

Preface

Since the sixties, numerical methods for solving complex multiphysic problems have undergone continuous improvements thanks to the availability of more and more powerful computers and the development of interactive robust software based on realistic material behavior and sophisticated algorithms. Like all other sectors of engineering sciences, the field of material forming simulation or “virtual forming” takes full benefit from these scientific and technological developments.

The NUMIFORM triennial international conferences series, introduced by the late Prof. O.C.Zienkiewicz in 1982, aim to provide a forum where recent advances and future directions in the numerical simulations of forming and manufacturing processes are discussed by scientists and engineers from academia and industry worldwide. The topics covered are of great interest not only for academics from theoretical and computational mechanics but also for professionals (engineers and researchers) from industry involved in traditional and novel forming and manufacturing technologies for conventional and emerging materials.

This twelfth edition of the NUMIFORM international conferences series (NUMIFORM2016) was held at University of Technology of Troyes (UTT) in France from July 4th to 7th 2016, co-organized with two renowned French companies in the field of virtual forming technologies: ESI Group and Transvalor SA. As the eleven previous editions of NUMIFORM international conferences series, this edition provides a forum for scientists and practicing engineers alike to present the latest findings in their research endeavor and at the same time to explore future research directions in the field.

In this proceeding, the reader can find 105 peer reviewed papers selected among the 199 oral presentations given during NUMIFORM2016. These papers are organized by topics following the sixteen topics of the conference.

We address our warm thanks to all the authors and participants to this twelfth edition of NUMIFORM international conferences series. In addition, our thanks are due to public and private sponsors who, through their financial support or their participation to the industrial exhibition, helped significantly the organization of this event: UTT, ESI Group, Transvalor SA, Région Champagne-Ardenne, Conseil Général de l’Aube, Grand Troyes, l’Association Française de Mécanique (AFM), MECAMAT, MK2i, Composite Integrity, QForm. Special thanks are due to the colleagues who organized and fully managed the papers submitted to their MS/IMS, as well as many colleagues from the international Scientific Committee, the Steering Committee and the Advisory committee who kindly performed the reviewing of some full papers. Many thanks are due to the colleagues from UTT/LASMIS, ESI Group and Transvalor SA involved in the practical organization of NUMIFORM2016.

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