Preface

The volume “Transfer Phenomena in Fluid and Heat Flows II” of Defect and Diffusion Forum covers a huge amount of very interesting topics on diffusion related phenomena. Renewable energy plays a special role in this edition. For example, numerical wave tanks are studied to discover the geometry that improves the performance of converters of sea wave energy, particularly the oscillating water column converter. Regular and irregular wave propagation is also analyzed. The investigation of the performance of the assembly of earth-air heat exchangers is another noteworthy feature due to its increasing interest in the research community. Phase change of PCM in spherical cavities, atmospheric pollutant dispersion, and EMMS Model for Bubbly Fluidized Bed are among important subjects addressed in this special issue. Non-newtonion fluids also deserved attention and the heat transfer extracted from elliptic cross section ducts using viscoplastic fluids is also shown. We would also like to draw attention of the reader to the determination of the diffusion coefficient of concretes in the saturated condition, among other interesting topics. It is worth noticing that some works used constructal design methods to understand how the geometry affects the behavior of their systems. In this method, the keyword is freedom: giving freedom to move allows their currents to achieve the best performance of the system. By ending this special issue, we would also like to thank all authors for their valuable contributions and all the reviewers, which made this volume possible.

Antonio F. Miguel, Luiz Alberto Oliveira Rocha and Andreas Öchsner