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Nota di contenuto	Front Cover; Cold Plasma in Food and Agriculture: Fundamentals and Applications; Copyright; Contents; Contributors; Foreword; Chapter 1: Plasma in Food and Agriculture; 1. Challenges and Trends in Food Production; 1.1. Food Security; 1.2. Food Safety; 1.3. Minimal Processing; 1.4. Consumer and Regulatory Acceptance; 2. The Emergence of Nonthermal Solutions; 2.1. Related Nonthermal Technologies; 2.1.1. Pulsed Electric Field Processing; 2.1.2. Pulsed Ultraviolet-Light Processing; 2.1.3. Ozone Processing; 2.1.4. General Remarks; 3. What Is Cold Plasma?; 4. History 5. Cold Plasma in Food Processing-A Paradigm Shift6. Objective of the Book; Acknowledgments; References; Chapter 2: Physics of Cold Plasma; 1. Introduction; 2. Electron Kinetics; 3. Plasma Chemistry; 4. Breakdown Processes; 5. Plasma Sources; 5.1. Glow Discharge; 5.2. Microplasmas; 5.3. Corona Discharge; 5.4. Dielectric Barrier Discharge; 5.5. Jet Sources; 6. Modeling Approaches; 7. Summary; References; Chapter 3: The Chemistry of Cold Plasma; 1. Introduction; 2. Collisional Processes in Plasma; 2.1. Primary Plasma Processes-Collisions of Electrons 2.2. Secondary Plasma Processes-Collisions of Heavy Particles3. Some Case Studies in Plasma Chemistry of Relevance to Food and Agriculture;

3.1. The Plasma Chemistry of Ozone Formation; 3.2. Nitrogen Fixation by Cold Plasma; 3.2.1. The Plasma Production of Nitrogen Oxides and Nitric Acid; 3.2.2. Ammonia Production by Nonthermal Plasma; 3.3. Cold Plasma Treatment of VOCs; 4. Concluding Remarks; References; Chapter 4: Atmospheric Pressure Nonthermal Plasma Sources; 1. Introduction; 2. Corona Discharge APNTP; 2.1. Corona Discharge; 2.2. Pulsed Corona Discharge; 2.3. Application of Corona APNTP 3. Dielectric Barrier Discharge APNTP 3.1. Dielectric Barrier Discharge; 3.2. Different Patterns of DBD; 3.3. Applications of DBD APNTP; 4. Glow Discharge APNTP; 4.1. Low Pressure Glow Discharge; 4.2. Atmospheric Pressure Glow Discharge; 4.3. Microdischarges; 4.4. Hollow Cathode Discharge; 4.5. Glow Discharge With Liquid Electrodes; 5. Atmospheric Pressure Plasma Jets; 6. High Voltage Pulsed Discharge Produced APNTP; 7. Conclusion; References; Chapter 5: Plasma Diagnostics; 1. Introduction; 2. Electrical Diagnostics of Plasma; 2.1. Langmuir Probe; 2.2. Equivalent Circuit Model 2.3. Interferometry 3. Optical Diagnostics of Nonthermal Plasma; 3.1. Instrumentations; 3.2. Optical Emission Spectroscopy; 3.3. Spectral Profile (Voigt); 3.4. Plasma Density (Stark Broadening); 3.5. Optical Absorption Spectroscopy; 3.6. Laser-Induced Fluorescence; 3.7. Laser Scattering; 3.8. Infrared Spectroscopy; 4. Electron Spin Resonance; 5. Mass Spectrometry of Plasma; 6. Concluding Remarks; References; Chapter 6: Principles of Nonthermal Plasma Decontamination; 1. Introduction; 1.1. Plasma as a Tool for Biodecontamination; 2. Role of Plasma Species in Microbial Inactivation 2.1. Reactive Oxygen Species (ROS) and Reactive Nitrogen Species (RNS)

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