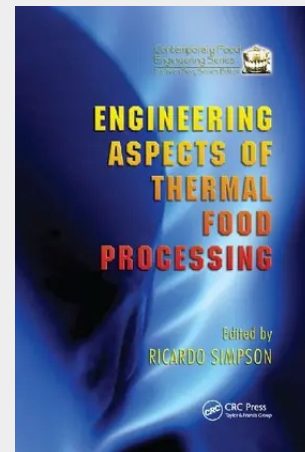


Engineering Aspects of Thermal Food Processing

Access the Latest Advances in Food Quality Optimization and Safety Assurance Thermal processing has undergone a remarkable amount of research throughout the past decade, indicating that the process not only remains viable, but that it is also expanding around the world. An organized exploration of new developments in academic and current food industry practices, Engineering Aspects of Thermal Food Processing presents groundbreaking advances in the physical and engineering aspects of thermal food processing, paying particular attention to modeling, simulation, optimization, online control, and automation. Divided into Four Cohesive Sections Under the editorial guidance of a leading thermal processing authority, the book first covers the fundamentals and new processes in the thermal processing industry, including new packaging materials like retortable pouches. The second section moves on to mathematical modeling and simulation, which also addresses emerging preservation technology such as ohmic heating. The third section of the book is devoted to optimization, recognizing that mathematical optimization is the key ingredient for computing optimal operating policies and building advanced decision support systems. This section discusses processes like thermal sterilization, microwave processing, and in-line aseptic processing as well as an analysis of plant production productivity. The final section examines online control and automation describing a practical and efficient strategy for on-line correction of thermal process deviations during retort sterilization of canned foods. Concluding with expert analysis and discussion of the manufacturers' businesses in today's competitive marketplace, Engineering Aspects of Thermal Food Processing explores the entire processing line from model

Engineering Aspects of Thermal Food Processing addresses fundamental aspects of modeling, simulation, optimization, online control, and computer automation. This book presents the latest advances and ideas in optimizing quality and the required procedures in assuring safety. It provides in-depth discussion and critical analyses of several different methods used to calculate *C*. Botulinum inactivation during thermal processing. The text focuses on optimization including global optimization, optimal retort scheduling, and simultaneous sterilization. Additional topics include quality retention, on-line control and automation, and designing pasteurization processes. It also discusses novel approaches to the computer simulation of non-symmetrical thermal processing of odd-shaped foods.



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