20th Inter-Institute Seminar for Young Researchers

and

Jubilee Session for Professor Zenon Waszczyszyn

Programme

October 9-10, 2015

Cracow, Poland

Friday, October 9, 2015

9:00 — 9:35 Keynote lecture

9:00 — 9:35 **B. Pichler , M. Irfan-ul-Hassan, R. Reihsner, M. Königsberger, Ch. Hellmich, H. Mang:** Multiscale structural analysis 15

9:35 — 10:35 Session 1

9:35 — 9:55 **T. Forgács, V. Sarhosis, K. Bagi:** Discrete element analysis of skewed masonry arches 16

9:55 — 10:15 **M. German, J. Pamin:** Three-dimensional FE simulation of corroded beam in 3-point bending 17

10:15 — 10:35 **T. Schlappal , M. Schweigler, B. Pichler:** Structural behavior of concrete hinges experimental results and mechanical model 18

10:35 — 11:00 Break, transfer to Senate Hall of CUT

11:00 — 12:45 Jubilee Session on the occasion of Prof. Z. Waszczyszyn's 80th birthday

11:00 — 12:00 Jubilee addresses

12:00 — 12:45 **Z. Waszczyszyn, E. Pabisek, P. Nazarko, Ł. Ambroziński, P. Paćko, T. Uhl:** A hybrid computational system for identification of elastic thin plates parameters using Lamb waves propagation and Artificial Neural Networks 19

13:00 — 14:00 Lunch

14:00 — 14:35 Keynote lecture

14:00 — 14:35 **F. Kovács, K. Hincz, A. Lengyel, T. Tarnai:** From pneumatic beams to woven baskets: adventures on the surface of cuboids 23

14:35 — 15:15 Session 2

14:35 — 14:55 **S. Czarnecki:** A stress-based approach in free material design 24

14:55 — 15:15 **D. Ziaja, K. Lech, B. Miller:** Rotational stiffness of a node as an updated parameter of a numerical model of the two-storey portal frame 25

15:15 —15:35 Coffee break

15:35 — 16:55 Session 3

15:35 — 15:55 **H. Kariem, J. Füssl, Ch. Hellmich:** Dual-scale porosity analysis of bricks with different pore-forming agents and concentrations 26

15:55 — 16:15 **W. Lederer, T. Bader, J. Eberhardsteiner:** Ductility of the embedment behavior of steel dowels in wood permanent deformations and the influence of reinforcements 27

16:15 — 16:35 **M. Pastrama, S. Scheiner, P. Pivonka, Ch. Hellmich:** A multiscale systems biology approach for computer simulation-based prediction of bone remodeling 28

16:35 — 16:55 **M. Klimczak, W. Cecot:** Modeling of heterogeneous materials using hp-adaptive FEM and local numerical homogenization 29

19:00 — Banquet (Restaurant “Boscaiola”, Szewska 10, west of main Market Square)

Saturday, October 10, 2015

9:00 — 9:35 Keynote lecture

9:00 — 9:35 **W. Cecot, M. Oleksy, M. Krówczyński:** Homogenization by the multigrid technique 30

9:35 — 10:35 Session 1

9:35 — 9:55 **R. Nagy, Z. Gáspár:** Portable tent structure variations for flood protection 31

9:55 — 10:15 **B. Balogh, J. Lógó:** Optimization of curved plated structures with the Finite Strip and Finite Element methods 32

10:15 — 10:35 **J. Orkisz, M. Głowacki:** Advances in improving efficiency of evolutionary algorithms for large optimization problems 33

10:35 — 11:00 Coffee break

11:00 — 12:00 Session 2

11:00 — 11:20 **A. Perduta:** Isogeometric analysis: important NURBS properties 34

11:20 — 11:40 **S. Pavlicek, H.A. Mang, X. Jia:** The consistently linearized eigenproblem and its impact on an energy ratio 35

11:40 — 12:00 **M. Hazay:** Comparison of results of isotropic and anisotropic beam models to results obtained by 3D Finite Element simulations 36

12:00 — 13:00 Lunch