

## Preface

The present volume of *Technische Mechanik* contains the proceedings of the

*2nd International Conference on Material Modelling (ICMM2)*

incorporating the

*12th European Mechanics of Materials Conference (EMMC12)*

which took place 31<sup>st</sup> August - 2<sup>nd</sup> September, 2011 at Mines ParisTech (Paris, France). The conference was organized by Mines ParisTech - Centre des Matériaux.

During the last decades material modelling has become a field of central scientific importance. With these conferences we intend to provide a forum for the discussion of a wide spectrum of aspects in the field of material modelling as initiated in 2009 in Dortmund with ICMM1.

Although there exist many workshops, meetings and colloquia on particular aspects, specific materials, and particular applications of material modelling, there was some need for a coherent conference series dedicated to material modelling in all its various facets. To this end, the aim of the conference series is to bring together researchers from various fields of material modelling to foster bridges between different disciplines including materials science, mechanics, physics, chemistry, etc. This provided an excellent opportunity for the interaction between scientists working in different branches of material mechanics.

342 persons from 35 different countries attended the conference with strong delegations from Germany (91), France (70), Italy (23), UK (16), Russia (15), the Netherlands (14), Poland (14), USA (14), the Czech Republic (13), Japan (11), and Sweden (11). The participation shows still a strong increase compared to the first conference of the series ICMM1 in Dortmund in 2009. This indicates a large interest for modelling and understanding the behaviour of materials. This research direction plays a crucial role in reaching sustainable growth thanks to an increased energetic efficiency and a higher durability and reliability of industrial equipments. The conference was therefore organized thanks to the support of the chair for *Durability of Materials and Structures for Energy* which was founded at *Mines ParisTech* and *Ecole des Ponts ParisTech* by EDF, the *Fondation Européenne pour les Energies de Demain* (FEED) and GRTgaz.

The delegates have enjoyed the historical buildings of *Mines ParisTech* and fruitful discussions in the Luxembourg park.

The third conference of the series will be organized in Warsaw September 8 - 11 in 2013.

The participants of the conference were asked to publish their results in the present format after the usual peer reviewing process. As a result we publish 46 contributions in this volume in alphabetical order after the leading author. All papers are also made available to everybody in electronic form on the site

[www.ovgu.de/techmech](http://www.ovgu.de/techmech)

or directly

[www.ovgu.de/ifme/zeitschrift\\_tm/02\\_HTML\\_Inhalt/2012.htm](http://www.ovgu.de/ifme/zeitschrift_tm/02_HTML_Inhalt/2012.htm)

In addition, the contributions will be optionally available in printed form and as a DVD. For ordering please contact the editorial office, see also [www.ovgu.de/techmech](http://www.ovgu.de/techmech)).

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Albrecht Bertram (editor of *Technische Mechanik*)

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