

Preface

The articles included in *Food Engineering Interfaces* are based on the presentations made by invited speakers of the 10th International Congress on Engineering and Food (ICEF 10) held in Viña del Mar, Chile, in April 2008. All the chapters were significantly upgraded from the original presentations and were later peer-reviewed and copyedited. This book was conceived well ahead of the event in order to make sure that readers would have the opportunity to get a taste of the challenges that lie ahead. At the same time, efforts were made to cover, with a high degree of detail, specific topics that are very relevant at the present time. As a result, this book is an excellent addition to the literature as the topics are well blended and clearly expand old food engineering boundaries.

The book is divided into five parts: selected topics in food engineering, advances in food process engineering, water management in food, food microstructure, and food packaging. All the 28 chapters have been written by renowned professionals working in food engineering and related disciplines. The first chapter of the book deals with the history and future of food engineering, and the remaining chapters in Part I deal with topics such as microbial risk assessment using new engineering tools, the development of eco-indicators to monitor the environmental impact on selected food industries, the mathematical simulation of gastric digestion, the engineering challenges posed by incorporating fiber in selected foods, the applications of computational fluid dynamics (CFD) in food processing, food safety engineering, food engineering economics, and the systemic approach for curriculum development. Part II has two comprehensive overviews, one on advanced thermal processing and the other on nonthermal processing, as well as chapters dealing with the optimization of thermal processes, the sterilization of foodstuff by pressure-assisted thermal processing (PATS), and the extraction of essential oils and nutraceuticals by supercritical fluid extraction. Part III has a very good selection of chapters, including an update on glass transition in foods, caking in food powders, the rehydration modeling of food particulate systems, and the identification of drying zones in a laboratory spray-dryer. Part IV includes a chapter that envisions how food microstructure studies will help the development of healthy foods that promote well-being and pleasure, as well as a chapter that deals with the analysis of food microstructures by synchrotron X-ray-computed tomography. Finally, Part V covers, among other topics, the utilization of edible coatings as food safety

and quality enhancers, physical properties of gel-based edible films, and packaging materials based on renewable resources.

We truly hope that this book, with its visionary approach, will be a valuable addition to the food engineering literature and will promote interest in food engineering research, development, and implementation.

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