Fifteenth International Conference on Ecological Vehicles and Renewable Energies

EVER2020, May 28-30, 2020, Monte-Carlo (Monaco)

Diffusion of Charging Stations for Recharge of EVs

by

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Thematic: The new technologies in transportation and mobility are changing how companies develop and build vehicles. Electric Vehicles (EVs) offer greater impetus for lower energy investment at lower emission levels. EV produces fewer pollutant emissions than almost all comparable gasoline conventional and gasoline hybrid cars. The environmental benefits of EVs carry on growing. Novel lightweight materials enable car's producers to reduce vehicle mass without reducing passenger safety. It is expected that there will be over 250 million connected vehicles by 2022. This translates into huge data collection by car's sensor suites on wheels that can be used for future development and to create sophisticated global models on several parameters such as traffic flow or precise roadway maps. For instance, one can imagine a map showing all the potholes on the road and the ability to measure each fault in real-time so that the roadway infrastructure can be quickly repaired. Another example would be that all cars are connected and integrate communications technologies to provide valuable services to car user. Vehicles equipped with electronic control modules and sensors that enable Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) communications can proactively propose and recommend re-routings to avoid road hazards and calls for assistance in the event of an accident.

Currently, the network of highways is a key infrastructure of modern societies. Every day, these highways allow us to transport people or goods enabling our everyday life. Today, usually, when people think of the word "road", many of them think of busy, congested lines of traffic and long commutes. Perhaps they think also of deep holes, faults and falling shoulders. If they live in a location that has well-maintained or little-used roads, perhaps they think of a peaceful two-lane road winding through the trees between distant cities. The present transportation system has multiple limitations such as safety inconvenience, environmental impact and congestion, and these limitations can be surmounted with continuous efforts and strategic implementation including technological innovations. The technological applications for supporting safe and convenient mobility based on optimized driving environments could be developed by applying vehicle infrastructure communication. This type of infrastructure, in sync through new vehicles using capacity of connection with the infrastructure should be a reality for an efficient and safe use of future highway.

Within this trend, this special session will be an opportunity for specialists and experts coming from academia and industry to share their experiences and innovations aimed at the latest advances in the investigation and analysis of the diffusion of charging stations, in particular focused on the development and creation of algorithms for the optimization of recharging stops for vehicles. A

special attention will be paid to viable candidates for integration in sustainable applications such as EVs, HEVs, renewable energy harvesting, and so on. Topics of interest include, but are not limited to:

- Vehicle-to-Grid (V2G),
- Vehicle-to-Home (V2H),
- Vehicle-to-Vehicle (V2V)
- Vehicle-to-Infrastructure (V2I)
- Vehicles and Environmental Aspects
- Intelligent Transportation Systems (ITS),
- Smart road.

Submission: Prospective authors are invited to submit comprehensive abstracts of three A4 pages each, written in English. Abstracts should be sent by e-mail to: michela.longo@polimi.it and wahiba.yaici@canada.ca

Important Dates:

25 October, 2019	submission of abstracts
10 November, 2019	notification of Provisional acceptances
27 March, 2020	submission of full papers
17 April, 2020	notification of final acceptances