Preface

The idea of this monograph is to present the latest developments and applications of computational tools related to the biosciences and medical engineering. Computational tools such as the finite element method, computer-aided design and optimization as well as visualization techniques such as computed axial tomography open completely new research fields with a closer joining of the engineering and bio/medical area. Nevertheless, there are still challenges since both directions are based on quite different ways of education or even the “language” is sometimes different from discipline to discipline. This monograph reports the results of different multidisciplinary research projects, for example, from the areas of scaffolds and synthetic bones, implants and medical devices, and medical materials methods.

The 8th International Conference on Advanced Computational Engineering and Experimenting, ACE-X 2014, was held in Paris, France, from 30 June to 3 July 2014 with a strong focus on computational based and supported engineering. This conference served as an excellent platform for the engineering community to meet with each other and to exchange the latest ideas. This volume contains 11 revised and extended research articles written by experienced researchers participating in the conference. Well-known experts present their research on the experimental and numerical investigation of biomaterials and structures, their optimization and manufacturing.

The organizers and editors wish to thank all the authors for their participation and cooperation which made this volume possible. Finally, we would like to thank the team of Springer publisher, especially Dr. Christoph Baumann, for excellent cooperation during the preparation of this volume.

April 2015

Andreas Öchsner
Holm Altenbach
Applications of Computational Tools in Biosciences and Medical Engineering
Öchsner, A.; Altenbach, H. (Eds.)
2015, VIII, 215 p. 168 illus., 118 illus. in color., Hardcover
ISBN: 978-3-319-19469-1