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Cracow University
of Technology



WELCOME TO
POLAND



Faculty of Civil
Engineering



Faculty of Materials
Engineering and Physics



Nantes Université
IUT Saint Nazaire
GeM Institute

Welcome to Poland

MATBUD'2023

10th Scientific-Technical Conference on
Material Problems in Civil Engineering



**Conference
programme**

12:00 – 13:00 Conference opening ceremony**13:00 – 14.00** Introductory session

Keynote paper *Professor Gilles Pijaudier-Cabot, Université de Pau et des Pays de l'Adour*

Keynote paper *Professor Arezki Tagnit-Hamou, University of Sherbrooke*

14:00-15:00 **Lunch**

15:00 – 16:30 Session I: Innovative materials and casting technologies

ID138 Surface Modification of Photocatalytic Cementitious Composites with Polyacrylic Superabsorbent Polymers (SAP) – [M. Kalinowski](#), [P. Woyciechowski](#), and [W. Jackiewicz-Rek](#)

ID123 The Influence of Casting Static Compaction Pressure on Carbonated Reactive Magnesia Cement (CRMC)-Based Mortars – [E. Grunhauser Soares](#), [J. Castro-Gomes](#) and [M. Magrinho](#)

ID109 The Influence of the Ageing Process on the Mechanical Properties of Cement Mortars with Nano-SiO₂ Admixture Initially Subjected to Thermal Treatment – [E. Horszczaruk](#), [P. Łukowski](#)

ID125 Early-Age Creep and Shrinkage Properties of Printed and Cast Cement Composite – [R. Gaillitis](#), [Pudans](#), [K. Ziemelis](#), [G. Bumanis](#), [A. Sprince](#)

ID111 Three-Dimensional, Printable Paving Stone: A Preliminary Study – [V. Arslan](#), [Z. Dogan](#)

ID117 Investigation of the Electrical Properties of Graphene-Reinforced Geopolymer Composites – [R.S Krishna](#), [S. Saha](#), [K. Korniejenko](#), [T. S. Qureshi](#), [S. M. Mustakim](#)

16:30 – 17:00 **Coffee break**

17:00 – 18:00 Session II: Transport properties of mineral binders

- ID145 Physico-Chemical Modelling of Chloride Migration in Cement-Based Materials Considering Electrode Processes – *Z.E. Kribes, R. Cherif, A. Ait-Mokhtar*
- ID140 The Effect of Preconditioning Temperature on Gas Permeability of Alkali-Activated Concretes – *P. Duży, M. Choinska Colombel, I. Hager, O. Amiri*
- ID110 About Gas Permeability and Diffusion through Concrete – *T. Lamouchi, S. Levasseur, L. Potier, T. Dubois, F. Skoczylas*
- ID101 Effect of Low-Quality Calcined Clay on the Suppression of the Alkali-Silica Reaction – *D. Jóźwiak-Niedźwiedzka, R. Jaskulski, K. Dziedzic, A. Antolik*
- 18:15 **Cultural moment at Campus of Cracow University of Technology**

DAY 2 20 April 2023, Thursday

9:00 – 10:15 Session III: Mining and construction demolition wastes management

- ID127 Potential Use of Construction Waste for the Production of Geopolymers: A Review – *L. Radina, A. Sprince, L. Pakrastins, R. Gailitis and G. Sakale*
- ID139 Increasing the Pozzolanic Reactivity of Recovered CDW Cement Stone by Mechanical Activation – *R. Szabó, M. Szűcs, M. Ambrus, G. Mucsi*
- ID135 Alkali-Activated Metashale Mortar with Waste Cementitious Aggregate: Material Characterization – *P. Hotěk, L. Fiala, W-T. Lin, Y-H. Chang, R. Černý*
- ID114 Lightweight Geopolymer Composites: The Impact of the Aggregate – *Z. Alves, J. A. Labrincha, R. M. Novais*
- ID115 The Use of Calcined Diatomite as an Additive to Geopolymeric Materials – *K. Pławecka, A. Bąk, M. Hebdowska-Krupa, M. Łach*
- 10:15 – 10:45 **Coffee break**

10:45 – 11:15 Introduction to the Session IV

- ID129 Sulfate Resistance in Carbonated Low-Calcium Silicate Cement Pastes – R. Tokpatayeva, J. Olek, S. Sahu

11:15 – 12:15 Session IV: Durability of mineral binders

- ID116 The Influence of the Quality of Brick Firing on Their Calcium Diffusion Capacity and Biodegradation Potential—A Preliminary Study – K. Kobetičová, J. Nábělková, M. Keppert, I. Medved', Z. Suchorab, R. Černý
- ID106 Effect of Potassium Formate on Alkali–Silica Reaction in Aggregates with Different Categories of Reactivity – A. Antolík, D. Jóźwiak-Niedźwiedzka, K. Dziedzic, P. Lisowski
- ID143 Effect of Fungi Removal Method on the Mechanical Properties of Polymer Composites Reinforced with Oat and Millet Husks – M. Goron, E. Sudoł
- ID124 Fire Resistance of Geopolymer Materials—A Change in Physical and Mechanical Properties – T. M. M. Issa, K. Mróz, M. Sitarz, I. Hager, E. Słupska

12:15 – 12:45 **Coffee break**

12:45 – 14:15 Session V: Mineral additives application in cementitious binders

- ID142 The Impact of Waste Fluid Catalytic Cracking Catalyst Addition on the Selected Properties of Cement Pastes – P. Niewiadomski, M. Cisiński
- ID122 Influence of Spent Fluid Catalytic Cracking Catalyst on the Properties of the New Binder Based on Fly Ash and Portland Cement – J. Rakić, Z. Bašćarević
- ID108 Study on the Blending Characteristics of Ternary Cementless Materials – Y-H. Chang, L. Fiala, M. Záleská, D. Koňáková, W-T. Lin, A. Cheng
- ID134 Effect of Glass Powder on the Cement Hydration, Microstructure and Mechanical Properties of Mortar – M. Dobiszewska, W. Pichór, T. Tracz, A. Petrella, M. Notarnicola
- ID128 Influence of the Addition of Ground Granulated Blast Furnace Slag, Fly Silica Ash and Limestone on Selected Properties of Cement Mortars – W. Brachaczek, A. Chleboś, M. Kupczak, S. Spisak, M. Stybak, K. Żyrek
- ID103 Properties of the Cement, Slag and Fly Ash Mixture Composition Corresponding to CEM II/C-M and CEM VI – E. Tkaczewska, G. Malata

14:15 – 15:15 **Lunch**

15:15 – 16:30 Session VI: Geopolymer binders engineering

- ID126 Fiber-Reinforced Alkali-Activated Materials Based on Waste Materials – [M. Mildner](#), [J. Fořt](#), [R. Černý](#)
- ID121 Characterization of a Coal Shale from Marcel Mining as Raw Material for Geopolymer Manufacturing – [K. Korniejenko](#), [B. Figiela](#), [K. Pławecka](#), [A. Bulut](#), [B. Şahin](#), [G. Azizağaoğlu](#), [M. Łach](#)
- ID130 A Study of Fly Ash-Based Geopolymers with Basalt Flour Addition – [B. Kozub](#), [K. Miernik](#), [S. Gądek](#)
- ID105 Geopolymers Based on Fly Ash from the Bełchatów Power Plant – [A. Bak](#), [P. Bazan](#), [K. Pławecka](#), [M. Łach](#)
- ID146 Geopolymers—Base Materials and Properties of Green Structural Materials – [T. M. M. Issa](#), [M. Sitarz](#), [K. Mróz](#), [M. Różycki](#)

DAY 3 21 April 2023, Friday

9:00 – 10:15 Session VII: Sustainable Approaches to Building Materials Engineering

- ID120 Feasibility Study of Waste Gypsum as a Full Replacement for Fine Aggregates of Controlled Low-Strength Material – [W-T. Lin](#), [K. Korniejenko](#), [D. Mierzwiński](#), [M. Łach](#), [A. Cheng](#), [K-L. Lin](#)
- ID137 Physico-Chemical Properties of Sewage Sludge Ash and Its Influence on the Chemical Shrinkage of Cement Pastes – [M. Adamczyk](#), [T. Zdeb](#), [T. Tracz](#)
- ID102 High-Strength Concrete Using Ash and Slag Cements – [L. Dvorkin](#), [V. Zhitkovsky](#), [V. Marchuk](#), [R. Makarenko](#)
- ID136 Influence of the Size of Milled Coal Gangue Particles on the Mechanical Properties of Geopolymers – [B. Figiela](#), [K. Korniejenko](#), [A. Bulut](#), [B. Şahin](#), [G. Azizağaoğlu](#), [K. Pławecka](#), [B. Kozub](#)
- ID132 Manufacturing of Low-Cost Bricks Using Waste Materials – [K. Ramakrishnan](#), [V. Chellappa](#), [S. Chandrasekarabharathi](#)

10:15 – 10:45

Coffee break

10:45 – 12:00 Session VIII: Energy efficiency of buildings and new low carbon materials

- ID144 Thermal Performance Evaluation of a PCM-Integrated Gypsum Plaster Board – [K. Nowak](#), [T. Kisilewicz](#), [U. Berardi](#) and [A. Zastawna-Rumin](#)
- ID118 Use of Bonded Joints for Fastening Sheet-Metal Components to Contemporary Facades Fitted with an External Thermal Insulation Composite System with Thin-Layer Acrylic Plaster – [J. Šlanhof](#), [A. Průcha](#), [B. Nečasová](#), [A. Boháček](#)
- ID104 Numerical Modelling of Structural Behaviour of Curved Insulating Glass Units – [M. Kozłowski](#), [K. Zemła](#)
- ID112 Placing on the Market Modern Construction Products and Systems Contributing to Next Generation of Healthy, Nearly Zero-Energy Buildings – [A. Nowak-Michta](#)
- ID141 Low Carbon Concrete Possibilities: EPD and Regulations in Northern Periphery and Arctic – [I. Novakova](#), [P. Perumal](#), [A. Cwirzen](#), [O. H. Wallevik](#)

12:00 – 12:30

Coffee break

12:30 – 13:15 Session IX: Concrete reinforcement – material and durability issues

- ID119 Analysis of Thermal and Mechanical Parameters of the BFRP Bars – [M. Wydra](#), [P. Dolny](#), [G. Sadowski](#), [N. Grochowska](#), [P. Turkowski](#), [J. Fangrat](#)
- ID133 Influence of Environmental Conditions on Steel Corrosion in Concrete Exposed to Gamma Radiation – [M. Dąbrowski](#), [J. Kuziak](#), [K. Dziedzic](#), [M. A. Glinicki](#)
- ID113 Flexural Performance of Chopped Basalt Fiber Reinforced Concrete Beams – [B. L. Olafsson](#), [G. J. Einarsson](#), [E. R. Thorhallsson](#)

13:15 Conference closing ceremony