

Preface

This topical volume on Advanced Diffusion Processes and Phenomena addresses diffusion in a wider sense of not only mass diffusion but also heat diffusion in fluids and solids. Both diffusion phenomena play an important role in the characterization of engineering materials and corresponding structures. Understanding these different transport phenomena at many levels, from atomistic to macro, has therefore long attracted the attention of many researchers in materials science and engineering and related disciplines.

The present topical volume captures a representative cross-section of some of the recent advances in the area of mass and heat transport. Reflecting the enormous breadth of the area, the range of topics covered is accordingly very large.

Topics include classical mass diffusion problems such as phase transformations, precipitation, recrystallization and grain boundary diffusion. Advanced materials such as nanomaterials and ceramic and polymer based composite are treated. Heat diffusion related manuscripts cover, for example, thermal properties of foams and composite materials, heat storage coefficients of building materials and fluid flow of impinging jets.

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