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(Editors)**

## **Selected Topics of Contemporary Solid Mechanics**



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Coupled Problems: Solid–Fluid, Thermo-Dynamics and Smart Structures (*J. Holnicki-Szulc, W. Ostachowicz*)

Computational Aspects of Solid Mechanics and Applications (*T. Burczyński, M. Pietrzyk*)

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# Preface

This book contains extended abstracts of papers presented at the 36th Solid Mechanics Conference held in Gdańsk, Poland, on September 9–12, 2008. The Conference was organized by Institute of Fundamental Technological Research of the Polish Academy of Sciences. It follows the traditionally organized series of conferences initiated by the 1st Polish Solid Mechanics Conference in 1953. During the conferences a large number of prominent researchers visited Poland, presented their recent results and established permanent cooperation with Polish partners, often resulting with valuable joint research results. Such joint papers are also published in this volume.

The progress in mechanics, both theory and technology, is so rapid that every two years the Conference is organized we are forced to pay attention to new ideas in all areas of solid mechanics. This time the conference concentrated on such fields as: biomechanics, micromechanics, geo-mechanics, elastic-plastic continuum and other field theories of solids, fracture and damage mechanics and fatigue of advanced materials, thermomechanics, phase transitions and shape memory materials, mechanics of structures and optimization, shells – theory and computations, coupled problems – thermodynamics of solid–fluid systems, smart structures and computational aspects of solid mechanics and applications. These problems were presented in ten Solmech 2008 sessions and are now presented in ten main parts of this volume, with eight general lectures included in the parts according to their subject.

Two special sessions are dedicated to Professors Wojciech K. Nowacki and Bogdan Raniecki on the occasion of their 70 birthdays. They made significant scientific contributions to several branches of solid mechanics and educated a large number of researchers. Many friends and colleagues around the world have contributed to their Anniversary Solmech Sessions: Elastic-Plastic Continuum and other Field Theories dedicated to Professor Wojciech Nowacki and Thermomechanics, Phase Transitions and Shape Memory Materials dedicated to Professor Bogdan Raniecki.

The papers published in this volume are the result of extensive work of their authors, covering wide area of the contemporary mechanics. The publication would not be possible without consistent efforts of members of the Solmech 2008 Committees and the sessions' organizers. The editors are grateful to the authors of conference presentations for careful preparation of the manuscripts and all our colleagues involved in organization of the conference for their continued support and help.

Zbigniew Kotulski  
Piotr Kowalczyk  
Włodzimierz Sosnowski

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