

Ecosystem of Electric vehicle: from smart grid to logistics.

Abstract.

Electric vehicles have a positive impact on the economy and the environment since they use alternative energy sources. They reduce dependence on oil, decrease gas emissions and improve air quality. Although the acquisition cost is still high, this cost is nevertheless offset by the use of these vehicles, where the operating cost is very low compared to combustion engine vehicles, mainly due to the price of electrical energy and reduced maintenance costs. Although the available electric vehicles meet the needs of professionals, nevertheless three weaknesses remain in the use of electric vehicles, namely, limited range, charging time and the availability of charging infrastructures, and are part of the research and development challenges of all car manufacturers and public research centers. In this talk we review the different challenges related to the use of electric vehicles in transport and mobility. More precisely, we introduce several optimization problems of the ecosystem of the electric vehicle, from smart grid to logistics.