

Preface

This special issue “Transfer Phenomena in Fluid and Heat Flows X” of Defect and Diffusion Forum presents a collection of works associated to diffusion and fluid flow phenomena.

Advection-diffusion multilayer method, Gaver-Stehfest and power series expansion methods for solution of diffusive and advective transport problems, together with mesoscale models are methods that can be applied to simulate dispersion of pollutants in atmosphere, wind intensity, electricity production by aerogenerators, etc. The search for geometric configurations that best performs is also pursued: uniform heat generating cavities, driven cavities, fins, and elliptical tubes subjected to a flow with forced convection, are some of the systems addressed in this special issue. Some studies are drawing special attention to the wave energy conversion. Point-absorber, oscillating water column (OWC) wave energy converter (WEC) on a breakwater, overtopping, and oscillating water column device with double hydropneumatics chamber are some of the devices addressed in this issue. Numerical studies, including computational fluid dynamics methods are also applied to study ocean wave tank, hydrodynamic currents, oil spill simulations and susceptibility in coastal and estuarine areas, and fluvial hydrodynamics simulation and reproduction of flood patterns. A simplified model in a fluidized bed, transporting spherical particles is also shown. This approach is capable of predict internal particle temperature, as a function of its surface temperature and flow conditions.

We hope you enjoy the reading of this collection of these interesting works. By ending, we thank for all the hard work of authors and reviewers that made this volume possible.

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