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Nota di contenuto	WATER PROPERTIES: IN FOOD, HEALTH, PHARMACEUTICAL AND BIOLOGICAL SYSTEMS: ISOPOW 10; Table of Contents; Preface; Editorial Note; Acknowledgments; Contributors; PART 1: Invited Speakers and Oral Presentations; Session 1: Water Mobility/Dynamics and Its Application in Food and Pharmaceutical Systems; Invited Speakers; 1: Complementary Aspects of Thermodynamics, Nonequilibrium Criteria, and Water Dynamics in the Development of Foods and Ingredients; 2: Water Mobility in Solid Pharmaceuticals as Determined by Nuclear Magnetic Resonance, Isothermal Sorption, and Dielectric Relaxation Measurements Oral Presentations3: The Effect of Water and Fat Contents on the Enthalpy of Dissolution of Model Food Powders: A Thermodynamic Insight; 4: "Solvent Water" Concept Simplifies Mathematical Modeling in Fermenting Dough, a Multiphase Semisolid Food; 5: Microdomain Distribution in Food Matrices: Glass Transition Temperature, Water Mobility, and Reaction Kinetics Evidence in Model Dough Systems;

Session 2: Water Essence and the Stability of Food and Biological Systems; Invited Speakers; 6: Effect of Combined Physical Stresses on Cells: The Role of Water
7: Soft Condensed Matter: A Perspective on the Physics of Food States and Stability8: Antiplasticization of Food Polymer Systems by Low Molecular Mass Diluents; Oral Presentations; 9: Freeze Drying of Lactobacillus coryniformis Si3: Focus on Water; 10: Water-Sorption Properties and Stability of Inclusion Complexes of Thymol and Cinnamaldehyde with -Cyclodextrins; 11: Beyond Water: Waterlike Functions of Other Biological Compounds in a Waterless System; 12: Water Sorption and Transport in Dry, Crispy Bread Crust
13: Water State and Distribution During Storage of Soy Bread with and without Almond14: Phase Separation of Ice Crystals in Starch-Based Systems During Freezing and Effects on Moisture Content and Starch Glass Transition; 15: Carrot Fiber as a Carrier in Spray Drying of Fructose; Session 3: Microstructured and Nanostructured Changes in Food; Invited Speakers; 16: Taking the Measure of Water; 17: Rehydration Modeling of Food Particulates by Using Principles of Water Transport in Porous Media; 18: Protein Hydration in Structure Creation
19: Water Partitioning in Colloidal Systems as Determined by Nuclear Magnetic Resonance20: Physical Changes in Confectionery Products Caused by the Availability of Water, with a Special Focus on Lactitol Crystallization; Oral Presentations; 21: Entrapment of Probiotic Bacteria in Frozen Cryoprotectants and Viability in Freeze Drying; 22: Fracture Behavior of Biopolymer Films Prepared from Aqueous Solutions; Session 4: Biomaterial Sciences: Water in Stability and Delivery of Active Biomolecules; Invited Speakers
23: The Plasticization-Antiplasticization Threshold of Water in Microcrystalline Cellulose: A Perspective Based on Bulk Free Volume

Sommario/riassunto

This title focuses on the comprehension of the properties of water in foods, enriched by the approaches from polymer and materials sciences, and by the advances of analytical techniques. The International Symposium on the Properties of Water (ISOPOW) promotes the exchange of knowledge between scientists involved in the study of food materials and scientists interested in water from a more basic point of view and the dialogue between academic and industrial scientists/technologists. This comprehensive book covers the topics presented at the 10th ISOPOW held in Bangkok, Thailand in 2007, includi