

Energy Management of Hybrid and Hybridized Electric Vehicles

Gianfranco Rizzo*

*University of Salerno, Salerno

In the last period, Hybrid Electric Vehicles (HEV) have been intended as real substitutes to engine-driven vehicles, in order to reduce fuel consumption and emissions. However, their market share is still limited as well as their influence on global fossil fuel demand and CO₂ production. Therefore, the possibility of upgrading conventional vehicles to hybrid electric vehicles is gaining interest, as a feasible short-term solution.

After a general introduction on current and future sustainable transportation issues, the main methodologies available for the energy management of Hybrid Electric Vehicles are reviewed. Then, the lecture focuses on the hybridization of conventional vehicles and on the features of the Through-The-Road HEV's. Aspects related to optimal energy management and control, to drivability and to the integration with photovoltaic source for hybridized vehicles are presented and discussed, also starting from the current research work performed on such topics at the University of Salerno.