Robotics and Automation in the Food Industry: Current and Future Technologies (Woodhead Publishing Series in Food Science, Technology and Nutrition)

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The implementation of robotics and automation in the food sector offers great potential for improved safety, quality and profitability by optimising process monitoring and control. Robotics and automation in the food industry provides a comprehensive overview of current and emerging technologies and their applications in different industry sectors.

Part one introduces key technologies and significant areas of development, including automatic process control and robotics in the food industry, sensors for automated quality and safety control, and the development of machine vision systems. Optical sensors and online spectroscopy, gripper technologies, wireless sensor networks (WSN) and supervisory control and data acquisition (SCADA) systems are discussed, with consideration of intelligent quality control systems based on fuzzy logic. Part two goes on to investigate robotics and automation in particular unit operations and industry sectors. The automation of bulk sorting and control of food chilling and freezing is considered, followed by chapters on the use of robotics and automation in the processing and packaging of meat, seafood, fresh produce and confectionery. Automatic control of batch thermal processing of canned foods is explored, before a final discussion on automation for a sustainable food industry.

With its distinguished editor and international team of expert contributors, Robotics and automation in the food industry is an indispensable guide for engineering professionals in the food industry, and a key introduction for professionals and academics interested in food production, robotics and automation.

- Provides a comprehensive overview of current and emerging robotics and automation technologies and their applications in different industry sectors
- Chapters in part one cover key technologies and significant areas of

development, including automatic process control and robotics in the food industry and sensors for automated quality and safety control

- Part two investigates robotics and automation in particular unit operations and industry sectors, including the automation of bulk sorting and the use of robotics and automation in the processing and packaging of meat, seafood, fresh produce and confectionery

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Editorial Review

Review
"This book provides a comprehensive overview of current and emerging technologies and their applications in different industry sectors. The structuring of the book to first consider the different aspects of the technologies separate from the practical applications works well in providing a very readable text in what is a complex subject area. The editor and authors are drawn from a wide range of international experts from universities, research institutes and process control and robotic suppliers. The book is likely to be most valued as a background reference for engineering professionals in the food industry and its equipment and process control suppliers, and as a key introduction for academics interested in food production, robotics and automation." **--International Journal of Dairy Technology**

About the Author
Professor Darwin Caldwell is the award-winning Research Director at the Italian Institute of Technology in Genoa, Italy and a visiting professor in the Department of Automatic Control and Systems Engineering at the University of Sheffield, UK. Currently Chair of the IEEE Robotics and Automation Chapter (UKRI), Professor Caldwell has both edited and published extensively in the field.

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