# 11th International Scientific Conference of Civil and Environmental Engineering for PhD. Students and Young Scientists (YS2019)

IOP Conference Series: Materials Science and Engineering Volume 566

Tatranska Lomnica, Slovakia 25 - 26 April 2019

### **Editors:**

Dusan Katunsky Peter Mesaros Vlasta Ondrejka Harbul'akova

ISBN: 978-1-5108-9392-4

ISSN: 1757-8981

#### Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence. Licence details: http://creativecommons.org/licenses/by/3.0/.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2019)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

#### Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

# **Table of contents**

## **Volume 566**

11th International Scientific Conference of Civil and Environmental Engineering for PhD. Students and Young Scientists (YS2019)

25–26 April 2019, Tatranská Lomnica, Slovakia

Published online: 9 August 2019

11th International Scientific Conference of Civil and Environmental Engineering for PhD. Students and Young Scientists

Peer review statement

#### **Papers**

Use of heat mirrors on field of renovation of window structures

S Bizonova....1

Application of micro wire on the sample made from asphalt mixture with using bitumen

J Bokomlaško and J Mandula.....7

The Importance of green roofs and Sustainable development

L Bříza....12

Evaluation of the effect of concrete strength increase on buckling resistance of concrete <u>filled tubes</u>

P Bukovska....17

Resistance of Steel-Concrete Composite Ceiling Beams of Multi-Storey Buildings

P Bukovská, V Kaňok, M Karmazínová and M Štrba....23

K Čákyová and F Vranay28
The influence of aggregate gradation on the fresh and hardened concrete properties  R Figmig and M Kovac34
Determination of input parameters necessary for the design of the polder in the Horná Topl'a basin, Slovakia
R Fijko42
History of vegetation roofs in the Czech Republic  M Hejl48
Hydraulic assessment of flood protection measures proposal  A Janík53
Water transport in materials of historical buildings  P Jaroš and M Vertal'63
The search for an optimal architectural shape using wind performance analysis  L Kabošová69
Cyclic load triaxial test procedures for soils in transportation engineering  J Kaluder74
Analysis of an experimental tension structure  L Kapolka80
r

Effect of water wall prototype on air humidity

V Karl'a85
Dynamic influence of a swinging bell on a traditional wooden structure of the Lemko orthodox church belfry
T Kochański93
Experimental house and stratification preheating tank  J Kosican101
Assessment of the possibility of using modern diagnostic methods to determine the changes in the properties of timber elements installed in a river bed  P. Kotásková, J. Fialová, J. Tippner and J Marková106
Study of zinc removal from water solutions using hornbeam wooden sawdust Z Kovacova114
Slab deformations caused by shrinkage – experiment vs. numerical calculation  D Kušnírová and S Priganc119
<u>The Effect of Openings on Stress Distribution in Glass Beams – Dependence on Diameter of Openings</u> M Lavko, V Kvočák and Z Sokol123
The fire characteristics of the Municipal noise absorbing screen  Z Mašková and O Bret129
The forced ventilation analysis of panel block building pilot project  D Miček136

<u>Update on Research on Transparent Wood</u>

Semi-rigid operation of connection in timber engineering
M Neusch, J Sandanus and K Sógel142
<u>Usage of true stress-strain curve for FE simulation and the influencing parameters</u>
A Petrík and R Ároch149
Developing of the rainfall intensity-duration-frequency curves for the Kosice region using multiple computational models
A Repel156
Fracture response of cement-based composite with spherical glass aggregate exposed to high temperatures
I Rozsypalová, I Kumpová, T Majda, Z Keršner and P Štancl160
New aspects of shore stabilization
M Slezingr, P A Fernandez, V Ondrejka Harbulakova and P Pelikan166
Cost management of building constructions and works through knowledge-based database
J Smetanková and T Mandičák170
Evaluation of the antimicrobial efficiency of slag based composites
M Smolakova and H Vojtkova177
The Influence of corrosion on the stresses in members of open deck railway bridges

Proposal of utilized to the lift for evacuation of persons

M Szénay....191

R Štecák.....184

How and where to use technology of laser scanning and aerial photogrammetry for building purposes – case study
M Tkáč200
Analysis of current situation in field of LCA.
Ž Tomková and S Vilčeková206
<u>Heating demand – simulation and calculation</u>
P Turcsanyi215
Assessment of shear capacity of concrete bridge deck slabs using theoretical formulations and FEM analysis
A Vidaković and J Halvonik221

Zero house by 3D printer technology

I Wawrek.....228