

# SYROM 2009

## The 10th IFToMM International Symposium on Science of Mechanisms and Machines, SYROM 2009 <http://www.arotmm.ro/syrom2009/> Brasov, Romania, October 12 - 15

The International Symposium on Science of Mechanisms and Machines, SYROM 2009, at its 10<sup>th</sup> edition, continues the tradition of scientific events devoted to the specific problems of the design, modelling, simulation, optimization and control of the mechanical systems. These events were organized every 4 years, since 1973, by the Romanian Association for the Mechanisms and Machine Science ARoTMM, aiming from the very beginning to gather international researchers, academics, professionals and students working in the field of mobile mechanical and mechatronic systems and to support scientific dissemination and experience exchange.

The initiator and organizer of the first 6 editions of the SYROM symposium was professor Nicolae I. Manolescu, internationally recognized scientists, founding member of the International Federation for the Promotion of Mechanisms and Machine Science IFToMM and of ARoTMM. For the first time outside the Politehnica University of Bucharest, SYROM was hosted this year by the Transilvania University of Brasov, and took place during 12 - 15 October 2009. Keeping track with the scientific development, the SYROM topics enlarged during time by including the novel trends and research directions, therefore the areas addressed now are including, besides Mechanisms and Machines, also Command and Control, Applications in High-Tech Products along with Current Trends in Education. Considering the needs for a knowledge based society, a special attention was given to the high level applications of the concepts, models and to the contribution in development integrated virtual prototyping platforms.

At the 10<sup>th</sup> edition we received 79 papers, and after an international peer-review process, 61 papers were accepted for presentation and publication in the Symposium Proceedings edited at Springer Publishing House.

The total number of participants at SYROM 2009 was of 58, from Germany, France, Italy, Poland, Spain, USA, Russia and Romania.

The event included scientific and awarding activities as follows:

- **Plenary lectures**, delivered by worldwide recognized personalities, who presented substantial synthesis of achievements in the field, formulated the direction of interest for the years ahead and highlighted outstanding achievements. Four Plenary speakers brought their contribution to this event: Prof. Dr. Eng. Marco Ceccarelli, University of Cassino and IFToMM President, Prof Dr. Eng. Burkhard CORVES, RWTH Aachen and the chairman of IFToMM TC Linkages and Cams, Prof. Dr. Eng. Nicolae Orlandea - University Ann Arbor, Michigan, USA and Prof. Dr. Eng. Ion VISA, ARoTMM and SYROM chairman.



- **Oral presentations** of recent research results; the papers topic aim, particularly to the mechanisms approached as multibody systems (MBS), applicable in the conceptual

design of mechanisms, kinematics and dynamic analysis, modelling and simulation, synthesis and optimization. Current research in this area combines techniques as modelling - Digital modelling - Virtual Prototyping in the sustainable development concept, thus enabling the simultaneous evaluation of the shape, mounting / assembly, functionality and sustainability of the systems and their impact on the environment. The modern concepts lately developed are mirrored by the symposium topics, focusing on the overall approach and relationship with the environment (and not separate components and subsystems). The integrated approach of the mechanical, electrical, hydraulic, electronic systems represents the path for analysing and optimizing the functionality of the entire product. Good examples are the mechatronic systems, which in addition to the mechanics involve the actuation, command / control and the eco-design; they can be found in high-tech products, in advanced applications as there are renewable energies and robotics.

- The symposium hosted a special event of Transylvania University of Brasov: the awarding ceremony of the **Doctor Honoris Causa distinction to Prof. Marco Ceccarelli** professor at the University of Cassino, for his contribution and continuous support of the Romanian Association for the Mechanism and Machine Science ARoTMM.



- The symposium honoured IFToMM members with exceptional results in mechanisms science, for the year 2009: **the Award of Merit to Florea Dudița**, professor at Transylvania University in Brasov, **the Dedicated Service Award to Professor Tian Huang**, Tianjin University, China and **the Honorary ARoTMM Diploma to Paun Antonescu** professor at Polytechnic University of Bucharest and former ARoTMM chairman.



- The **workshop** organized by **IFToMM Technical Committee for Linkages and Cams**, moderator professor Corves; the workshop agenda focused on the presentation of recent and future activities in the field - round tables and conferences and on the preparation of the 2011 IFToMM World Congress.

In the end, further openings were identified and one of the most important is the proposal of a new Technical Committee for Renewable Energy Systems.

SYROM 2009 is now ended; it is time now to prepare further international events, gathering the researchers and professionals in the field of machines and mechanisms, struggling for involvement in the development of novel, advanced concepts and applications.

SYROM 09 Chairman  
Prof. dr. eng. Ion VISA