

High efficiency LEVs

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Abstract

The increase exigency of mobility, and consequent the fall down effect on the global pollution due to the use of chemical propellant propulsion has rise the attention of the international community on the pollution free alternative. The paper addresses the main components of modern electric vehicles and the design of a Light Electric Vehicle (LEV) for middle range use.

Industrial considerations about the exigency of dedicated infrastructure for introducing electric vehicles in large scales are reported with reference to the MES-DEA experience. A detailed description of the main characteristic of the fuel cell suited for LEV application are given. Experimental results of a full test of compliance for a PEM fuel cell optimized for LEV application are reported .

[...]

Conclusion

The recent years had showed an increased level of attention for environmental pollution caused by industrial and transportation emission. Recent study underline the fact that most of the cars in the urban zones have a limited coverage and mostly are used for commuter daily movements. The reduce exigency of autonomy has pushed to the developed to a new generation of electric vehicles (Light Electric Vehicle – LEV)

The paper proposed a fuel cell based electrical vehicle technology with a high configurable PEFC drive system with an optimal power source management..

Two LEV prototypes have been realized in the MES-DEA laboratory in order to test the drive configuration.

Both the vehicles completely meet the ICE-15 recommendation in the laboratory tests. Experimental validation and the preliminary on road test confirm the suitability of the vehicles for urban transportation.

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