It seems to be a revolutionary idea, however even the research company was founded in 2012, so the application of the aluminium powder as a fuel can still be called as a promising theory.

The expressive named israeli Alchemy Research diverts with it's announcement the mentality about the alternative powered vehicles to totally new ways. The Alydro technology developed by them promises nothing less than a super range, an almost expected zero-emission combined with full recyclability.
The secret is not that a secret, because the main material was still known so far, the current storing capacity of the aluminium. The only open question was that how can be this energy extracted efficiently. The „alchemists“ found the answer in the water which produces hydrogen by stepping into reaction with the aluminium granules – almost at 900 °C degree, and this can be converted to electric power. Certainly to all of this a reagent is needed, for which there is enough space in a conventional car.
According to the company's statement there aren't any harmful stuff arising during the process, the steam can be recirculated in any case into the system. The only derivative is the aluminium-oxid known as alumina which is a perfect raw material for producing new aluminium powder, so further „fuel” can be produced by gathering it.

After the chemistry let's do some maths. The range of an Alydro-systemed vehicle is 2400kms instead of
today's average of 800kms based on a similar sized storage like the fuel tank of a conventional car. The reason for this is mostly that the aluminium being a relatively dense material is able to store almost double so much energy than the petrol or the diesel. It's not a marginal data that the aluminium powder is able to bear 80-times more energy than a lithium-ion battery of the same weight. If some should have lost the thread during the argumentation, we emphasize hereby: it's about such an electric vehicle conception where there's no need for high capacity batteries. So the problem of the overweight seems to being solved by the new idea.

In field of the efficiency of the conception there may rightly arise some doubts, because the precalculated price of the aluminium-drive mostly equals with the fuel costs of the conventional internal combustion collegues. According to the inventors the end user cost can be reduced by the further developments of the technology at the same time, while the price of the presently used raw materials increase continuously. Moreover the company would do (would have done) the production of the aluminium powder in a non-natural way – mining, metallurgy, but with the recycling of the worldwide available, significant quantity aluminium waste.
The Alchemy Research raises up the ante, because according to their logical supposal the technology can also be successfully applied on other fields of energy utilization – even a whole city can be illuminated with the operation of a fairly large Alydro-reactor. In contrast to other renewable energy resources – wind, solar power – the real advantage is that in this case there's the possibility of the on-demand utilization.

The company doesn't touch upon that what kind of material would they use to retransform the alumina to aluminium, but even with this unsettled factor seems this idea as exciting and viable. We'll see if we'll see the Aldyro-drive on the roads.

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