

OPEN MOLECULAR SCIENCES FOR RENEWABLE ENERGIES

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The impact the OPEN SCIENCE (free and full accessibility of scientific achievements) on the modus operandi of research is discussed. In particular, the effect of opening new possibilities for geographically distributed collaboration and knowledge sharing fosters data reuse and data-driven science with (larger) open access to information and scientific results transforming how science is made.

Here we illustrate a new H2020 project aimed at developing at TRL 4 the four componentf

A) an innovative electrolyser producing H₂ with an increase of the yield/cost ratio 300% larger than that of basic versions of commercial electrolysers,

B) a new heterogeneous/homogeneous catalytic reactor of 50 kW using CO₂ to produce synthetic fuel (mainly methane)

C) a methane clathrate hydrate formation reactor for storing methane (a technology 400% cheaper than the traditional cooling and compressing for bottling) for its deferred use.