IFST Advances in Food Science

Seafood Processing

Technology, Quality and Safety

Edited by
Ioannis S. Boziaris

Institute of
Food Science & Technology

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About the *IFST Advances in Food Science* Book Series

The Institute of Food Science and Technology (IFST) is the leading qualifying body for food professionals in Europe and the only professional organisation in the UK concerned with all aspects of food science and technology. Its qualifications are internationally recognised as a sign of proficiency and integrity in the industry. Competence, integrity, and serving the public benefit lie at the heart of the IFST philosophy. IFST values the many elements that contribute to the efficient and responsible supply, manufacture and distribution of safe, wholesome, nutritious and affordable foods, with due regard for the environment, animal welfare and the rights of consumers.

IFST Advances in Food Science is a series of books dedicated to the most important and popular topics in food science and technology, highlighting major developments across all sectors of the global food industry. Each volume is a detailed and in-depth edited work, featuring contributions by recognized international experts, and which focuses on new developments in the field. Taken together, the series forms a comprehensive library of the latest food science research and practice, and provides valuable insights into the food processing techniques that are essential to the understanding and development of this rapidly evolving industry.

The *IFST Advances* series is edited by Dr Brijesh K. Tiwari, Senior Research Officer in the Department of Food Biosciences at the Teagasc Food Research Centre, Dublin, Ireland.

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List of Contributors

Mercedes Alonso
ANFACO-CECOPESCA, Vigo, Pontevedra, Spain

Sigurjon Arason
Faculty of Food Science and Nutrition, University of Iceland, Reykjavík, Iceland and Matís-Icelandic Food and Biotech R & D, Reykjavík, Iceland

Ioannis S. Arvanitoyannis
Laboratory of Food Technology, Department of Agriculture, Ichthyology and Aquatic Environment, University of Thessaly, Volos, Greece

Ioannis S. Boziaris
Department of Ichthyology and Aquatic Environment, School of Agricultural Sciences, University of Thessaly, Volos, Greece

Frank Devlieghere
Laboratory of Food Microbiology and Food Preservation, Member of Food2know, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium and Pack4Food, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium

Christina DeWitt
Oregon State University Seafood Research and Education Center, Astoria, OR, USA

Trygve Magne Eikevik
Norwegian University of Science and Technology – NTNU, Department of Energy and Process Engineering, Trondheim, Norway

Montserrat Espiñeira
ANFACO-CECOPESCA, Vigo, Pontevedra, Spain

George M. Hall
University of Central Lancashire, Centre for Sustainable Development, Preston, Lancashire, UK

Flemming Jessen
DTU Food, National Food Institute, Division of Industrial Food Research, Technical University of Denmark, Kgs. Lyngby, Denmark

Ikuo Kimura
Laboratory of Food Engineering, Faculty of Fisheries, Kagoshima University, Shimoarata, Kagoshima, Japan

Sevim Köse
Department of Fisheries Technology Engineering, Faculty of Marine Sciences, Karadeniz Technical University, Trabzon, Turkey

Fátima C. Lago
ANFACO-CECOPESCA, Vigo, Pontevedra, Spain

Erling Larsen
DTU Aqua, National Institute of Aquatic Resources, Technical University of Denmark, Charlottenlund, Denmark

Chengchu Liu
College of Food Science and Technology, Shanghai Ocean University, Shanghai, People's Republic of China

Catherine McLeod
South Australian Research and Development Institute, Adelaide, Australia and Seafood Safety Assessment, Tournissan, France

Michael Morrissey
Oregon State University Food Innovation Center, Portland, OR, USA

Minh Van Nguyen
Faculty of Food Technology, Nha Trang University, Nha Trang, Vietnam and Matís-Icelandic Food and Biotech R & D, Reykjavík, Iceland

Jette Nielsen
DTU Food, National Food Institute, Division of Industrial Food Research, Technical University of Denmark, Kgs. Lyngby, Denmark

Bert Noseda
Laboratory of Food Microbiology and Food Preservation, Member of Food2know, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium

Jörg Oehlenschläger
Seafood Consultant, Buchholz, Germany

Emiko Okazaki
Tokyo University of Marine Science and Technology, Department of Food Science and Technology, Tokyo, Japan

Foteini F. Parlapani
Department of Ichthyology and Aquatic Environment, School of Agricultural Sciences, University of Thessaly, Volos, Greece

Peter Ragaert
Laboratory of Food Microbiology and Food Preservation, Member of Food2know, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium and Pack4Food, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium

Tom Ross
University of Tasmania, Tasmanian Institute of Agriculture – School of Agricultural Science, Hobart, Australia

Dagbjørn Skipnes
Nofima AS, Stavanger, Norway

Yi-Cheng Su
Seafood Research and Education Center, Oregon State University, Astoria, Oregon, USA

John Sumner
University of Tasmania, Tasmanian Institute of Agriculture – School of Agricultural Science, Hobart, Australia

Somboon Tanasupawat
Department of Biochemistry and Microbiology, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand

Kristin A. Thorarinsdottir
Marel, Reykjavik, Iceland

Gudjon Thorkelsson
Faculty of Food Science and Nutrition, University of Iceland, Reykjavík, Iceland and Matís-Icelandic Food and Biotech R & D, Reykjavík, Iceland

Persefoni Tserkezou
Laboratory of Food Technology, Department of Agriculture, Ichthyology and Aquatic Environment, University of Thessaly, Volos, Greece

An Vermeulen
Laboratory of Food Microbiology and Food Preservation, Member of Food2know, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium and Pack4Food, Department of Food Safety and Food Quality, Ghent University, Ghent, Belgium

Wonnop Visessanguan
Food Biotechnology Research Unit, National Center for Genetic Engineering and Biotechnology (BIOTEC), Klong Luang, Pathum Thani, Thailand

Juan M. Vieites
ANFACO-CECOPESCA, Vigo, Pontevedra, Spain

Preface

Demand for fish and seafood has consistently increased during recent years and fish protein is the major animal protein consumed in many parts of the world. Seafood is a very perishable product and the risk of contamination of seafood products by biological hazards is very high. Processing is necessary to assure the prolonged shelf life and safety of seafood.

The seafood processing industry currently has to face new challenges. Production has increased and seafood products need to be transported over long distances. Increasing demands from legislation and from the consumer for better quality and safer products have to be taken into account. Seafood now has to be high quality, nutritious, safe and have the convenience of an extended shelf life. To meet these criteria, seafood processing has had to assimilate all the new advances in food science and technology and in quality and safety assurance. Current technologies have evolved rapidly (e.g. modified atmosphere packaging, minimal heat processing, rapid freezing, injection salting), while emerging technologies such as high-pressure processing are beginning to be used. Advanced quality and safety methods, such as modern and rapid techniques for assessing quality and safety, species identification techniques and risk assessment tools, all have significant applications in the seafood sector.

This book covers the whole range of technologies currently used for the main processing of seafood. Quality and safety aspects are also dealt with. The first part of the book covers primary processing, chilling and freezing, heat processing, irradiation, traditional preservation methods (salting, smoking, acidification, drying and fermentation) as well as packaging. Surimi production, fish waste treatment, sustainability and value-added seafood product development is also covered in this section. The second part of the book deals with the determination of seafood quality, microbiological examination, authenticity and risk assessment.

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