1. Record Nr. UNINA9910814848203321 Compendium of hydrogen energy . Volume 2 Hydrogen storage, Titolo distribution and infrastructure / / edited by Ram B. Gupta, Angelo Basile and T. Nejat Veziroglu Cambridge, England:,: Woodhead Publishing,, 2016 Pubbl/distr/stampa 2016 **ISBN** 1-78242-384-2 Descrizione fisica 1 online resource (438 p.) Collana Woodhead Publishing Series in Energy;; Number 84 Disciplina 665.81 Soggetti Hydrogen as fuel Lingua di pubblicazione Inglese Formato Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references at the end of each chapters and index. Nota di contenuto Front Cover; Compendium of Hydrogen Energy: Volume 2: Hydrogen Storage, Distribution and Infrastructure; Copyright; Contents; List of contributors; Woodhead Publishing Series in Energy; Part One: Hydrogen Storage in Pure Form; Chapter 1: Introduction to hydrogen storage; 1.1. Introduction; 1.2. Physical storage; 1.2.1. Compressed hydrogen; 1.2.2. Cold-compressed hydrogen; 1.2.3. Liquid hydrogen; 1.2.4. Cryo-compressed hydrogen; 1.3. Material-based hydrogen storage; 1.3.1. Transition metal hydrides; 1.3.2. Complex hydrides; 1.3.3. Chemical hydrogen storage; 1.3.4. Hydrogen sorbents; References Chapter 2: Hydrogen liquefaction and liquid hydrogen storage2.1. Introduction: Why liquefying hydrogen?; 2.2. Basics of cryogenic liquefaction; 2.2.1. Fundamental cooling effects; 2.2.2. Fundamental liquefaction cycles; 2.3. Hydrogen thermodynamic properties at ambient and low temperatures; 2.3.1. Elemental hydrogen; 2.3.2. Molecular hydrogen; 2.3.3. Modifications of molecular hydrogen; 2.3.4. Thermodynamics of molecular hydrogen modifications; 2.4. Largescale hydrogen liquefaction and storage; 2.4.1. Today's technology; 2.4.2. Future technologies; 2.5. Advantages and disadvantages 2.6. Current uses of liquid hydrogen2.7. Sources of further information

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Compendium of Hydrogen Energy, Volume 2: Hydrogen Storage, Distribution and Infrastructure focuses on the storage and transmission of hydrogen. As many experts believe the hydrogen economy will, at some point, replace the fossil fuel economy as the primary source of the world's energy, this book details hydrogen storage in pure form, including chapters on hydrogen liquefaction, slush production, as well as underground and pipeline storage. Other sections in the book explore physical and chemical storage, including environmentally sustainable methods of hydrogen production from water, with