

## Humidity And Moisture Measurement And Control In Science And Industry Volume 1 Principles And Methods Of Measuring Humidity In Gases

Moisture analysis covers a variety of methods for measuring high levels of moisture, as well as trace amounts, in solids, liquids, or gases. There are many applications where trace moisture measurements are indispensable for manufacturing and for process quality assurance. Trace moisture in solids must be controlled for plastics, pharmaceuticals and heat treatment processes. Measurement applications in gases and liquids include, for example, drying processes, hydrocarbon processing, pure gases in the semiconductor industry, natural gas pipeline transport, the conditioning of food and other products. Written by experts with over 20 years of experience in the field, this one-stop guide covers all aspects of these measurements, including both the theory and a wealth of practical know-how. As such, it includes guidelines on installation, on the realization of standards for absolute and relative humidity, verification and traceability measurements, equipment calibration methods and the latest research developments. Backed by numerous case studies, this practical book serves the needs of those working in the industry tasked with performing or developing new techniques and processes for moisture and humidity measurement. As a result, the scientist or engineer has all the information required for accurate, reliable, economically viable and efficient moisture measurement.

Volume 1 of the Handbook of Temperature Measurement, prepared by the CSIRO National Measurement Laboratory, Australia, details the principles and techniques involved in the measurement of humidity, in cryogenic and radiation thermometry and a variety of unconventional methods of temperature measurement. Other topics considered are thermal conductivity and the traceability of measurement. Authors in this volume include Mark J. Ballico, Edwin C. Morris, Gary Rosengarten, Anna Schneider, Glenda Sandars, Laurie M. Besley, Jeffrey Tapping, and Anthony J. Farmer.

The first volume of The Handbook of Humidity Measurement focuses on the review of devices based on optical principles of measurement such as optical UV, fluorescence hygrometers, optical and fiber-optic sensors of various types. Numerous methods for monitoring the atmosphere have been developed in recent years, based on measuring the absorption of electromagnetic field in different spectral ranges. These methods, covering the optical (FTIR and Lidar techniques), as well as a microwave and THz ranges are discussed in detail in this volume. The role of humidity-sensitive materials in optical and fiber-optic sensors is also detailed. This volume describes the reasons for controlling the humidity, features of water and water vapors, and units used for humidity measurement.

Offering all aspects of humidity measurement and instrumentation, this work includes rudiments and theory, common applications, advantages and limitations of frequently-used sensors and techniques, and guidelines for installation, maintenance and calibration. The disk is intended for easy conversions of humidity parameters and units.

Industrial Moisture and Humidity Measurement A Practical Guide John Wiley & Sons

V.4: Principles and methods of measuring moisture in liquids and soils. Physical and chemical methods; Dielectric, resistance and capacitance methods; Nuclear methods; Interaction of moisture and materials. Significance and theory; Experimental.

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