

# Preface

Food nanoscience and nanotechnology are emergent disciplines that have grown enormously in the last years due to the attractive properties that a number of food-related materials have at the nanoscale. Understanding basic principles of such properties constitutes the basis for building a robust knowledge base for developing products with improved and novel characteristics.

Understanding fundamentals of food nanotechnology represents a huge challenge for universities, industries and the public sector. The complex mechanisms involved in the research, development, production and legislation of food nanoproducts are studied under multi- and inter-disciplinary scopes. Bearing this in mind, this book was conceived.

This book aims to contribute to basic and applied knowledge on these fields by presenting recent advances in selected topics of food nanoscience and nanotechnology, and is divided into a total of 17 chapters. The first chapter presents an overview to the field; the following chapter discusses general techniques for studying food-related nanomaterials, followed by six chapters on specific techniques for preparing food nanomaterials while the next contribution on dispersed systems illustrates this important and vast field. The book continues with three chapters on food nanocomposites, including those for packing purposes, and two chapters on advanced aspects of food nanobiosensors. Finally, three selected case-studied subjects are presented, including food safety aspects.

This book presents a significant and up-to-date review of selected aspects in the field. Distinguished scholars, engineers and technologists from key institutions have contributed chapters that provide a comprehensive analysis of their particular subjects. The premise of this book is that a comprehensive approach to this field requires a deep knowledge of the subject and an effective integration of other disciplines to appropriately convey fundamentals and applications of food nanoscience and nanotechnology.

The book is mainly directed to scholars, industry-related scientists and engineers, as well as to undergraduate and graduate students, who will find a selection of interesting topics.

This work was produced through a National Polytechnic Institute of México effort and the general subjects covered were carefully selected and edited for their

inclusion in this book. It is hoped that it will constitute a valuable addition to the existing literature on food nanoscience and nanotechnology, and that readers will find in it useful and worthy information.

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