The 21st International Conference on Computer Methods in Mechanics & The 3rd Polish Congress of Mechanics, 8-11 September 2015, Gdańsk

The 21st International Conference on Computer Methods in Mechanics (CMM), organized jointly with the 3rd Polish Congress of Mechanics (PCM), took place in Gdańsk on 8-11 September 2015. All of the information about the PCM-CMM-2015 Congress is available at the website http://www.pcm-cmm-2015.pg.gda.pl/.

The decision to merge the CMM & PCM scientific events in 2015 was made conjointly by the Board of Polish Association for Computational Mechanics (PACM) and the Board of Polish Society of Theoretical and Applied Mechanics (PSTAM). The bi-annual CMM conferences held since 1974 are mainly focused on computational methods applied to the problems of mechanics and engineering practice. The idea of PCM dates from 2005 and the recent intention of the fusion of PCM and CMM was to present a state-of-the-art knowledge in the wide do of mechanics including inter-disciplinary problems, and to trigger a discussion and debate on development perspectives of mechanics and related fields.

The following institutions were organizers of the Congress: Polish Society of Theoretical and Applied Mechanics, Polish Association for Computational Mechanics, Institute of Fundamental Technological Research of the Polish Academy of Sciences (PAS), Committee on Mechanics of the PAS, Committee on Civil Engineering and Hydroengineering of the PAS, Committee on Machine Building of the PAS, Institute of Fluid-Flow Machinery of the PAS and Gdańsk University of Technology.

Honorary patronage of the Congress was held by: Minister of Science and Higher Education of the Republic of Poland, Marshal of the Pomorskie Voivodeship, Rector of Gdańsk University of Technology, Director of the Institute of Fluid-Flow Machinery PAS. The sponsorship of the Congress assured its high organization level, these were: Energa Group, Ministry of Science and Higher Education of the Republic of Poland, and SOFiSTiK. The media patronage was held by Acta Energetica Quarterly.

The Congress President was Prof. Michał Kleiber, Congress Vice-President – Prof. Włodzimierz Kurnik, Chairman of the Scientific Committee – Prof. Tadeusz Burczyński, Vice-Chairman of the Scientific Committee – Prof. Krzysztof Wilde, Chairman of the Permanent Congress Committee – Prof. Arkadiusz Mężyk and Prof. Zbigniew Kowalewski, Honorary Chairman – Prof. Witold Gutkowski. The Congress Honorary Committee consisted of 16 members, International Advisory Board – 26 members, and Scientific Committee – 60 members. In the opening ceremony the GUT was represented by the Vice-Rector for Scientific Research, Prof. Józef Sienkiewicz, the representatives of scientific associations were Prof. Viggo Tvergaard (President of IUTAM) and Prof. Ekkehard Ramm (President of ECCOMAS).

The Organizing Committee was mainly composed of workers of the Department of Structural Mechanics, Faculty of Civil and Environmental Engineering, GUT. The Organizing Committee Chairman was Prof. Jarosław Górski, the Secretaries were Dr. Karol Winkelmann and Mr. Łukasz Smakosz. Dr. Agnieszka Sabik and Dr. Marek Skowronek fulfilled important roles in the team. The 19-member Organizing Committee featured the Vice-Chairmen: Prof. Paweł Kłosowski and Prof. Jacek Pozorski (IFFM, PAS). The Congress of Mechanics instigated a

Figure 1: Before the opening ceremony of PCM-CMM-2015 Congress (from left to right): Prof. Jarosław Górski (Chairman of OC), Prof. Krzysztof Wilde (Vice-Chairman of SC), Prof. Józef Sienkiewicz (Deputy Rector for Science, GUT), Prof. Michał Kleiber (Vice-President of European Academy of Sciences and Arts), Prof. Tadeusz Burczyński (Chairman of Committee on Mechanics PAS), Prof. Ekkehard Ramm (President of ECCOMAS), Prof. Viggo Tvergaard (President of IUTAM), Prof. Zbigniew Kowalewski (President of PSTAM), Prof. Mieczysław Kuczma (President of PACM)

Figure 2: The O.C. Zienkiewicz Medal Awarding Ceremony (from left to right): Prof. Tadeusz Burczyński, Prof. Tomasz Łodygowski, Prof. Waldemar Rachowicz, Prof. Ekkehard Ramm, Prof. Michał Kleiber, Prof. Mieczysław Kuczma
broad interest among scientists and engineers of Polish and international affiliations. There were 650 registered participants at the Congress website (Poland – 518, abroad – 132), then 531 submissions (Poland – 441, abroad – 90), and finally 510 participants took part in the Congress who gave 495 presentations in 9 parallel sessions at the GUT and the IFFM, PAS.

The diversity of the Congress topics is mirrored in the titles of 11 general lectures: Jorge Ambroşio (Technical University of Lisbon, Portugal), Interaction Between Mechanical Systems and Continuum Mechanics Models in the Framework of Biomechanics and Vehicle Dynamics; Marc Geers (Technical University of Eindhoven, The Netherlands), Multiscale Mechanics of Metamaterials; Reinhold Kienzler (University of Bremen, Germany), Consistent Plate Theories - a Matter Still Not Settled?; Tomasz Kowalewski (IFTR PAS, Poland), Nanoscale challenges of fluid mechanics; Zbigniew Kowalewski (IFTR PAS, Poland), Experimental Attempts for Creep and Fatigue Damage Analysis of Materials - State of the Art and New Challenges; Mieczysław Kuczma (Poznan University of Technology, Poland), Shape Memory Materials and Structures: Modelling and Computational Challenges; Tadeusz Kurtyka (CERN, Switzerland), Advanced Mechanics in High Energy Physics Experiments; Waldemar Rachowicz (Technical University of Kraków, Poland), Finite Element Method Simulations of Linear and Non-linear Elasticity Problems with Error Control and Mesh Adaptation; Ekkehard Ramm (University of Stuttgart, Germany), Hierarchic Isogeometric Analyses of Beams and Shells; Alfredo Soldati (University of Udine, Italy), Computation and Physics of Turbulent Dispersed Flows; Viggo Tvergaard (Technical University of Lyngby, Denmark), Finite Strain Analyses of Deformations in Polymer Specimens.

The Congress was composed of 25 Mini-Symposia, proposed by renowned scientists from Poland and abroad, covering all submitted oral presentations. Three jubilee sessions were organized during the Congress: the 80th birthday of Prof. Janusz Orkisz and the 80th birthday of Prof. Zenon Waszczyzyn, as well as the 60th anniversary of scientific work of Prof. Czesław Woźniak. Another session was to commemorate Prof. Józef Joachim Telega, who passed away 10 years ago. An important event was the O.C. Zienkiewicz Medal Awarding Ceremony that took place in the Polish Baltic Philharmonic Hall in Gdańsk, before the concert of the Gdańsk Chamber Orchestra conducted by Prof. Paweł Kukliński. The Medal was established by the PACM in 2007, and was named in the name of Professor Olgiert Zienkiewicz, the prominent British – of Polish descent – academic, mathematician, and civil engineer. The 2015 laureates are:

- **Prof. Tomasz Łodygowski** – for the whole of activity
- **Prof. Waldemar Rachowicz** – for outstanding achievements during recent 2 years
- **Prof. Ekkehard Ramm** – for foreign scientists of particular merit for the development of computational mechanics in Poland.

The awards were presented by Prof. Michał Kleiber (Commander of the Medal Chapter) and Prof. Tadeusz Burczyński (Chancellor of the Medal Chapter), during the ceremony conducted by Prof. Mieczysław Kuczma (President of PACM). The Prof. Jan Szmelter Award for young researchers was included in the Congress programme. The Jury chaired by Prof. Paweł Klosowski awarded two authors for the best oral presentations and one author for the best poster. The laureates were: Tomasz Gajewski (Poznan University of Technology, Poland), Richard Ostwald (Technical University Dortmund, Germany), and Marek Paruch (Silesian University of Technology, Poland), respectively.

The two-page abstracts of 504 presentations were printed in two 500 page volumes of the Congress proceedings plus at the Congress website and were reviewed by the Scientific Committee members of the Congress. Participants had the opportunity to submit extended papers to the post-conference book, to be published by CRC/Balkema (Taylor & Francis Group) in March 2016. A separate editorial procedure classified approximately 132 papers.

The PCM-CMM-2015 Congress was a successful, well-organized scientific event. The fusion of PCM and CMM into a joint scientific event proved effectively feasible and fruitful and will be continued in the future. The next, 22nd International Conference on Computer Methods in Mechanics will take place in Lublin in 2017, and a joint event of the 23rd CMM and the 4th Polish Congress of Mechanics will be held in Cracow in 2019.

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**Short Course on Mechanics of Random and Fractal Media**

The Short Course on Mechanics of Random and Fractal Media was held at the Poznan University of Technology on 25-26 June 2015 in Poznań, Poland. The instructor of the course — Prof. Martin Ostoja-Starzewski from the University of Illinois at Urbana-Champaign, USA — gave 12 lectures concerned with, inter alia, the stochastic geometric models of microstructures, mesoscale bounds for random elastic linear and nonlinear media, as well as mechanics of fractal media via dimensional regularization. The course was organized by a team of PACM members (Mieczysław Kuczma, Magdalena Łasecka-Plura, Katarzyna Rzeszut, Monika Chuda-Kowalska) and supported by the Rector of Poznan University of Technology, Prof. Tomasz Łodygowski. Some 20 young scientists from the Czech Republic, Germany and Poland participated in the course.