

## **Preface**

The present volume of Technische Mechanik contains the proceedings of the 1. International Conference on Material Modelling, which took place September 15th - 17th, 2009 at Westfalenhallen Dortmund, Germany.

During the last decades material modelling has become a field of central scientific importance. Although there exist many workshops, meetings, colloquia etc. on particular aspects, specific materials and particular applications, we felt, a single conference dedicated to material modelling in all its various facets was lacking. To this end, the aim of the conference was to bring together researchers from the various fields of material modelling including materials characterization, such as theoretical, experimental, analytical, numerical, and other methods. The intention here was to cover essentially all aspects of material modelling. This would provide the opportunity for interaction among and exchange between scientists working in different subareas of material mechanics who otherwise would not come into contact with each other.

ICMM1 was attended by 220 participants from 21 countries. There were 142 oral presentations and 25 poster presentations on topics such as Relaxation Methods & Microstructure; Phase Transitions; Functional Materials; Creep, Damage, Fracture, Fatigue; Elastoplasticity; Micromechanics & Homogenization; Cosserat & Micromorphic Approaches; Stochastic Material Modeling/Heterogenous Materials; Experimental Identification; Modelling across the Scales; Configurational Mechanics; Biomechanics & Biomaterials; Viscoplasticity; Coupled Problems; Nano- to Macromechanics; Strain Gradient; Phase Field Modeling.

The conference was planned to be the first in a series of such conferences. The tremendous interest shown in the conference from the start as well as the positive feedback we received during the conference have encourage us very in this regard.

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 edited 24 contributions in this volume. These will also be made available to all participants on the internet in electronic form.

(see [www.ovgu.de/techmech](http://www.ovgu.de/techmech) or directly [www.ovgu.de/ifme/zeitschrift\\_tm/02\\_HTML\\_Inhalt/2010.htm](http://www.ovgu.de/ifme/zeitschrift_tm/02_HTML_Inhalt/2010.htm))

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

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(organizers of ICMM1)  
April 2010