

2018 LISBON CONFERENCE ABSTRACT

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Table of Contents

2018 Lisbon Conference Introductions	6
Organizing Committee	7
Presentation Instructions	9
Keynote & Plenary Speaker Introductions	10
Brief Schedule for Conference	22
Detailed Schedule for Conference	23
Session 1	
P0013: Preparation of Water-based Phenolic Resin Ink for 3D Printing System <i>Cheng-Chien Wang, Chen-Jui Wu and Chuh-Yung Chen</i>	25
P0018: A Novel Method of Preparing Shell-type WC-Co Powders Using Spray Drying Process <i>Wei-Tien Hsiao and Wu-Han Liu</i>	26
P0020: Preparation and Characteristics of Atactic Polypropylene-graft-maleic Anhydride and its Polypropylene Composites <i>Meng-Heng Wu, Cheng-Chien Wang and Chuh-Yung Chen</i>	27
P0022: Self-assembly and Mechanical Modeling of Carbon Nanotube Materials with the Mesoscopic Distinct Element Method <i>Igor Ostanin</i>	28
P0029: Characterization of Sludge from Iron Ore Processing and Properties of Mortar Prepared by Full Replacement of Natural Silica Sand <i>Alena Sičáková and Marek Kováč</i>	29
P0048: Ashes and Their Potential in Building Industry <i>Lucia Bulková</i>	30
P0055: Effect of Inorganic SiO ₂ Nanofibers in High Strength Cementitious Composites <i>Lenka Bodnarova, Rudolf Hela and Daniel Sedlacek</i>	31
P2002: Recycling Scraps of CF-epoxy Composites in Different Binders Matrix <i>Andrea Saccani, Stefania Manzi and Isabella Lancellotti</i>	32
Session 2	
P0016: Seismic Behavior of Large Scale RC Columns under Reversed Cyclic Loadings <i>Hakim Bechtoula, Masanobu Sakashita and Susumu Kono</i>	33
P0003: Fragility Assessment of Existing RC Buildings in Algeria Using Incremental Dynamic Analysis <i>Fouad Kehila, Mustapha Remki and Abderrahmane Kibboua</i>	34

P0037: Application of the High Early Strength Type Expansive Agent to the Blast Furnace Slag Combination Concrete with GGBFS under Steam Curing	35
<i>Erica Enzaki, Takashi Sakuma, Eizou Takeshita and Shigeyuki Date</i>	
P0049: Relating Rapid Chloride Migration Coefficient of Blast Furnace Slag Concrete to Capillary Pore Structure Parameters	36
<i>Chao Yang, Shuguang Wang, Feng Xu, Weiwei Li and Dongsheng Du</i>	
P1004: Assessment of Compression Strength of Concrete Columns Confined with Basalt Fibre Reinforced Polymer	37
<i>CHIADIGHIKA OBI Paschal Chimeremeze</i>	
P1008: Strength and Deformability of the Concrete Core of Precompressed Concrete Filled Steel Tube Columns of Annular Cross-Section	38
<i>Anatoly Krishan and Mariia Astafeva</i>	
P2007: Bioconcrete Development Using Calcite-precipitating Bacteria Isolated from Different Sources in Jordan	39
<i>Suha Mujahed Abudoleh, Amal Al Mahayreh, Aya Al Frejat and Fatima Al Hulaisy</i>	
P1011: Accounting for the Scale Factor in Determining the Compressed Concrete Strength of Concrete-filled Steel Tube Elements	40
<i>Elvira P. Chernyshova and Vladislav E. Chernyshov</i>	
Session 3	
P0004: An Analytical Study on the Seismic Vulnerability of an Existing URM Masonry Building	41
<i>Mustapha Remki, Fouad Kehila and Abderrahmane Kibboua</i>	
P0017: Superplasticizer and Shrinkage Reducing Admixture Dosages for Microfine Cement in Grout Systems	42
<i>Md Shamsuddoha, Götz Hüsken, Wolfram Schmidt, Hans-Carsten Kühne and Matthias Baeßler</i>	
P0027: Effect of Curing Conditions on Physical Properties of Mortar Blended with Expansive Agent	43
<i>Hoshina Takuya, Hiroyuki Sudo, Sinitirou Hashimoto and Sigeyuki Date</i>	
P0036: Basic Research of Improving the Mortar Flow by Thermal Stimulation to Superplasticizer	44
<i>Mizuki Takigawa, Fraidoon Rahmanzai, Rio Kita and Shigeyuki Date</i>	
P0047: Possibilities of Practical Application of Alkali-activated Systems in Prefabrication	45
<i>Josef Koňářík and Jana Boháčová</i>	
P0053: Crack Reduction during Drying Process by Using Surfactant	46
<i>Sandra Guzlena, Gita Sakale, Sergejs Certoks and Arnita Spule</i>	

P1012: Enhancing the Electrochemical Behavior of a Cold Rolled AISI316Ti Austenitic Stainless Steel by Controlling its Microstructure	47
---	----

Fatah HELLAL and Houria KADDOUR

S0008: Investigation on Architectural Adaptability for a New Kind of Column-supported Modular Steel Buildings	48
---	----

Ke Cao, Guo Q. Li, Chen Chen

Session 4

S0001: Experimental Investigation of Single Batter Pile Behaviour Subjected to Lateral Soil Movement	49
--	----

Osamah Alsalih, Tahsin Toma-Sabbagh, Ihsan Al-Abboodi and Wisam Alawadi

S0002: Application of the Shiono and Knight Model in Asymmetric Compound Channels with Smooth and Rough Narrow Floodplains	50
--	----

Wisam Alawadi, T.D. Prasad and Osama Salim

S0003: Studies on Train-bridge Coupling System Considering Thermal Effect of Piers	51
--	----

Xiao-long Zheng, Xin-yu Xu and Qi-wu Fan

S0004: Running Safety of Vehicle on the Bridge under the Sudden Change of Wind Loads Due to Wind Barriers	52
---	----

Xin-yu Xu, Xiao-long Zheng and Yong-le Li

P0005: Seismic Vulnerability Assessment of Bridges Based on Ductility Parameters	53
--	----

Abderrahmane Kibboua, Fouad Kehila, Nadjib Hemaïdi-Zourgui and Mustapha Remki

S0020: Lateral Vibration Analysis of Multi-span foot-bridges Subjected to Pedestrian Loads	54
--	----

Mengjie Wang and Ding Zhou

S0021: Study on Mechanical Property of Bridge Bearings under Eccentric Compression and Shearing	55
---	----

Weiguo Huang, Xiuli Xu, Tao Wang, Kairui Wang and Weiqing Liu

S2002: Experimental Study on Mechanical Properties of Shear-type Mild Steel Damper	56
--	----

Weizhi Xu, Shuguang Wang, Weiqing Liu and Dongsheng Du

Poster Session

P0019: Dynamic Vulcanization Process of LDPE and EVA via Transesterification	57
--	----

Cheng-wei Huang, Chuh-yung Chen and Cheng-Chien Wang

P1001: Wear Mechanism of Multi-layer AlCrWN/AlCrWSiN Coatings on Cemented Carbide Tool Prepared by Arc Ion Plating in Dry Cutting of Sintered Steel	58
---	----

Tadahiro Wada and Hiroyuki Hanyu

P1015: A Study on Cementation Process of Lead, Silver and Copper from Brine Leaching Solution	59
---	----

Nadezhda Kazakova, Biserka Lucheva and Petar Iliev

P1017: Investigation of the Processes of Solidification of Continuous Casting Units in Continuous Steel Casting Machines	60
--	----

Mariya Krasimirova Ivanova and Emil Mihailov

One Day Visit	61
Conference Venue	63
Note	64
Feedback Information	65

Keynote Speaker II



Assoc. Prof. Paulo Mendonça

University of Minho, Portugal

Dr. Paulo Mendonça was born in Porto in 10th June. PhD in Civil Engineering by the University of Minho, with the thesis: “Living under a second skin”, acclaimed by unanimity (2005). As a PhD fellowship of FCT (Portuguese Foundation for Science and Technology) he got the “Advanced Studies Diploma” in Barcelona on the Technical Superior School of Architecture (ETSAB). He is Associate Professor in the Architecture School of the University of Minho, Portugal (EAUM). President of EAUM (2011-2012) and Vice-President (2010-2011). Architectural Graduate and Integrated Master Studies Director (2005-2009). He is an author of more than one hundred publications. The main research subjects includes lightweight and mixed weight buildings, low cost housing, local and global economic asymmetries, low-tech strategies, energy costs and sustainable development, new materials and technologies, recycling and reusing potentialities.

Topic: “*Interaction between Materials and Techniques on Digital Fabrication*”

Paulo Mendonça

University of Minho, Portugal

Abstract- Digital processes in manufacturing are currently thoroughly investigated and applied in Architecture and Product Design. Digital fabrication techniques allow for creation of physical prototypes, which can be used to evaluate structural and functional performance, constructability, as well as can support designers in easily testing and presenting the aesthetic qualities of its ideas. The principles of digital design and manufacturing processes are rather linked to a way of craft production rather than industrial processes as they emphasize the qualities of the materials used, providing higher flexibility during the development and production processes. This presentation discusses the potentials of digital design and manufacturing, related with designer’s contemporary choice from multiple prototyping materials and techniques, using as a case study the development of an interior partition wall design. This partition wall design, called AdjustMembrane is expected to be more adjustable and flexible than conventional existent partition walls. The support structure consists of vertical straps with hand-tightening buckles to assure the initial tension between the horizontal building’s support elements – roof and floor. These straps form a net where wall panels are fixed, subdivided into two halves, which follow a modular metric that allows inserting water and electrical installations, as well as easy assembling and disassembling processes.