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Altri autori (Persone)	ParvulescuV. I (Vasile I.) MagureanuMonica LukesPetr
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Nota di contenuto	Plasma Chemistry and Catalysis in Gases and Liquids; Contents; Preface; List of Contributors; 1 An Introduction to Nonequilibrium Plasmas at Atmospheric Pressure; 1.1 Introduction; 1.1.1 Nonthermal Plasmas and Electron Energy Distributions; 1.1.2 Barrier and Corona Streamer Discharges - Discharges at Atmospheric Pressure; 1.1.3 Other Nonthermal Discharge Types; 1.1.3.1 Transition to Sparks, Arcs, or Leaders; 1.1.4 Microscopic Discharge Mechanisms; 1.1.4.1 Bulk Ionization Mechanisms; 1.1.4.2 Surface Ionization Mechanisms; 1.1.5 Chemical Activity; 1.1.6 Diagnostics; 1.2 Coronas and Streamers 1.2.1 Occurrence and Applications 1.2.2 Main Properties of Streamers; 1.2.3 Streamer Initiation or Homogeneous Breakdown; 1.2.4 Streamer Propagation; 1.2.4.1 Electron Sources for Positive Streamers; 1.2.5

Initiation Cloud, Primary, Secondary, and Late Streamers; 1.2.6 Streamer Branching and Interaction; 1.3 Glow Discharges at Higher Pressures; 1.3.1 Introduction; 1.3.2 Properties; 1.3.3 Studies; 1.3.4 Instabilities; 1.4 Dielectric Barrier and Surface Discharges; 1.4.1 Basic Geometries; 1.4.2 Main Properties; 1.4.3 Surface Discharges and Packed Beds; 1.4.4 Applications of Barrier Discharges  
1.5 Gliding Arcs  
1.6 Concluding Remarks; References; 2 Catalysts Used in Plasma-Assisted Catalytic Processes: Preparation, Activation, and Regeneration; 2.1 Introduction; 2.2 Specific Features Generated by Plasma-Assisted Catalytic Applications; 2.3 Chemical Composition and Texture; 2.4 Methodologies Used for the Preparation of Catalysts for Plasma-Assisted Catalytic Reactions; 2.4.1 Oxides and Oxide Supports; 2.4.1.1 Al<sub>2</sub>O<sub>3</sub>; 2.4.1.2 SiO<sub>2</sub>; 2.4.1.3 TiO<sub>2</sub>; 2.4.1.4 ZrO<sub>2</sub>; 2.4.2 Zeolites; 2.4.2.1 Metal-Containing Molecular Sieves; 2.4.3 Active Oxides; 2.4.4 Mixed Oxides; 2.4.4.1 Intimate Mixed Oxides  
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3.4 Special Application of NTP to Catalytic Oxidation of Methane on Alumina-Supported Noble Metal Catalysts

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### Sommario/riassunto

Filling the gap for a book that not only covers gases but also plasma methods in liquids, this is all set to become the standard reference on the topic. It considers the central aspects in plasma chemistry and plasma catalysis by focusing on the green and environmental applications, while also taking into account their practical and economic viability. With the topics addressed by an international group of major experts, this is a must-have for researchers, PhD students and postdocs specializing in the field.

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