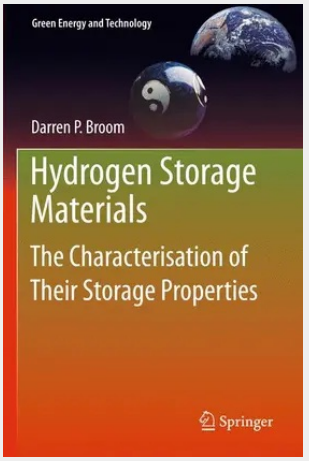
Broom

Hydrogen Storage Materials

The Characterisation of Their Storage Properties



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The problem of storing hydrogen safely and effectively is one of the major technological barriers currently preventing the widespread adoption of hydrogen as an energy carrier and the subsequent transition to a so-called hydrogen economy. Practical issues with the storage of hydrogen in both gas and liquid form appear to make reversible solid state hydrogen storage the most promising potential solution. *Hydrogen Storage Materials* addresses the characterisation of the hydrogen storage properties of the materials that are currently being considered for this purpose.

The background to the topic is introduced, along with the various types of materials that are currently under investigation, including nanostructured interstitial and complex hydrides, and porous materials, such as metal-organic frameworks and microporous organic polymers. The main features of *Hydrogen Storage Materials* include:

- an overview of the different types of hydrogen storage materials and the properties that are of interest for their practical use;
- descriptions of the gas sorption measurement methods used to determine these properties, and the complementary techniques that can be used to help corroborate hydrogen uptake data; and
- extensive coverage of the practical considerations for accurate hydrogen sorption measurement that drive both instrument design and the development of experimental methodology.

Hydrogen Storage Materials provides an up-to-date overview of the topic for experienced researchers, while including enough introductory material to serve as a useful, practical introduction for newcomers to the field.

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