

# Research in Interactive Design (Vol. 4)

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Editors

# Research in Interactive Design (Vol. 4)

Mechanics, Design Engineering  
and Advanced Manufacturing

 Springer

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# Instructions

*Research in interactive Design – Vol. 4* presents the last successful developments in Interactive and Integrated Product Design and Manufacturing. *Research in interactive Design – Vol. 4* is a publication addressed to all researchers, industrial experts and teachers interested in the implementation of efficient solutions to support decision making in product engineering and to improve industrial innovation.

The book includes 10 main chapters. They are referencing exhaustive works being displayed in the second part of the book. 81 full papers foster the main argumentation. These articles written by high experts of product design and manufacturing were presented during the 2014 Joint Conference on Mechanical Design Engineering and Advanced Manufacturing.

All full papers are referenced and identified in the main argumentation according to the following presentation:

**Title:** Article Title

**Authors:** list of authors.

**Key Words:** key words.

Details on the results, process and solutions related to a specific topic of Interactive Design and Manufacturing.

**Paper Number:** ID, **Page:** pp.

# Acknowledgement

We wish to start this section by sincerely thanking all the authors for their high-quality contributions integrated within the present manuscript *Research in Interactive Design – Vol 4*.

The high quality of different technical and scientific argumentations is ensured thanks to the realization of manuscript reviews realized by an international committee of experts. These prestigious researchers are sincerely gratefully for their involvement.

This book was not able to exist without the implication of the Chapter Editors. They were also the Track Chairs of the 2014 Joint Conference on Mechanical Design Engineering and Advanced Manufacturing.

Each of these persons are named at the beginning of each book chapter.

We benefit this short section to highlight the great involvement of representative of three organizations: Pierre Castagna, University of Nantes from AIP-PRIMECA (Ateliers Inter-établissements de Productique - Pôles de Ressources Informatiques pour la MECAnique) network from France, Gianmaria Concheri, University of Padua, Antonio Lanzotti, University of Naples, Vincenzo Nigrelli, University of Palermo, Stefano Tornincasa, Polytechnic University of Turin from the italian association ADM (Associazione Nazionale Disegno di Macchine) and Guillermo Peris-Fajarnés, Polytechnic University of Valencia, David Corbella, Polytechnic University of Madrid, Felix Sanz, University of Rioja from INGEGRAF (Asociación Española de Ingeniería Gráfica) from Spain.

# Preamble

From the year 2006, the book series *Research in Interactive Design* highlights original studies leading to solutions being able to foster industrial innovation.

These solutions are providing answers to all researchers, engineers or students looking for basic information on:

- original engineering processes and industrial organizations,
- new tools and softwares allowing experts to implement product engineering process in a virtual way,
- numerical methods leading to the interactive exploration of engineering spaces,
- new methodologies to model of knowledge and behaviours,
- new approaches for collaborative design and the systemic engineering.

The fourth volume of the book series *Research in Interactive Design* is addressing solutions either for product manufacturing or product designing. A new dimension related to the teaching of product design is also introduced.

The authors of *Research in Interactive Design Vol. 4* have gathered together the most significant articles on the original topic of interactive and integrated product engineering.

The reader will find enclosed the authors coming from the whole

world who have left their mark with their new proposals, often by demonstrating the impact of their own solutions by solving real industrial problems.

*Research in Interactive Design Vol. 4* is presenting the latest efficient approaches allowing innovation to be reinforced.

Pr. Xavier Fischer  
Editor-in-Chief of the book series  
*Research in Interactive Design*

A handwritten signature in black ink, appearing to read 'Xavier Fischer', written in a cursive style.

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