SALT IONS ON MASONRY MOISTURE READOUTS USING THE MICROWAVE TECHNIQUE

Daniel Urbán, Vojtech Chmelík, Lukáš Zelem, and Monika Rychtáriková

IMPACT OF FACE MASKS AND SHIELD PROTECTION ON VOCAL EFFORT OF SPEAKING PERSON

Arkadiusz Urzędowski, Jacek Zaborko, Magdalena Pańnikowska-Lukaszuk,

and Joanna Szulżyk-Cieplak

ANALYSIS OF CHANGES IN THERMAL PARAMETERS OF NON-INSULATED TECHNICAL BUILDINGS TO THERMAL

COMFORT IN BUILDING INFORMATION MODELLING

Jacek Zaborko, Arkadiusz Urzędowski, Joanna Szulżyk-Cieplak, Anton Trník, Zbigniew Suchorab,

Michał Staniszewski, and Grzegorz Łagód

ANALYSIS OF SELECTED MECHANICAL PROPERTIES OF 3D PRINTOUTS FROM POPULAR COMPOSITE

MATERIALS

16:00 Cultural programme

19:00 Conference dinner

Friday, September 2nd, 2022

9:20 Lectures (4 × 20 minutes)

chairman: Štefan Csáki

Goran Bulatovič and Peter Bokes

NUMERICAL EVALUATION OF ANISOTROPIC THERMAL CONDUCTIVITY MODEL OF A FOIL WINDING WITH A PARTIAL COOLING DUCT



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Michal Kuruc, Miroslav Čekon, Jakub Čurpek, Richard Slávik, and Igor Medved'

SPECTRAL TEST METHOD FOR LIGHT TRANSMITTANCE OF TRANSPARENT BUILDING COMPONENTS USING DIFFERENT ARTIFICIAL RADIATION SOURCES

Ján Ondruška, Igor Štubňa, and Martin Keppert

EFFECT OF DIFFERENT GLASS GRANULARITY ON THERMOMECHANICAL AND ELECTRICAL PROPERTIES OF ILLITIC CERAMICS

Tomáš Húlan, Jakub Kušnír, Michal Knapěk, and Igor Štubňa

EFFECT OF QUARTZ AMOUNT AND SIZE ON DIMENSION CHANGES OF ILLITE-BASED CERAMICS DURING FIRING

10:40 Coffee break (20 minutes)

11:00 Lectures (4 × 20 minutes)

chairman: Anton Trník

Omar Al-Shantir, Markku Ruokanen, Marek Vrabec, Dominika Mikušová, and Anton Trník

INFLUENCE OF QUARTZ ON MECHANICAL PROPERTIES OF ELECTROPORCELAIN SUBJECTED TO A CYCLIC TEST

Marek Mánik, Michal Kuruc, and Igor Medved'

DIFFUSION OF WATER VAPOR THROUGH DIFFERENT TYPES OF EPS

Dmytro Nosov and Anton Trník

THERMODYNAMIC STUDY OF HIGH-TEMPERATURE REACTIONS IN ILLITIC CLAY AND CaCO₃ MIXTURE IN ANORTHITE STOICHIOMETRY

Tibor Kovács and Anton Trník

THERMAL EXPANSION OF ILLITIC CLAY AND CaCO₃ MIXTURES DURING THERMAL TREATMENT UP TO 1200 °C

12:20 Closing ceremony

12:30 Lunch
