

Пример текста для письменного перевода со словарем – облегченный вариант, --2100 зн.

The concept of hydrogen energy system, proposing the transfer of power engineering industry and transport to hydrogen, was born in mid 1970s, against a background of the worldwide oil crisis. The main attention was paid at that time to the improvement of technical and economic indices of hydrogen production as well as to increase the efficiency of its consumption. At the same time, hydrogen production, storage and transportation remained in shadow. During 1970s the factor of environment hazard began to be introduced into economic calculators, the ecological cleanness of hydrogen made its usage in a number of production processes potentially profitable. Simultaneously, solution for hydrogen storage problem world over became a reality for scientific community.

The problem of hydrogen storage is clearly connected to the necessity of development of reliable and effective methods of hydrogen compression. Hydrogen often behaves as an element of the halogen group like fluorine or chlorine. Forming hydrocarbons like methane, gasoline and all sorts of plastics. In the periodic system, however, Mendelejiv positioned it above the alkali metals on the basis of its mass and it stayed there as it has a single electron in the s-shell like all elements in the last row. When hydrogen behaves like metal it forms compounds with metals like Li, Na, Mg, Ti, which generally known as metal hydride. Generally the Miedema model applies, which says that the more stable an intermetallic compound is, the less stable its hydride and vice versa. These metals form initially a solid solution of the a-phase when they are hydrided and the lattice of this a-phase expands as each hydrogen atom adds an effective volume of 2-3 Å³. The a-phase is characterized by a relatively low hydrogen concentration, so that the interactions between hydrogen atoms are weak and mobility is generally very high. Mutual interactions between dissolved hydrogen atoms cause a gas liquid a-p transition when the hydrogen concentration increases. The whole process of hydride formation for gaseous hydrogen can be described by the PCI curves as shown in Fig.1.