

Preface

This edited book contains chapters written by invited speakers of Advances in Computational Fluid-Structure Interaction and Flow Simulation (AFSI) 2014 – a conference that celebrated the 60th birthday of Prof. Tayfun E. Tezduyar. The conference was held on March 19–21, 2014, in the Green Computing Systems Research and Development Center at Waseda University, Tokyo, Japan. Over 70 people attended the birthday celebration conference, and over 60 presentations were delivered as part of the conference technical program. This edited volume, much like the AFSI 2014 conference, is dedicated to Tayfun Tezduyar and celebrates his exemplary research achievements in computational fluid-structure interaction (FSI) and flow modeling and simulation, and his impact in the computational mechanics community at large.

This book has seven distinct parts arranged by thematic topics. The first three parts are devoted to contributions in computational fluid dynamics (CFD) and cover basic methods and applications, flows with moving boundaries and interfaces, and phase-field modeling, the latter being a relatively new research direction in CFD. The remaining four parts are focused on computer science and high-performance computing (HPC) aspects of flow simulation, mathematical methods, biomedical applications, and, last but not least, FSI. The book opens with a humorous yet impressive account of Tayfun Tezduyar’s career, which is a printed version of the laudation that Prof. Thomas J.R. Hughes delivered at the AFSI 2014 conference banquet.

The editors would like to thank all the authors for choosing to submit their contributions to this edited volume, for meeting the editor- and publisher-set deadlines, and for being patient with the editors throughout this process.

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