

# **Electric and Autonomous Mobility, Transportation and Logistics**

## **(Code: 427h4)**

### **Goal:**

This special session deals with the problem of accelerating the diffusion of smart and green means of transport towards the complete substitution of conventional internal combustion engine (ICE) vehicles.

In recent years, electric and autonomous mobility is spreading across the world to respond to the needs of progressively reducing the use of such vehicles that have been identified as the main cause of pollution especially in urban context. Despite that, a more rapid diffusion of Electric Vehicles (EVs) and Autonomous Vehicles (AV) is expected and desired today.

The main obstacles to the rapid diffusion of such EVs and AVs are economic costs and technological limitations. Despite the advancements done in recent years, recharging time is still much longer than refueling time of ICE vehicles, making the trip with an EV or AV more time consuming. In addition, the driving experience of the users still suffers for range anxiety due to the unbalanced distribution of the chargers across the countries and to the limited information and tools available.

The goal of this special session is to propose innovative solutions and tools supporting the technological advancements, improving transportation, CCAM services and logistics, facilitating the management of the charging infrastructure and demand and improving the automated driving and charging experience of end users. New models, approaches and algorithms must be designed and developed towards the special issue goal including Digital Twin, AI, optimization and control techniques, centralized and distributed methods.

### **Topics:**

- Smart charging strategies
- Distributed charging control
- Charge demand management
- Optimization and control of charging operations
- Artificial intelligence in transportation systems
- Artificial intelligence in logistics
- Digital Twin application for EVs and/or Avs
- Last mile solutions: digital twin, simulations and optimization
- EV and/or AV fleet management
- EV and/or AV routing optimization
- AV: guide control, deep reinforcement learning, model predictive control.
- Traffic management systems for AV
- Traffic management systems for hybrid vehicles
- CCAM services for AVs

### **Contact the lead organizer:**

**Agostino Marcello Mangini, Associate Professor**

Polytechnic University of Bari, Italy

E-mail: [agostinomarcello.mangini@poliba.it](mailto:agostinomarcello.mangini@poliba.it)

Phone: +39-080-5963496