

**PROCESS-INDUCED  
CHEMICAL CHANGES  
IN FOOD**

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# PROCESS-INDUCED CHEMICAL CHANGES IN FOOD

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## **PREFACE**

Chemical changes that occur in foods during processing and storage are manifold and might be both desirable and undesirable in nature. While many of the processes are carried out intentionally, there are also certain unwanted changes that naturally occur in food and might have to be controlled. Therefore, efforts are made to devise processing technologies in which desirable attributes of foods are retained and their deleterious effects are minimized. While proteins, lipids and carbohydrates are the main nutrients of food that are affected by processing, it is their interaction with one another, as well as involvement of low-molecular-weight constituents that affects their flavor, color and overall acceptability. Thus, generation of aroma via thermal processing and bioconversion is of utmost importance in food preparation. Furthermore, processing operations must be optimized in order to eliminate or reduce the content of antinutrients that are present in foods and retain their bioactive components. Therefore, while novel processing technologies such as freezing, irradiation, microwaving, high pressure treatment and fermentation might be employed, control process conditions in a manner that both the desirable sensory attributes and wholesomeness of foods are safeguarded is essential. Obviously, methodologies should also be established to quantitate the changes that occur in foods as a result of processing.

This volume was developed from contributions provided by a group of internationally-recognized lead scientists. It serves as a resource book with extensive bibliography for chemists, biochemists, food scientists and nutritionists working in the industry, academic institutions and government laboratories. It may also be used as a complementary text for graduate students in food chemistry.

Fereidoon Shahidi  
Chi-Tang Ho  
and Nguyen Van Chuyen

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