

# Preface

ISRM 2015, IFToMM International Symposium on Robotics and Mechatronics, is the fourth event of a series that started in 2009 as a specific conference activity on robotics and mechatronics. The first event was held at the Hanoi University of Science and Technology, Vietnam in September 2009, the second was held at Shanghai Jiao Tong University, Shanghai, China in November 2011, and the third was held at the Nanyang Technological University, Singapore in October 2013.

The aim of the ISRM symposium is to bring together researchers, industrialists, and students involved in a broad range of disciplines related to Robotics and Mechatronics, in an intimate and stimulating environment in order to disseminate their results and to exchange about future works, trends, and challenges.

ISRM 2015 received more than 40 papers, and after careful review with at least two reviews for each paper, 31 papers were considered suitable for publication in this book and were presented in the conference. The oral presentations were organized into a 2-day conference with seven technical sessions held from 24 to 25 June in University of Poitiers, France.

The ISRM 2015 proceeding presents state-of-art research findings in robotics and authored mainly from the IFToMM community from China, France, Greece, Italy, Kazakhstan, Mexico, Morocco, Russia, Singapore, Spain, Taiwan, Tunisia, and United States of America. Major topics of the papers are related with robotics and mechatronics, including but not limited to: mechanism design, modeling and simulation, kinematics and dynamics of multibody systems, control methods, navigation and motion planning, sensors and actuators, bio-robotics, micro/nano-robotics, complex robotic systems, walking machines, humanoids, parallel kinematic structures: analysis and synthesis, smart devices, new design, application, and prototypes.

In conjunction with ISRM 2015, a technical day “Open and Collaborative Robotics” was held. The aim was dedicated to highlight developments and research advances in industrial robotics and automation, covered by industry professionals, professors, and researchers working on collaborative robotics issues. This technical

day was co-organized by B&R Automation and Pprime institute of the University of Poitiers on Tuesday 23 June at the Futuroscope campus in Poitiers

We would like to express grateful thanks to the members of the current International Scientific Committee for ISRM Symposium for cooperating enthusiastically for the success of the 2015 event:

I-Ming Chen (Singapore) as Chair of the IFToMM Technical Committee on Robotics and Mechatronics

Marco Ceccarelli (Italy)

Feng Gao (China-Beijing)

Manfred Hiller (Germany)

Qiang Huang (China-Beijing)

Shuo-Hung Chang (China-Taipei)

Nguyen Phong Dien (Vietnam)

Lotfi Romdhane (Tunisia)

Yukio Takeda (Japan)

Min-June Tsai (China-Taipei)

Nguyen Van Khang (Vietnam)

Saïd Zeghloul (France)

Teresa Zielinska (Poland)

We thank the authors who have contributed with very interesting papers on several subjects, covering many fields of Robotics and Mechatronics and additionally for their cooperation in revising papers in a short time in agreement with reviewers' comments. We are grateful to the reviewers for the time and efforts they spent in evaluating the papers with a tight schedule that has permitted the publication of this proceedings volume in time for the symposium.

We thank University of Poitiers, in particular, the Fundamental and Applied Science Faculty, for having hosted the ISRM 2015 event.

We also thank the support of International Federation for the Promotion of Mechanism and Machine Science (IFTToMM). The symposium received generous support from local sponsors, namely the University of Poitiers, The Grand Poitiers, The Poitou-Charente region, and the industrial partner B&R Automation, which were critical to make this symposium of low registration cost possible.

We thank the publisher Springer and its Editorial staff for accepting and helping in the publication of this Proceedings volume within the book series on Mechanism and Machine Science (MMS).

Poitiers  
June 2015

Saïd Zeghloul  
Med Amine Laribi  
Jean-Pierre Gazeau

Robotics and Mechatronics

Proceedings of the 4th IFToMM International  
Symposium on Robotics and Mechatronics

Zeghloul, S.; Laribi, M.A.; Gazeau, J.-P. (Eds.)

2016, X, 322 p., Hardcover

ISBN: 978-3-319-22367-4