



MATBUD'2018

**8th Scientific-Technical Conference
on Material Problems in Civil Engineering**

MATBUD'2018

Cracow, 25-27 June 2018

**Conference
programme**

DAY 1 25 June 2018, Monday

10:00 - 11:00 Registration - "DZIAŁOWNIA" Conference Hall

11:00 - 11:30 Conference opening ceremony

Tadeusz Tatara, Vice-Rector for Research, CUT

Andrzej Szarata, Dean of the Faculty of Civil Engineering, CUT

Maria Kaszyńska, Chairperson of the Building Materials Engineering Section, PAN, ZUT

Lech Czarnecki, Chairman of the Scientific Committee, Scientific Secretary of the Building Research Institute

Izabela Hager, Chairperson of Organizing Committee MATBUD'2018, CUT

11:30-12:00 Plenary Session

Chairpersons: Lech Czarnecki, Abdelhafid Khelidj

Key note paper: *On site deployment of 3D printing for the building construction – The case of YhnovaTM* - P. Poullain, E. Paquet, S. Garnier and B. Furet

12.00-12:45 Session I: New generation concretes

Chairpersons: Lech Czarnecki, Abdelhafid Khelidj

I/1 *Evaluation of suitability for 3D printing of high performance concretes* - M. Kaszyńska, M. Hoffmann, S. Skibicki, A. Zieliński, M. Techman, N. Olczyk and T. Wróblewski

I/2 *Influence of the w/c ratio and aggregate composition on the autogenous shrinkage in self-consolidating concrete* - A. Zieliński and M. Kaszyńska

I/3 *Low cement content SCC (Eco-SCC) – the alternative for ready-mix traditional concrete* - M. Urban

12:45-13:00 Coffee break

13:00-14:30 Session II: Modeling of concrete behavior and test methods

Chairpersons: Maria Kaszyńska; Ulrich Diederichs

- II/1 *Influence of tensile cracking and of aggregate size on concrete permeability* - M. Choinska, H. Al-Khazraji, N. Benkemoun and A. Khelidj
- II/2 *Application of the nanoindentation method in assessing of properties of cement composites modified with silica-magnetite nanostructures* - E. Horszczaruk, R. Jedrzejewski, J. Baranowska and E. Mijowska
- II/3 *Failure mode in shear of steel fiber reinforced concrete beams* - J. Krassowska and M. Kosior-Kazberuk
- II/4 *Concrete propensity to fire spalling: testing and observations* - I. Hager, K. Mróz and T. Tracz
- II/5 *High frequency impulse ground penetrating radar application in assessment of interlayer connections* - J. Sudyka, L. Krysiński, A. Zofka, M. Pszczoła and P. Jaskuła
- II/6 *Assessment of the compressive strength of lime mortar in the joints of brick walls - case study* - D. Łątka and P. Matysek

14:30 - 15:30 **Lunch**

15:30-18:00 **Session III: Waste products as components of sustainable building materials**

Chairpersons: Izabela Hager, Paweł Łukowski

- III/1 *Towards the utilization of waste glass powder in sustainable cement based overlays* - Ł. Sadowski
- III/2 *Assessing the Performance of Concrete Containing Recycled Glass on Tensile Splitting Strength and Resistance to Alkali Silica Reaction* - Ch.-H. Ho, A. Almonnieay, K. Kyaw and P.M.S. Maung
- III/3 *Chemical testing of post-process ashes from municipal waste combustion* - T. Stryzewska and M. Dudek
- III/4 *Physical properties of post-process fly ash from TWTP Krakow* - A. Nowak-Michta and B. Kabat

16:45-17.00 **Coffee break**

- III/5 *Influence of cement substitution by calcareous fly ash on the mechanical properties of polymer-cement composites* - B. Jaworska, P. Łukowski and J. Jaworski

- III/6 *Lightweight concrete with copper slag waste as sand substitution* - R. Jaskulski and W. Kubissa
- III/7 *Application of ceramic dust as a modifier reducing the extent of rheological deformations in airfield pavement concrete* - M. Linek
- III/8 *Assessment of preliminary suitability of Fe- and Cr-rich waste material for the production of building ceramics* - E. Kłosek-Wawrzyn and P. Murzyn

After Session III: **"Ice-breaking evening"** CUT Campus, Warszawska St.

DAY 2 26 June 2018, Tuesday

9:00-10:45 **Session IV: Cement pastes and mortars**

Chairpersons: João Castro Gomes, Daria Józwiak-Niedźwiedzka

- IV/1 *Hydration degree development of blast furnace slag blended cement pastes using thermogravimetric Analysis (TGA)* - W. Deboucha, N. Leklou and A. Khelidj
- IV/2 *The impact of lithium nitrate on the physical and mechanical properties of Portland cement* - J. Zapala-Sławeta and Z. Owsiak
- IV/3 *Effect of boron-containing aggregates on setting and hardening of Portland cement mortars* - A. Antolik, M.A. Glinicki and M. Gawlicki
- IV/4 *Influence of temperature on the properties of non-air-entrained and air-entrained cement mortars modified with different plasticisers and superplasticisers types* - B. Łażniewska-Piekarczyk
- IV/5 *Effect of redispersible polymer powder on setting time of thin-bed mortars* - M. Kulesza, D. Dębski and J. Fangrat
- IV/6 *Hydrophobisation of mortars containing waste polyurethane foam* - D. Barnat-Hunek, S. Duda, M. Garbacz and G. Łagód

10:45 – 11:00 Coffee break

11.00 - 12:30 **Session V: Durability and environmental impact – part I**

Chairpersons: Jan Deja, Miroslav Komljenovic

- V/1 *Frost resistance of concretes containing ground granulated blast-furnace slag* - P. Łukowski, A. Salih and J.J. Sokołowska

- V/2 *The impact of air content on the durability of concrete under combined sulphate and freeze-thaw attack* - J. Marczevska and W. Piasta
- V/3 *Chemical corrosion of external stairs – case study* - P. Czapik and Z. Owsiak
- V/4 *Calcareous Fly Ash Content Significance To Self-Terminating Carbonation Model of Concrete* - P. Woliński, P. Woyciechowski and G. Adamczewski
- V/5 *Influence of cement type on carbonation of concrete mixtures* - Ch. Tassos, K. Sideris, A. Chatzopoulos, N. Pistofidis and E. Chaniotakis
- V/6 *Analysis of protective features of concrete in precast prestressed floor slabs (HC type) against chloride penetration* - Z. Szweda
- V/7 *The content of chlorides in blast-furnace slag cement as a factor affecting the diffusion of chloride ions in concrete* - J. Kuziak, P. Woyciechowski, R. Kobyłka and A. Wcisło

12:30 – 12:45 Coffee break

12.45 - 14:00 Session V: Durability and environmental impact – part II

Chairpersons: Paweł Pichniarczyk, Piotr Woyciechowski

- V/8 *The influence of metahalloysite addition on tobermorite formation studied by X-ray powder diffraction and scanning electron microscope* - A. Skawińska
- V/9 *Alkali-silica reaction and microstructure of concrete subjected to combined chemical and physical exposure conditions* - D. Józwiak-Niedźwiedzka, M. Dąbrowski, K. Gibas, A. Antolik and M.A. Glinicki
- V/10 *Impact of the air-entrained concrete with the blast-furnace slag cement on the intensity of reinforcement corrosion process* - W. Raczkiwicz, W. Grzmił and J. Zapała - Sławeta
- V/11 *Application of acrylic-based coatings for concrete protection* - A. Kozak
- V/12 *Evaluating the Influence of Polymer Modified Asphalt Binders on Low Temperature Properties* - A. Abdelaziz, Ch.-H. Ho and M. Snyder

14:00 - 15:00 Lunch

15:00 Posiedzenie Komitetu Trwałości PZITB Budynek Działownia, s. 010

15:00-17:00 Session VI: **Geopolymers and soil-cement materials**

Chairpersons: Marta Choińska, Tomasz Tracz

- VI/1 *Resistance to external sulfate attack - Comparison of two alkali-activated binders* - M. Komljenović, N. Džunuzović and V. Nikolić
- VI/2 *Study of an alkali-activated binder based on tungsten mining mud and brick powder waste* - N. Sedira and J. Castro-Gomes
- VI/3 *Influence of water to solid ratio on mechanical properties of GBFS-based geopolymer foam concrete* - T. Piotrowski and P. Prochoń

15:45-16:00 Coffee break

- VI/4 *Effect of High Temperature on Mechanical Properties of Geopolymer Mortar* - M. Sitarz, I. Hager and J. Kochanek
- VI/5 *The Effect of Additives on the Properties of Metakaolin and Fly Ash Based Geopolymers* - M. Łach, K. Korniejenko, M. Hebdowska-Krupa and J. Mikula
- VI/6 *Influence of Soil-Cement Composition on its Selected Properties* - K. Brasse, T. Tracz, T. Zdeb and P. Rychlewski
- VI/7 *Toward a better understanding of the effects of cement treatment on microstructural and hydraulic properties of compacted soils* - H. Ranaivomanana and A. Razakamanantsoa

17:15-18:00 Plenary meeting of the Scientific Committee

19:30 Conference Dinner, "BARKA", barge near Bernatka Bridge, Vistula River

DAY 3 27 June 2018, Wednesday

9:30-11:00 Session VII: **Structural materials performance evaluation**

Chairpersons: Jadwiga Fangrat, Tomasz Piotrowski

VII/1 *The influence of an applied standard test method on a measurement of concrete stabilized secant modulus of elasticity - L. Domagała and J. Dobrowolska*

VII/2 *Usefulness of porphyry and amphibolites as a component of concrete for airfield pavements - M. Linek, P. Nita, P. Wolka and W. Żebrowski*

VII/3 *Probability calibration of deformation factor for timber roofs in the Polish mountain zones - T. Domański and K. Kmiecik*

VII/4 *Material properties and the energy balance in standardized fire testing - W. Węgrzyński and P. Turkowski*

VII/5 *Rational application of hot finished rectangular hollow sections in steel structures - K. Kuchta and I. Tylek*

11:00 - 11:30 Coffee break

11:30-13:00 Session VIII: Energy-efficient building materials

Chairpersons: Tomasz Kisilewicz, Robert Geryło

VIII/1 *Energy and hygrothermal performance of built-in mineral wool thermal insulations - B. Nagy and T.K. Simon*

VIII/2 *Multifunctional decorative coatings based on cement-silicate binder - A. Shaybadullina, G. Yakovlev, V. Grakhov, I. Polyanskikh and Y. Ginchitskaya*

VIII/3 *Influence of Load-bearing Structure on Size of Bonded Facade Cladding - P. Liška, B. Nečasová and J. Šlanhof*

VIII/4 *Impact resistance of external thermal insulation systems - E. Sudół, D. Dębski, R. Zamorowska and B. Francke*

VIII/5 *Inverted roof insulation kits and their durability - B. Francke and R. Geryło*

VIII/6 *Hygrothermal modelling of masonry blocks filled with thermal insulation - B. Nagy*

13:15-14:00 Plenary closing session

Chairpersons: Lech Czarnecki, Izabela Hager, Jacek Śliwiński

14:00 Lunch