

Integrating hydrogen and batteries for future transport: an industrial point of view

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The fight against climate change is stimulating many industrial sectors to reach carbon net zero emissions. Europe decided to introduce a 100% CO₂ emissions reduction target by 2035 for new cars and vans. This substantially is equivalent to ban internal combustion engines by that date.

The main strategy selected by car manufacturers is the electrification of their fleets, based on the use of Li-ion batteries as energy storage systems. This approach still suffers from many limitations related to the long charge time of the batteries, to the limited kilometric range of the electric vehicles and to the system cost. In this scenario hydrogen-based energy storage systems represent a complementary approach that can integrate very well in electrified vehicles to improve the performances and the customer acceptance. The most important technological improvements in the field are reviewed from an industrial point of view.