

# Micromechanics and Microactuators

# MECHANISMS AND MACHINE SCIENCE

Volume 2

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Gondi Kondaiah Ananthasuresh · Burkhard Corves ·  
Victor Petuya

Editors

# Micromechanics and Microactuators

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# Preface

The Workshop on Microactuators and Micromechanisms (MAMM 2010) is the first event of collaboration between the Technical Committee on Linkages and Mechanical Controls and the Technical Committee on Micromachines of the International Federation for the Promotion of Mechanism and Machine Science (IFTToMM) that was held in 2010 at RWTH Aachen University, organized by the Department of Mechanism Theory and Dynamics of Machines.

The scope of the workshop was to bring together scientists, industry experts and students. It was aimed at providing a special opportunity for exchange of know-how and international collaboration in various disciplines related to microactuators and micromechanism technology. A follow-up workshop, MAMM 2012, will be held in January 2012 in Durgapur, India, to continue the successful interactions that were initiated in 2010. In addition to focusing on general topics of interest to microactuators and micromechanisms, MAMM 2012 will have a special session on microsurgery, possibly with a direct involvement of surgeons who will share their needs and research interests.

The book is published in the Springer series “Machine and Mechanism Science” and contains peer-reviewed papers of the aforementioned workshop. The most recent research results in microactuators and micromechanism technology are presented in this book. The topics covered range from a piezoactuator-driven microrobot to an in-pipe micro mobile robot using peristaltic motion and from cell-grasping compliant mechanisms to a kinematics study of protein chains and the simulation of their motion.

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G. K. Ananthasuresh (Indian Institute of Science, Bangalore, India), Burkhard Corves (RWTH Aachen University, Germany), Amitabha Ghosh (Indian Institute of Technology, Kanpur, India), Antoni Gronowicz (Wroclaw University of Technology, Poland), Erwin-Christian Lovasz (University of Timisoara, Romania) Karl-Heinz Modler (Technical University Dresden, Germany), Victor Petuya (University of the Basque Country, Bilbao, Spain), Hidetsugu Terada (University of Yamanashi, Japan), Srikar Vengalattore (McGill University, Montreal, Canada),

Yao Yan-An (Beijing Jiaotong University, P.R.China), Lena Zentner (Technical University Ilmenau, Germany).

We thank the authors who have contributed excellent papers on various subjects covering a broad range of topics within the scope of the workshop. Also, we extend our thanks to the reviewers for the time and effort that they spent during the review process. Finally, our thanks are also with the personnel at Springer namely Nathalie Jacobs for their excellent and editorial support.

Aachen, Summer 2011

Gondi Kondaiah Ananthasuresh  
Burkhard Corves  
Victor Petuya

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