

Preface

This volume of *Technische Mechanik* contains selected contributions of the 6th GAMM Seminar "Multiscale Material Modeling" from September 24-25, 2012 in Magdeburg.

It is the aim of the GAMM activity group 'Multiscale Material Modeling' to provide a forum for discussion and interaction for PhD students in the fields of mechanics, applied mathematics, and materials science, and for engineers with particular research focus on homogenization, micromechanics and multiscale methods. The activity group gives special attention to communicate expert knowledge to young researchers in the fields of micromechanics and multiscale simulation methods.

Once a year, the GAMM activity group organizes a seminar for discussions on actual methods and problems in the context of scale bridging methods. The 6th Seminar "Multiscale Material Modeling" took place from September 24-25, 2012 and was hosted by Prof. Albrecht Bertram, Otto-von-Guericke University Magdeburg, Germany. This special issue of *Technische Mechanik* documents selected research works presented at this seminar. The focus lies on the macroscopic modeling of foams, specific boundary conditions applied to finite element based representative volume elements and numerical efficient approaches for modeling deformation textures. A phase field approach for modeling phase transformations and an XFEM approach for stress and strain discontinuities are discussed in detail, as well.

Thomas Böhlke, editor of this volume
Stefan Diebels, editor of this volume
Albrecht Bertram, editor of *Technische Mechanik*

