

Call for Chapters

Innovation in Sustainable and Resilient Food Production, Processing, Safety and Security

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To be published in Springer book series (tbc)

Advances in Sustainable Science and Technology

(<https://www.springer.com/series/16477>)

Synopsis

Civilisation faces huge challenges in the 21st century in feeding a growing population a healthy diet while avoiding excessive consumption of natural resources and damage to the environment. Innovative approaches are required to food production technology that increase yields and decrease waste, at the same time minimising harm to the ecosystem. Recent challenges such as the Covid global pandemic and armed conflicts in various parts of the world have demonstrated the importance of resilience throughout the 'Farm to Fork' food chain through local production.

Recent technologies are increasingly being incorporated into various aspects of the food production process. Artificial intelligence and machine learning (AI/ML) are being used to optimise growing regimes. The Internet of Things (IoT), robotics, geolocation, are being used e.g. for precision agriculture. Plant factories can repurpose redundant buildings and bring food production close to consumers, eliminating transport costs and emissions. Sustainable energy technologies are being used to reduce energy costs in greenhouses and other examples of controlled environment horticulture.

In between Farm and Fork, food processing is often the most mechanised and margin-driven part of the food production cycle. From pre-prepared vegetables to a complete ready-meal, there is an entire ecosystem of engineered food processes that create customer-centred products for quick and easy consumption. As a result, food processing has a high carbon and water footprint, considerable energy costs, and produces a significant level of food by-products as waste. The deployment of novel technologies within the areas of food science, safety and security is allowing advances to be made in sustainable initiatives to drive down the footprint, whilst simultaneously upcycling by-product in inventive ways.

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The book will showcase the sustainable advances being made in food production and processing especially where gains in good practice have been made. New technologies under development and further opportunities for innovation will be presented from both industry and academic experts.

Contributions need to be 15-20 pages in length and may be on any topics related to the theme of the book.

Timescale:-

- Full draft chapters submitted by 6 September 2024
- Reviews back to authors by 18 October 2024
- Final chapters by 15 November 2024

If you wish to propose a chapter please send a provisional title, and a few lines indicating the content, to Prof R.J.Howlett: rjhowlett@kesinternational.org