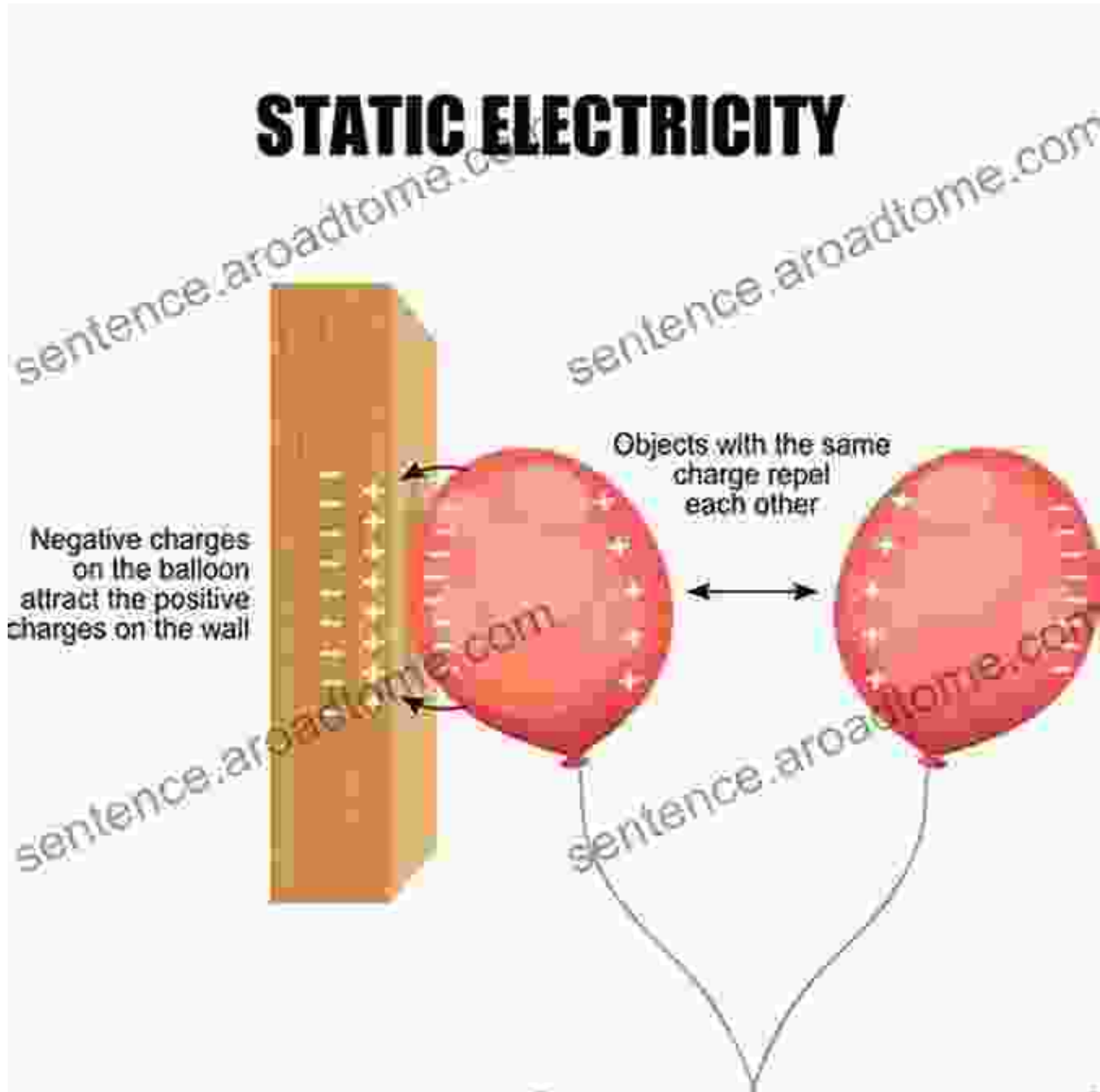


Electrostatics: Unraveling the Mysteries of Static Electricity



Electrostatics by Niels Jonassen

★★★★★ 5 out of 5

Language : English

File size : 18729 KB

Print length : 512 pages



Welcome to the captivating world of Electrostatics, where the enigmatic force of static electricity weaves its magic. In Niels Jonassen's comprehensive book, "Electrostatics," you will embark on an electrifying journey, delving into the fundamental principles, intriguing phenomena, and myriad applications of this fascinating force.

The History and Pioneers of Electrostatics

The seeds of Electrostatics were sown in ancient times, as philosophers and scientists observed the mysterious phenomena of static electricity. Jonassen traces the evolution of this field, highlighting the groundbreaking contributions of pioneers such as Thales of Miletus, William Gilbert, and Charles-Augustin de Coulomb, whose groundbreaking experiments laid the foundation for our understanding of static electricity.

Coulomb's Law: The Foundation of Electrostatics

Coulomb's Law, a cornerstone of Electrostatics, quantifies the force of attraction or repulsion between electrically charged particles. Jonassen provides a thorough analysis of this fundamental law, explaining its mathematical formulation and its implications for understanding the behavior of charged objects.

Electric Fields: Mapping the Electrostatic Landscape

Electric fields are invisible landscapes that surround electrically charged objects, exerting forces on other charges within their sphere of influence. Jonassen guides readers through the concept of electric fields, exploring their properties, graphical representations, and applications in various fields.

Gauss's Law: A Powerful Tool for Electric Field Analysis

Gauss's Law is a versatile theorem that enables the calculation of electric fields in a variety of situations. Jonassen explains the mathematical formulation and physical significance of Gauss's Law, demonstrating its utility in analyzing electric fields for both symmetric and complex charge distributions.

Capacitors: Storing Electrical Energy

Capacitors, ubiquitous in electronic circuits, store electrical energy in the form of an electric field. Jonassen delves into the operation of capacitors, exploring their construction, capacitance, and applications in energy storage, power electronics, and signal processing.

Applications of Electrostatics in Everyday Life

Electrostatics is not merely a theoretical curiosity; it manifests in countless practical applications that shape our daily lives. Jonassen showcases the diverse uses of Electrostatics, from electrostatic spray painting to air purifiers, inkjet printers to electrostatic precipitators, providing a vivid picture of the impact of this force on modern technology.

Niels Jonassen's "Electrostatics" is an indispensable resource for students, researchers, and anyone seeking a comprehensive understanding of this fascinating field. With its lucid explanations, engaging examples, and thorough coverage of fundamental principles and applications, this book serves as an electrifying gateway into the world of Electrostatics.



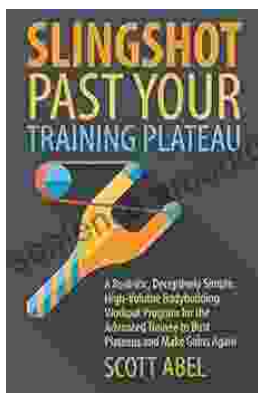
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