

Contemporary Food
Engineering Series

Da-Wen Sun, Series Editor



Physical Properties of Foods

Novel Measurement
Techniques and Applications

Edited by
Ignacio Arana



CRC Press

Taylor & Francis Group

Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

Contents

Series Preface.....	vii
Preface.....	ix
Series Editor.....	xi
Contributors	xiii
Chapter 1 Basics of Electronic, Nondestructive Technologies for the Assessment of Physical Characteristics of Foods	1
<i>Abelardo Gutierrez, José Blasco, and Enrique Moltó</i>	
Chapter 2 Rheological Properties of Foods	23
<i>Ana Cristina Agulheiro Santos and Cristina Roseiro</i>	
Chapter 3 Textural Properties of Foods	53
<i>J. Ignacio Arana</i>	
Chapter 4 Optical Properties of Foods	89
<i>Begoña Hernández Salueña and Carlos Sáenz Gamasa</i>	
Chapter 5 Electrical Properties of Foods.....	119
<i>Satyanarayan R. S. Dev and G. S. Vijaya Raghavan</i>	
Chapter 6 Thermodynamic Properties of Agricultural Products Processes.....	131
<i>Paulo Cesar Corrêa, Gabriel Henrique Horta de Oliveira, and Emílio de Souza Santos</i>	
Chapter 7 Flow Properties of Foods	143
<i>Paulo Cesar Corrêa, Emílio de Souza Santos, and Pedro Casanova Treto</i>	
Chapter 8 The Acoustic Properties Applied to the Determination of Internal Quality Parameters in Fruits and Vegetables	163
<i>Belén Diezma and Margarita Ruiz-Altisent</i>	

Chapter 9	Medical Diagnostic Theory Applied to Food Technology.....	207
	<i>Alejandro Arana and J. Ignacio Arana</i>	
Chapter 10	Mechanical Damage of Foods.....	221
	<i>Silvia Arazuri</i>	
Chapter 11	Measurement of Physical Properties of Fruits Using Image Analysis	239
	<i>José Blasco, Nuria Aleixos, Abelardo Gutierrez, and Enrique Moltó</i>	
Chapter 12	Novel Measurement Techniques of Physical Properties of Vegetables.....	253
	<i>J. Ignacio Arana</i>	
Chapter 13	Physical Properties of Cereal Products: Measurement Techniques and Applications	285
	<i>Iñigo Arozarena, Asunción Iguaz, María José Noriega, Gloria Bobo, and Paloma Vírseda</i>	
Chapter 14	Physical Properties of Meat and Meat Products: Measurement Techniques and Applications	327
	<i>Kizkitza Insausti, María José Beriain, and María Victoria Sarriés</i>	
Chapter 15	Physical Properties of Dairy Products	355
	<i>Lourdes Sánchez and María Dolores Pérez</i>	