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Paulo Flores · Fernando Viadero
Editors

New Trends in Mechanism and Machine Science

From Fundamentals to Industrial
Applications

 Springer

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Preface

EUCOMES 2014 is the fifth event in a series that was started in 2006, under the Patronage of IFToMM, International Federation for the Promotion of Mechanism and Machine Science. The aim of the conference is to bring together European researchers, industry professionals, and students from the broad range of disciplines referring to Mechanism Science, in an intimate, collegial, and stimulating environment.

The EUCOMES conference began in February 2006 in Obergurgl (Austria), and has continued subsequently in Cassino (Italy) in September 2008, Cluj-Napoca (Romania) in September 2010, and Santander (Spain) in September 2012. The 2014 edition is organized by the Center for Mechanical and Materials Technologies (CT2M) and the Department of Mechanical Engineering (DEM) of the Engineering School of the University of Minho in Guimarães, Portugal, from 16 to 19 September 2014.

This book compiles the most recent research results in mechanism science, intended to reinforce and improve mechanical systems in a variety of applications in daily life and industry. This book is published under the Machine and Mechanism Science series and addresses issues related to: Theoretical kinematics, Computational kinematics, Mechanism design, Experimental mechanics, Mechanics of robots, Dynamics of machinery, Dynamics of multibody systems, Control issues of mechanical systems, Mechanisms for biomechanics, Novel designs, Mechanical transmissions, Linkages and manipulators, Micromechanisms, Teaching methods, History of mechanism science, and Industrial and nonindustrial applications.

EUCOMES 2014 received more than one hundred submissions, and after a rigorous review process by at least two reviewers for each paper, 100 papers were accepted for oral presentation at the conference and are included in this book.

We express our grateful thanks to IFToMM, Portuguese Association of Theoretical, Applied and Computational Mechanics (APMTAC), the Department of Mechanical Engineering of the University of Minho, the members of the International Scientific Committee for their cooperation: Prof. Bukhard Corves (Germany), Prof. Doina Pisla (Romania), Prof. Fernando Viadero (Spain), Prof. Jean-Pierre Merlet (France), Prof. Manfred Husty (Austria), Prof. Marco Ceccarelli (Italy),

Prof. Paulo Flores (Portugal), and Prof. Teresa Zielinska (Poland), the members of the Award Committee and the members of the Honorary Committee.

We also want to express our gratitude to all the authors for their interest in participating in EUCOMES 2014 and for writing the manuscripts in a timely manner, allowing this conference to be a reality in a short period of time.

We thank all anonymous and volunteer reviewers for their outstanding work, which allowed the Conference Springer Book to be published as scheduled.

We thank the University of Minho for hosting the EUCOMES 2014 conference and we express our deepest gratitude to The Local Organizing Committee: Eurico Seabra, João Mendonça Silva, José Machado, Luís Ferreira da Silva, Mário Lima, Nuno Peixinho, Paulo Flores (Chairman), Pedro Souto, and Sara Cortez.

Guimarães, June 2014
Santander

Paulo Flores
Fernando Viadero

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