

CALL FOR PAPERS

Special issue of Computer-Aided Design
on

ADVANCED AND EMERGING VIRTUAL AND AUGMENTED REALITY TECHNOLOGIES IN PRODUCT DESIGN

Guest-editors:

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Virtual Reality (VR) and Augmented Reality (AR) are technologies that enhance human interfaces and visualizing capabilities, and lend themselves to new systems for design and engineering. Various systems have been developed including CAVE systems, reality theatres, power walls, holo-benches, individual immersive systems, HMDs, tactile sensing interfaces, haptic feedback devices, speech systems, and mixed reality technologies. A large number of VR systems have already found their ways into industrial applications. The most advanced ones can be found in the military, aerospace, aircraft and, automotive industry, and in the medical sector. VR and AR technologies have also been integrated with CAD, CAE, and CAM systems. Nevertheless, virtual reality is still an emerging field with many open issues, scientific and technological problems.

Herewith we announce a Special Issue on **Advanced and emerging virtual and augmented reality technologies in product design**. Objectives are to survey and evaluate affording technologies, computational solutions, and best applications from an industry perspective and to explore scientific research tracks into the future. Researchers and experts from academia, government, and industry are invited to share their knowledge and experience, by submitting survey, research, and application papers for this Special Issue.

Relevant topics:

We invite authors to submit fully reported and sufficiently validated paper in the areas described above, on the following topics:

- New frameworks for VR/AR and CAD/CAE/CAM integration
- New VR/AR technologies and methods targeting product design applications
- Multi-modal interfaces for product design applications and integration of modalities
- Emerging air-borne object generation, visualization, and manipulation techniques
- Emerging tactile sensing and haptic sensation techniques for VR-CAD/CAE systems
- Product and process simulation in VR-CAD/CAE environments
- Natural interaction based on cognitive approaches within virtual prototyping, manufacturing, assembly, testing, and life cycle support
- Computational issues (real time, accuracy, multitude rendering) of VR-CAD/CAE system
- Collaborative engineering and virtual presence in VR-CAD/CAE environments
- Intelligent and learning VR-CAD/CAE interfaces for product design applications
- Non-conventional design and engineering applications of VR-CAD/CAE systems

We welcome contributions from scientific communities of Virtual/Augmented Reality, Product Design, Virtual Engineering, as well as of other related domains.

Deadlines are as follows:

Submission of full papers:	31 March 2008
First decision notification:	31 May 2008
Submission revised papers:	31 July 2008
Final decision notification:	30 August 2008

Submission instructions:

All prospective authors are invited to obtain early feedback on possible submissions by e-mailing an abstract to the Guest Editors. All papers will be rigorously refereed by five peer reviewers of the Journal. Submission of a manuscript to this special issue of JCAD implies that no similar paper is already accepted or will be submitted to any other conference or journal. Authors should consult the “Instructions for Authors”, which are available online and printed at the back of most issues of Computer-Aided Design, for information about preparation of their manuscripts. Papers of an appropriate standard not included in the special issue may be considered for publication in a regular issue of Computer-Aided Design. Manuscripts should be submitted through the Elsevier publication management system for the CAD Journal: <http://ees.elsevier.com/cad/>. Please prepare your paper following the Guide for Authors available from the Author Gateway, <http://authors.elsevier.com/journal/cad>. Please submit your paper via <http://ees.elsevier.com/cad>, choosing **Advanced and emerging Virtual and Augmented Reality technologies in product design** as the Article Type (reference: VR-CAD/E).