

Preface

A posse ad esse—From possibility to actuality

This book is the first of a subseries of contributions in the field of medical and service robots and their specific applications regarding the New Trends in Medical and Service Robots, within the Mechanisms and Machine Science Series, meant to be published yearly starting with 2013.

This first book has the subtitle—*Theory and Integrated Applications*, and the idea came from the International Exploratory Workshop—*New Trends in Medical and Service Robots* which took place in 2012 in Cluj-Napoca, Romania. The workshop put together scientists from many European countries. The high value of the scientific contributions has determined a rigorous selection and improvement based on the participants' exchange of opinions and a peer-review process. The result is a collection of 16 independent valuable contributions and points of view and not simply a standard symposium or conference proceedings.

The fundamentals of this book is to reunite a nucleus of researchers from the European academic community, with complementary competences, anchored in the scientific state-of-the-art, willing to disseminate the latest and most original trends in medical and service robots (computational kinematics, mechanism design, linkages and manipulators, mechanisms for biomechanics, mechanics of robots, control issues for mechanical systems, novel designs, teaching methods, etc.). From this perspective, the book contains the elements of a special issue of a scientific journal, clearly pointing out the thematic fields of research promoted in the European Research Framework and the emerging area:

- Robotic systems for personal assistance for rehabilitation and daily activities;
- Robotic assisted minimally invasive medical applications;
- Modular, mobile, and reconfigurable robotic systems;
- Service robotic for academic and research institutions;
- Service robots for space and security applications.

We would like to express our gratitude to the authors and to the reviewers for the time, effort, and sharing their knowledge with a single purpose to improve the book quality for printing.

We are also grateful to Nathalie Jacobs, Anneke Pot, and the staff of Springer for their excellent editorial support.

We would like to believe that this issue will be the most modest contribution to the series *New Trends in Medical and Service Robots* and a stimulus for the next books to be better as well as a continuous source for further development and scientific discussion within this still growing branch of mechanical engineering.

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Theory and Integrated Applications

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