The Hydrogen Energy

Our society has intensively used a variety of fuels to provide the needs to produce, to transport, to build, to heat/to cool, to energize and to illuminate. Thus, progressively and simultaneously, we have been utilizing the energetic content existent in wood, in coal, in oil, in natural gas and in other methane-rich gases, such as biogases. It is very interesting to observe that, if an analysis is made with each of these fuels in the order they were listed here, which is the same sequence they were discovered and utilized, it will be verified that their compositional chemical complexity, their carbon content and the emissions associated with their combustion is continuously decreased. This demonstrates a natural selection for a decreased environmental impact with their use. Similarly, it is also verified that their energy density and their hydrogen content are progressively increased in that order. And this is not fortuitous: our society is heading to a hydrogen era. This is a period that begins timidly now to approach its pinnacle within about seven decades from now, when the world's fuel provision will be mainly based on the use of hydrogen gas, as well as of other compounds that are rich on the chemical element hydrogen. This is the reason why the area of materials experiments today a frenetic movement on the discovery and improvement of new and redesigned materials for processes of hydrogen production, storage and use in a variety of engineering devices. The Materia Journal takes part of this movement by publishing articles with subjects directly or indirectly associated to this area and invites you to join this effort.

Cordially,

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Editor-in-Chief

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