

## Forensic metrology

This tutorial covers this new branch of metrology from the perspective of law professionals. Its aim is to show how the correct expression of measurement results, together with their uncertainty, can help judges and juries to issue their sentences, especially when the solution of the case involves exclusively (or almost exclusively) technical or scientific issues.

A brief survey of the elementary background of the two most widespread law systems – common law and civil law – is given, to analyze similarities and differences and show when and how experimental tests can be requested by investigators and judges to help reconstructing a criminal event. The responsibility of the professional who performs the tests is hence covered, to show how an incorrect or incomplete presentation of the test results might adversely influence the decisions taken by the court. The correct interpretation of measurement activities and results plays an important role in trials, both in common and civil law systems. In fact, despite these two systems are deeply different under most respects, they both follow the universally recognized principle of *ne bis in idem*. This means that nobody can be prosecuted for the same criminal conduct for more than once. The consequences, ethical, social and economical, and not only legal, of an incorrect interpretation of the measurement results can be hence easily understood, since a crime may remain unpunished.