



Hydrogen and Hydrogen-storage materials

M. Zoppi

CNR - Istituto Sistemi Complessi Via Madonna del Piano Sesto Fiorentino, Italy

An effective transition towards a *Hydrogen Economy* calls for the solution of a number of open problems in many fields that range from physical and chemical science, to engineering and technological activity, up to investing political and sociological aspects. As a scientist, I will concentrate on the first point where the problem of an efficient storage of hydrogen appears to be of primary importance.

After illustrating the peculiar relationship between hydrogen and neutrons, I will show how, in spite of its apparent simplicity, the microscopic structural and dynamic properties of hydrogen were successfully dealt with, in recent times, and how neutrons have shown to be precious in this research activity.

Then the scenario will be enlarged, describing how neutrons can give their important contribution in the investigation of novel materials that are considered promising for an efficient and safe storage of hydrogen.