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Nota di contenuto	Part1. Introduction to Digestion Studies -- Chapter1. Short history of digestion studies -- Chapter2. The digestive tract -- Chapter3. In-vivo, in-vitro, in-silico studies: an overview -- Part2. Considerations During Digestion Studies -- Chapter4. Challenges in quantifying digestion -- Chapter5. Exploring and exploiting the role of food structure in digestion -- Chapter6. From bite to nutrient: the importance of length scales -- Part3. Fundamental Understanding of Digestion Processes -- Chapter7. Tools/methods for quantifying digestion: medical imaging aspects -- Chapter8. Quantitative characterisation of digestion processes -- Chapter9. Consumer psychology and eating behaviour -- Chapter10. Tools and methods to quantify digestion: food chemistry and microbiology aspects -- Chapter11. Quantifying digestion products: physicochemical aspects -- Chapter12. An engineering perspective of human digestion -- Part4. Case Study: Starch Digestion, Real-World Relevance -- Chapter13. Starchy foods: human nutrition and public health -- Chapter14. Kinetics of -amylase action on starch -- Chapter15. Influence of physical and structural aspects of food on

starch digestion -- Chapter16. Conclusions.

Sommario/riassunto

For the first time, this singular and comprehensive text presents a focus on quantitative studies aiming to describe food digestion and the tools that are available for quantification. A case study relevant to real-world applications places this theoretical knowledge in context and demonstrates the different ways digestion studies can be used to develop food products. Interdisciplinary Approaches to Food Digestion undertakes a multidisciplinary approach to food digestion studies, placing them in context and presenting relevant phenomena plus the challenges and limitations of different approaches. This book presents a unique, useful reference work to scientists, students, and researchers in the area of food science, engineering, and nutrition. Over the last two decades there has been an increasing demand for foods that deliver specific nutritional values. In addition, the dramatic increase of food related diseases such as obesity requires the development of novel food products that control satiety and glycemic response. Overall, digestion studies are gaining increasing attention in recent years, especially as the link between diet and health/well-being becomes more evident. However, digestion is a complex process involving a wide range of disciplines such as medicine, nutrition, chemistry, materials science, and engineering. While a significant body of work exists within each discipline, there is a lack of a multidisciplinary approach on the topic which will provide a holistic view of the process. With Interdisciplinary Approaches to Food Digestion, researchers are finally presented with this much needed approach.