Record Nr. UNINA9910438114103321 Autore Pavese Franco Titolo Modern gas-based temperature and pressure measurements / / Franco Pavese, Gianfranco Molinar Min Beciet New York, : Springer, 2012 Pubbl/distr/stampa 1-283-64012-0 **ISBN** 1-4419-8282-5 Edizione [2nd ed.] Descrizione fisica 1 online resource (666 p.) Collana International cryogenics monograph series Altri autori (Persone) BecietGianfranco Molinar Min 536.54 Disciplina Soggetti Temperature measurements Pressure - Measurement Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto The concept of temperature -- Gas-based fixed points for thermometry -- Gas thermometry between 0.5 K and 273.16 K --Vapor-pressure thermometry -- Thermometry based on the melting line of 3He -- Cryostats for thermometry and gas-based temperature control -- Primary standards for pressure measurements -- Pressure transducers for gaseous media -- Gas based pressure fixed points --The thermomolecular pressure difference effect -- The Mutual Recognition Arrangement and its implementation in Temperature and Pressure -- Appendix A - The international Temperature Scale of 1990 -- Appendix B - List of temperature and pressure fixed points -Appendix C - Reference data on gases -- Appendix D - Vapor pressure equations -- Appendix E - Reference data for liquid-column manometers -- Appendix F - Reference data for pressure balances --Appendix G - The text of the Mutual Recognition Arrangement --Appendix H - General terminology in measurements -- INDEX. This 2nd edition volume of Modern Gas-Based Temperature and Sommario/riassunto Pressure Measurements follows the first publication in 1992. It collects a much larger set of information, reference data, and bibliography in temperature and pressure metrology of gaseous substances, including the physical-chemical issues related to gaseous substances. The

book provides solutions to practical applications where gases are used

in different thermodynamic conditions. Modern Gas-Based

Temperature and Pressure Measurements, 2nd edition is the only comprehensive survey of methods for pressure measurement in gaseous media used in the medium-to-low pressure range closely connected with thermometry. It assembles current information on thermometry and manometry that involve the use of gaseous substances which are likely to be valid methods for the future. As such, it is an important resource for the researcher. This edition is updated through the very latest scientific and technical developments of gasbased temperature and pressure measurements using thermometry and manometry, and brings all of the techniques together under one cover. This book fills the gap in international literature, as no other recently published book provides a comprehensive survey for gaseous media closely connected with thermometry. Updates in this new edition include revised appendices and new chapters on Mutual Recognition Agreement of the Comité International des Poids et Mesures and its main applications, and developments in the European Metrology Society.