



## Laser Metrology in Fluid Mechanics: Granulometry, Temperature and Concentration Measurements (Hardback)

By Alain Boutier

ISTE Ltd and John Wiley Sons Inc, United Kingdom, 2012. Hardback. Condition: New. 1. Auflage. Language: English . Brand New Book. In fluid mechanics, non-intrusive measurements are fundamental in order to improve knowledge of the behavior and main physical phenomena of flows in order to further validate codes. The principles and characteristics of the different techniques available in laser metrology are described in detail in this book. Velocity, temperature and concentration measurements by spectroscopic techniques based on light scattered by molecules are achieved by different techniques: laser-induced fluorescence, coherent anti-Stokes Raman scattering using lasers and parametric sources, and absorption spectroscopy by tunable laser diodes, which are generally better suited for high velocity flows. The size determination of particles by optical means, a technique mainly applied in two-phase flows, is the subject of another chapter, along with a description of the principles of light scattering. For each technique the basic principles are given, as well as optical devices and data processing. A final chapter reminds the reader of the main safety precautions to be taken when using powerful lasers.

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