Editorial Note

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Major current global challenges facing a human population of more than 9 billion are (1) pruning the environmental footprint of food production and (2) innovative solutions to deal with climate change. These topics are closely linked to the agri-food chain. In this context, resource efficiency is a key topic demanding for innovative technologies and concepts to overcome the still tremendous loss along the pathways from primary food production to consumer. Section VI (Postharvest Technology and Process Engineering) of International Commission of Agricultural and Biosystems Engineering (CIGR) focuses on technology-based solutions for this problem in the production, post-harvest, and processing phase of agro-food products. To facilitate this, section VI supports interdisciplinary exchange of information on a high scientific level within a symposium series initialized by UCD Professor

Da-Wen Sun, MRIA, CIGR Incoming President and Editor-in-Chief of Food and Bioprocess Technology.

In September 2008 and September 2009, CIGR Section VI organized respectively the *4th International Symposium on Food and Bioprocess* in Foz do Iguaçu, Brazil, together with Embrapa; and the *5th International Symposium on Food Processing, Monitoring Technology in Bioprocesses and Food Quality Management* in Potsdam, Germany, together with the Leibniz Institute for Agricultural Engineering Potsdam-Bornim (ATB). These two conferences followed successful symposia on Bioproducts Processing and Food Safety held in Beijing (2004), on the Future of Food Engineering held in Warsaw (2006), and on Food and Agricultural Products: Processing and Innovations in Naples (2007).

Today, the food processing industry strives to provide a wide variety of products with enhanced shelf-life, functionality and quality attributes. It also needs to develop new technologies in order to meet the demands of people from different cultural and daily life backgrounds. Good progress has been made in the development of novel processing methods, advanced monitoring technology, and effective and efficient quality management systems, leading to the insurance of product safety, enhancement of nutritional value, and reduction in environmental impacts. These activities were reflected in the large amount of excellent work presented at both the *4th International Symposium on Food and Bioprocess* and the *5th International Symposium on Food Processing, Monitoring Technology in Bioprocesses and Food Quality Management*.

At the *4th International Symposium on Food and Bioprocess*, 274 papers were presented by researchers from 29 countries, being 66 orally and 208 as posters. Besides the contributions, three keynote talks were also presented. The papers broadly focused on food technologies and food

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engineering aiming at designing and optimizing processes along the production chains, from post-harvest up to the consumption. They also concentrated on procedures and analyses to assure quality and safety of fresh and processed food.

At the *5th International Symposium on Food Processing, Monitoring Technology in Bioprocesses and Food Quality Management*, researchers from 50 countries presented 321 papers. These contributions were arranged in four keynote lectures, 138 oral presentations, and 179 posters addressing the following topics: modern production and post-harvest handling of raw materials; food chemical analyses in the supply chain; food processing with respect to product quality and safety; emerging

technologies in food processing; monitoring technologies for in situ analyses in bioprocesses; and modeling as a tool for process management.

This Special Issue of FOOD AND BIOPROCESS TECHNOLOGY features a selected series of extended papers based on presentations at our conferences. These contributions highlight the most recent interdisciplinary research and developments in food and bioprocess technology ranging from the molecular to the macroscopic level. We hope that this volume will help to inform current debates and thereby instigate innovative solutions for a productive future in food technology.

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Guest Editors of Special Issue