This book - a sequel of previous publications 'Flows and Chemical Reactions' and 'Chemical Reactions in Flows and Homogeneous Mixtures' - is devoted to flows with chemical reactions in heterogeneous environments. Heterogeneous media in this volume include interfaces and lines. They may be the site of radiation. Each type of flow is the subject of a chapter in this volume.

We consider first, in Chapter 1, the question of the generation of environments biphasic individuals: dusty gas, mist, bubble flow. Chapter 2 is devoted to the study at the mesoscopic scale: particle-fluid exchange of momentum and heat with determination of the respective exchange coefficients. In Chapter 3, we establish simplified equations of macroscopic balance for mass, for the momentum and energy, in the case of particles of one size (monodisperse suspension). Radiative phenomena are presented in Chapter 5.

Roger Prud'homme has been Emeritus Research Director at CNRS, in France, since 2004. His most recent research topics have included flames (premixed flame modeling and their behavior in microgravity), two phase flows (droplet combustion with condensation of the products, sound propagation in suspensions, vortex, chock wave structure) and the modeling of fluid interfaces. He has published 5 books, 7 contributions to volumes and 50 publications in international journals.