

Innovations of systems design

Advances in Mechanical Engineering
2017, Vol. 9(2) 1
© The Author(s) 2017
DOI: 10.1177/1687814017693693
journals.sagepub.com/home/ade



In a modern technological society, engineers and designers should work together with a variety of other professionals in their quest to find system solutions to complex problems. Mechanical engineering and design innovations are both academic and practical engineering fields that involve systematic technological materialization through scientific principles and engineering designs. Technological innovation by mechanical engineering includes IT-based intelligent mechanical systems, mechanics, and design innovations. IT-based intelligent mechanical systems, which implant intelligence to machine systems, are an interdisciplinary area combining conventional mechanical technology and new information technology. In order to discover new scientific knowledge relevant to these topics, the special collection of *Advances in Mechanical Engineering* entitled “Innovations of Systems Design” had been proposed to publish excellent research results about the subject.

In addition, International Conference on Applied System Innovation 2015 (ICASI 2015) was held in Osaka, Japan on 22–26 May 2015. There were 421 papers from nine countries presented in the conference. It provided a unified communication platform for researchers in a wide area of topics. This special collection selected 52 excellent papers about “Innovations of Systems Design” topic from ICASI 2015 and other high-quality papers that fit the topic of this special collection. The subjects of 52 papers include (1) intelligent mechanical manufacturing system, (2) mathematical

problems on mechanical system design, (3) smart electromechanical system analysis and design, (4) computer-aided methods for mechanical design procedure and manufacture, (5) computer and human-machine interaction, (6) Internet technology on mechanical system innovation, (7) various computational topics of methodologies and procedures of design, (8) machine diagnostics and reliability, and (9) human-machine interaction/virtual reality and entertainment.

The guest editors would like to thank the authors for their contributions to this special issue and all the reviewers for their constructive reviews. We are also grateful to Katrina Newitt, The Senior Peer Review Manager of SAGE Publishing, for her time and efforts in the publication of this special collection for *Advances in Mechanical Engineering*.

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