

Special Issue on Solid Modeling Theory and Applications to Engineering

This Special Issue of JCISE is drawn from outstanding papers presented at the 2002 ACM Solid Modeling symposium. This is the second year that JCISE and ACM have collaborated to produce such a Special Issue, in what promises to become an annual tradition. Previously, JCISE V1, N4 (December 2001) contained selected papers from the 2001 symposium.

The ACM/SIGGRAPH Symposia on Solid Modeling and Applications provide a premier international forum for the exchange of original research results and important practical applications in all areas of solid modeling and its applications. The symposia series brings together leading researchers, practitioners and graduate students working in this field. The seventh ACM Symposium on Solid Modeling and Applications was held at the Max Planck Institute for Informatics in Saarbruecken, Germany on June 17–21, 2002, the first to be held outside North America. The symposium was co-chaired by Hans-Peter Seidel of the Max Planck Institute and Vadim Shapiro of the University of Wisconsin, Madison, USA. The international program committee was co-chaired by Kunwoo Lee of Seoul National University, Seoul, Korea and Nicholas M. Patrikalakis of the Massachusetts Institute of Technology, Cambridge, Mass., USA. The program committee comprised of 25 leading experts on solid modeling theory and its applications from academia and industry working in 10 different countries from around the world. Previous symposia in this series were held in Austin, Texas, 1991; Montreal, Canada, 1993; Salt Lake City, Utah, 1995; Atlanta, Georgia, 1997; Ann Arbor, Michigan, 1999 and 2001. Starting with 2002, the Symposium is expected to be held annually, alternating in location between the USA and other countries within a two year period.

Ninety-three papers were submitted to the 2002 symposium and reviewed by one member of the program committee and at least three additional referees. Based on these review results, the program co-chairs selected 26 papers for plenary presentation and 17

papers for poster presentation at the symposium. From the 26 plenary papers, the program co-chairs selected 9 papers for this special issue of JCISE. The selection was based on quality and engineering relevance. All selected papers were updated and extended since the version published in the conference proceedings, and were reviewed again by at least two additional referees and revised accordingly. The topics of the papers selected cover the following solid modeling areas: editing of free-form surfaces with haptic methods; reverse engineering of surface models; meshing of implicit surfaces; topological frameworks for part families; free-form surface design; design of transport elements in complex aircraft structures; collaborative framework for part and assembly modeling; modeling of heterogeneous solids; and iso-surface extraction methods.

We wish to thank the authors for revising and extending their papers for this special issue of JCISE and the referees for their valuable comments, which improved the quality of the papers included. We hope that you the readers of JCISE will find these papers stimulating and interesting and that this will encourage you to participate in future solid modeling conferences and submit papers on this important area to these conferences and to regular issues of this *ASME Transactions*, JCISE, which also officially co-sponsored by ACM.

Kunwoo Lee
Seoul National University
Seoul, Korea

Nicholas M. Patrikalakis
Massachusetts Institute of Technology
Cambridge, Massachusetts, USA