Record Nr. UNINA9910983385303321 Autore Shen Junwei Titolo High-Speed Photography in Fluid Mechanics / / by Junwei Shen, Shaowu Ma, Yuning Zhang, Jian Chang Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2025 Pubbl/distr/stampa **ISBN** 9783031827549 3031827546 Edizione [1st ed. 2025.] Descrizione fisica 1 online resource (78 pages) Collana SpringerBriefs in Energy, , 2191-5539 Altri autori (Persone) MaShaowu ZhangYuning ChangJian Disciplina 621.3126 Soggetti Energy storage Thermodynamics Heat engineering Heat - Transmission Mass transfer Fluid mechanics Mechanical and Thermal Energy Storage Engineering Thermodynamics, Heat and Mass Transfer **Engineering Fluid Dynamics** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Introduction -- High-Speed Photography Technology -- Visualization Research on Bubble Dynamics -- Visualization Research on Drop Dynamics -- Visualization Research on Blunt Body Wake Dynamics --Conclusion. This brief overviews the application and significance of high-speed Sommario/riassunto photography in experimental fluid mechanics, specifically focusing on the detailed observation and analysis of bubble dynamics, drop dynamics, and wake dynamics. It explores the development and various

application scenarios of high-speed imaging technology, using it to investigate microscopic phenomena within these areas. The book covers key topics such as bubble collapse and deformation, particle

acceleration mechanisms, and cavitating flow patterns in bubble dynamics; droplet impact, coalescence, and fragmentation in drop dynamics; and the wake phenomena of bluff bodies during translation, rotation, and interactions with flat surfaces in wake dynamics. Through experimental observations and mechanism research, the book provides insights into the underlying processes and behaviors in fluid systems, making it a valuable resource for researchers and students in fluid mechanics and energy related fields.