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Sommario/riassunto	This book examines the fundamental research and application of droplet dynamics. It includes six chapters in four sections. Section 1 introduces the concepts of droplet dynamics in powertrain systems. Section 2 reviews the optical methods for investigations in droplet dynamics. Section 3 examines the fundamental research on liquid droplet behaviors, such as droplet impact in internal combustion engines and the movement of liquid droplets in atmospheric pressure plasmas. Finally, Section 4 deals with the application of droplet behaviors not only in spray and combustion but also in bioinspired smart surfaces. The information contained herein is useful for engineers and students looking to broaden their knowledge of droplet behaviors and dynamics, especially for their development and application in low-carbon engines.