

The invention relates to the area of hydrogen power engineering. Determination of content of hydrogen in metal-hydride accumulator is performed through measuring changes of physical properties of metal-hydride in it at change of content of hydrogen there. Metal hydride in accumulator is hydrated or dehydrated in steps by portions according to chosen interval of change of content of hydrogen, at that at each step one excites mechanical vibrations of accumulator and simultaneously one measures frequency of its own vibrations, and content of hydrogen in metal-hydride accumulator at its operation is determined according to values of frequency of its own vibrations.