

# Preface

The international conference on the theory of machines and mechanisms has been held since 1973 in regular 4-year intervals. The expert agenda of the conference focuses on a wide range of problems including theoretical and practical findings related to theories pertaining to machines and mechanisms. The person involved in the creation of this conference was an important personality and leading expert in mechanics and mechanism theories—Prof. Jaroslav Charvát. He was not only a renowned expert regarding mechanism theories, but he was also an excellent teacher and promoter of mechanics for the professional and lay public.

The 11th International Conference on the Theory of Machines and Mechanisms was held from 4 to 6 September 2012 at the Liberec Technical University, Liberec, Czech Republic. The conference was organized under the auspices of the Czech National Committee for Theories of Machines and Mechanisms IFToMM, the Czech Society for Mechanics, and the Textile Machines Research Institute Liberec. The lectures focused particularly on the areas of analysis, synthesis of articulated, cam, planar, and spatial mechanisms.

A major part included a focus on problems related to the dynamics of machines and mechanisms as well as mechatronic and biomechanical systems. Robotic systems were another major focus of the conference.

During the conference, the Meeting of the Technical Committee for Linkages and Mechanical Controls of IFToMM and the Meeting of the Czech Society for Mechanics took place.

In this book contributions from the conference have been included in seven main sections:

- General Theory of Machines and Mechanisms
- Analysis and Synthesis of Planar and Spatial Mechanisms, Linkages, and Cams
- Dynamics of Machines and Mechanisms, Rotor Dynamics, Vibration and Noise in Machines, Computational Mechanics
- Robots and Manipulators

- Biomechanics
- Optimization of Mechanisms and Machines, The Mechanisms of Textile Machines
- Mechatronics, Control and Monitoring Systems of Machines

As it has for more than 39 years, this volume of proceedings offers both a broad perspective on the state of the art in the field as well as an in-depth look at its leading edge research. It is our privilege to be able to offer this collection and we express our sincere thanks to the contributing authors for making this series a continuing success.

We appreciate the interest in this conference and believe it will bring many suggestions for further extension of knowledge in the field of machines and mechanisms theory and will provide new ideas for international cooperation in this field.

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