

## Introduction to Flow Instrumentation

The sections that follow provide an introduction to some of the instrumentation used in fluid flow experiments. A overview is provided of some of the instruments and methodology used for flow visualization and for the measurement of fluid velocities (and flow rates), pressures (and sound), and forces as well as accelerations and vibrations. There are of course other flow variables that need to be measured in a given experiment such as temperature, chemical composition and various ancillary fluid properties such as the humidity, the air content of a test liquid, nucleation sites, etc, and brief mention of some of these is made in a final section in this group. We focus on standard instrumentation most of which is commercially available while recognizing that special instrumentation often needs to be developed for particular experimental needs. Multiphase flows present a whole new level of complexity for measurement and some brief description of these instruments is also provided.