

9th International Conference **FIBRE CONCRETE 2017**

FRC, TRC, UHPC

DAP Hotel, Prague, Czech Republic

Organized by CTU in Prague, Faculty of Civil Engineering,



**FACULTY OF CIVIL
ENGINEERING
CTU IN PRAGUE**



Wednesday - September 13, 2017

17:00 18:00 **Registration** - Faculty of Civil Engineering, CTU in Prague (Thákurova 7, Prague 6)

Thursday - September 14, 2017

Hotel DAP (Vítězné náměstí 4/684, Prague 6 - Entrance: Buzulucká Street)

8:30 9:00 **Registration+ Arrangement of poster session + Oral presentation setup**

9:00 9:10 **Conference opening and welcome speech**

Keynote Lectures

9:10 9:30 **1** STRUCTURAL APPLICATIONS OF FIBRE REINFORCED CONCRETE IN THE CZECH REPUBLIC

Alena Kohoutková

9:30 10:10 **2** FRACTURE AND SIZE EFFECT IN FIBER REINFORCED CONCRETE VIA MICROPLANE AND LATTICE-PARTICLE MODELS, AND COMPARISONS TO FIBER-POLYMER COMPOSITES

Zdeněk P Bažant

10:10 10:50 **3** GLASSFIBRE REINFORCED CONCRETE: A REVIEW

Peter JM Bartos

10:50 11:15

Coffee Break

Session 1

11:15 11:30 **4** REPLACEMENT OF MINIMUM STEEL BAR REINFORCEMENT WITH STEEL FIBRES IN STRUCTURAL CONCRETE MEMBERS

F Junker, K Holschemacher, T Müller, H Kieslic

11:30 11:45 **5** PROBABILISTIC DESIGN OF FIBRE CONCRETE STRUCTURES

R Pukl, D Novák, T Sajdlová, D Lehký, J Červenka and V Červenka

11:45 12:00 **6** COMPARISON OF EXPERIMENTAL AND THEORETICAL DATA FOR STEEL FIBER REINFORCED CONCRETE SLABS ON GROUND UNDER A POINT LOAD ACCORDING TO DESIGN CODES OF THE REPUBLIC OF BELARUS AND THE RUSSIAN FEDERATION

A Valodzin

12:00 12:15 **7** DRAMIX® STEEL FIBRES IN RESIDENTIAL FOUNDATION SLABS IN CZECH REPUBLIC: DESIGN APPROACH

S Pouillon

12:15 12:30 **8** ON THE RESIDUAL PROPERTIES OF DAMAGED FRC

R Zerbino, MC Torrijos and G Giaccio

12:30 12:45 **9** CRACK CONTROL IN CONCRETE MEMBERS REINFORCED BY CONVENTIONAL REBARS AND STEEL FIBERS

G Tiberti, I Trabucchi, M AlHamaydeh, F Minelli and G Plizzari

12:45 14:00

Lunch (Hotel DAP)

Session 2

- 14:00 14:15 **10** PRODUCTION OF FOOTBRIDGE WITH DOUBLE CURVATURE MADE OF UHPC
J Kolísko, D Čížek, P Tej, M Rydval
- 14:15 14:30 **11** APPLICATION OF BCN TEST FOR CONTROLLING FIBER REINFORCED SHOTCRETE IN TUNNELLING WORKS IN CHILE
S Carmona, C Molíns
- 14:30 14:45 **12** INFLUENCE OF STEEL FIBRES ON THE BLAST RESPONSE OF NORMAL-STRENGTH AND HIGH-STRENGTH REINFORCED CONCRETE COLUMNS
A Hammoud, H Aoude
- 14:45 15:00 **13** INFLUENCE OF MIXING PROCEDURE ON MECHANICAL PROPERTIES OF HIGH-PERFORMANCE CONCRETE
J Fládr, P Bílý
- 15:00 15:15 **14** UTILISATION OF FIBRE REINFORCED SPRAYED CONCRETE FOR PRIMARY LINING OF THE POVAŽSKÝ CHLMEC TUNNEL
M Baláž, M Uhrin, P Růžička and M Hilar
- 15:15 15:30 **15** RECENT DEVELOPMENT IN BLAST PERFORMANCE OF FIBER-REINFORCED CONCRETE
R Hajek, M Foglar, A Kohoutkova

15:30 16:00

Coffee Break

Session 3

- 16:00 16:15 **16** EFFECTS OF AGGREGATE GRADING ON THE PROPERTIES OF STEEL FIBRE-REINFORCED CONCRETE
M Acikgenç Ulas, K E Alyamac, Z C Ulucan
- 16:15 16:30 **17** NON-DESTRUCTIVE TESTING OF STEEL FIBRE REINFORCED CONCRETE
D Corbett, G Tronca
- 16:30 16:45 **18** FIBRE REINFORCED CONCRETE IN FLEXURE AND SINGLE FIBRE PULL-OUT TEST: A CORRELATION
M Manca, D Ciancio, Ph Dight
- 16:45 17:00 **19** MICROMECHANICAL PERFORMANCE OF INTERFACIAL TRANSITION ZONE IN FIBER-REINFORCED CEMENT MATRIX
V Zacharda, J Němeček, P Štemberk
- 17:00 17:15 **20** VIBRATED AND SELF-COMPACTING FIBRE REINFORCED CONCRETE: EXPERIMENTAL INVESTIGATION ON THE FIBRE ORIENTATION
A Conforti, GA Plizzari and R Zerbino
- 17:15 17:30 **21** REACTIVE POWDER CONCRETE REINFORCED WITH STEEL FIBRES EXPOSED TO HIGH TEMPERATURES
T Kh Alrekabi, V M C F Cunha and J A O Barros

19:00 22:00

Conference Dinner - The Dominican Monastery at St. Jiljí Church – Baroque Refectory

(Jilská 7a, Prague 1)



Friday - September 15, 2017

Hotel DAP (Vítězné náměstí 4/684, Prague 6 - Entrance: Buzulucká Street)

Session 4

- 8:30 8:45 **22** FLEXURAL STIFFNESS OF THE COMPOSITE STEEL AND FIBRE-REINFORCED CONCRETE CIRCULAR HOLLOW SECTION
A Tretyakov, I Tkalenko, F Wald, J Novak, R Stefan, A Kohoutková
- 8:45 9:00 **23** MULTI-SCALE PULL-OUT RESISTANCE OF STEEL REINFORCING BAR EMBEDDED IN HYBRID FIBER REINFORCED
A Lin, C P Ostertag
- 9:00 9:15 **24** APPLICATION OF UHPC THIN-WALLED ELEMENTS FOR MULTI-PURPOSE USE TABLE
O Slabý, J Vašková, V Veselý
- 9:15 9:30 **25** QUANTIFICATION OF CRACKING LOCALIZATION IN FIBRE-REINFORCED CONCRETE BEAMS
S Werzberger, Y S Karinski, A N Dancygier
- 9:30 9:45 **26** PUNCHING SHEAR IN STEEL FIBRE REINFORCED CONCRETE SLABS WITHOUT TRADITIONAL REINFORCEMENT
K H Tan, A Venkateshwaran
- 9:45 10:00 **27** SEISMIC BEHAVIOUR OF SYNTHETIC-FRC COLUMNS
P Paultre, R Eid

10:00 10:45

Coffee Break + Poster Session

Session 5

- 10:45 11:00 **28** THE EFFECT OF THE LENGTH OF MACRO SYNTHETIC FIBRES ON THEIR PERFORMANCE IN CONCRETE
K P Juhász, V Kis
- 11:00 11:15 **29** CREEP BEHAVIOUR OF MACRO GLASS FIBRE REINFORCED CONCRETE BEAMS
P Löber, B Heiden, K Holschemacher
- 11:15 11:30 **30** PRACTICAL REALIZATION OF FIBRE REINFORCED CONCRETE (Czech Language)
P Herka
- 11:30 11:45 **31** APPLICATION OF TRILINEAR SOFTENING FUNCTIONS BASED ON A COHESIVE CRACK APPROACH TO THE SIMULATION
A Enfedaque, M G Alberti, J C Gálvez
- 11:45 12:00 **32** HOW TO PREDICT THE ORIENTATION FACTOR OF NON-RIGID MACRO-SYNTHETIC FIBRE REINFORCED CONCRETE
M G Alberti, A Enfedaque, J C Gálvez
- 12:00 12:15 **33** EFFECT OF DIFFERENT MATRIX COMPOSITIONS AND MICRO STEEL FIBERS ON TENSILE BEHAVIOR OF TEXTILE
J Esmaeili, I Sharifi, K Andalibi, J Kasaei
- 12:15 12:30 **Closing Ceremony**

12:30 14:00

Lunch (Hotel DAP)

Saturday - September 16, 2017

10:30 **Technical Tour - Emmaus Monastery** (Vyšehradská 49/320, Prague 2)



Poster session

- 1 INFLUENCE OF STEEL FIBERS ON THE SHEAR AND FLEXURAL PERFORMANCE OF HIGH-STRENGTH CONCRETE BEAMS TESTED UNDER BLAST LOADS
O Algasseem, Y Li, H Aoude
- 2 CHARACTERIZATION OF POLYMER CONCRETE WITH NATURAL FIBERS
M Barbuta, A A Serbanoiu, R Teodorescu, B Rosca, R Mitroi, G Bejan
- 3 FEASIBILITY OF USING FIBROUS WASTE IN CEMENT-BASED MATERIAL
M Beddar, A Meddah and L Belagraa
- 4 PROBABILISTIC ANALYSIS OF STRUCTURAL MEMBER FROM RECYCLED AGGREGATE CONCRETE
I Broukalová and K Šeps
- 5 STUDIES FOR UNDERSTANDING EFFECTS OF ADDITIONS ON THE STRENGTH OF CEMENT CONCRETE
R D Bucur, M Barbuta, P Konvalina, A A Serbanoiu and J Bernas
- 6 THE INFLUENCE OF CONCRETE MIXTURE'S RHEOLOGICAL PROPERTIES ON THE QUALITY OF FORMED CONCRETE SURFACES
M Daukšys, A Klovas and L Venčkauskas
- 7 SUSTAINABILITY AND DURABILITY ANALYSIS OF REINFORCED CONCRETE STRUCTURES
A Horáková, I Broukalová, A Kohoutková and J Vašková
- 8 EVALUATION OF BLAST RESISTANCE OF FIBRE REINFORCED COMPOSITE SPECIMENS UNDER CONTACT BLAST LOAD
O Janota and M Foglar
- 9 EFFECT OF THE LOADING RATE TO FIBRE REINFORCED CONCRETE BEAMS
K P Juhász, P Schaul and L Nagy
- 10 RIGID-BODY-SPRING MODEL NUMERICAL ANALYSIS OF JOINT PERFORMANCE OF ENGINEERED CEMENTITIOUS COMPOSITES AND CONCRETE
Y Khmurovska, P Štemberk and V Křístek
- 11 DESIGN OF FOOTBRIDGE WITH DOUBLE CURVATURE MADE OF UHPC
P Kněž, P Tej, D Čítek and J Kolísko
- 12 UHPC PANELS UTILIZED AS PERMANENT FORMWORK OF IN-SITU CAST REINFORCED CONCRETE DECK BRIDGES
J Kolísko, J Čech, P Tej and P Kněž
- 13 ON THE EFFECT OF ADDITION OF CARBON NANOTUBES ON THE ELECTRIC CONDUCTIVITY OF ALKALI-ACTIVATED SLAG MORTARS
I Kusak and M Lunak
- 14 FIBRE REINFORCED CONCRETE EXPOSED TO ELEVATED TEMPERATURE
J Novák and A Kohoutková
- 15 TWO INNOVATIVE SOLUTIONS BASED ON FIBRE CONCRETE BLOCKS DESIGNED FOR BUILDING SUBSTRUCTURE
J Pazderka and P Hájek
- 16 COMPOSITE MATERIAL FROM BY-PRODUCTS AND ITS PROPERTIES
K Šeps, I Broukalová and J Vodička
- 17 RESEARCH OF UHPC PROPERTIES PREPARED WITH INDUSTRIAL MIXER
E Šerelis, V Vaitkevičius, V Kerševičius
- 18 REALIZATION OF FRC INTERIOR AND EXTERIOR FURNITURE
Š Šonka, M Frantová, P Štemberk, J Havrda and P Janouch
- 19 HEAT TRANSFER IN HYBRID FIBRE REINFORCED CONCRETE-STEEL COMPOSITE COLUMN EXPOSED TO A GAS-RED RADIANT HEATER
R Štefan, J Procházka, J Novák, J Fládr, F Wald, A Kohoutková, L Scheinherrová and M Čáchová
- 20 THE OVERALL RESEARCH RESULTS OF PRESTRESSED I-BEAMS MADE OF ULTRA-HIGH PERFORMANCE CONCRETE
P Tej, J Kolísko, P Kněž and J Čech
- 21 TENSILE PROPERTIES OF STRUCTURAL FIBRE REINFORCED CONCRETE
M Típka and J Vašková
- 22 INFLUENCE OF BASALT MESH INDUCED INCREASE OF HETEROGENEITY OF CEMENT COMPOSITES WITH DISPERSED FIBERS ON ITS RESISTANCE UNDER NEAR-FIELD BLAST
J Zima and M Foglar
- 23 PRODUCTION OF A TEXTILE REINFORCED CONCRETE PROTECTIVE LAYERS WITH NON-WOVEN POLYPROPYLENE FABRIC
J Žák, P Štemberk and J Vodička