

Characterizing and Modeling Ageing of Lithium-ion Batteries for Real-World Applications

Wednesday, May 30, 10:30-12:30

Universita' degli Studi di Parma – Podere La Grande

Presented by:

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Pilote Innovation Modélisation Système Batterie
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Degradation and ageing phenomena in battery cells and packs are one of the most critical factors to consider in the design of electrified vehicles. This seminar summarizes the experiences and lessons learned in characterizing and modeling battery ageing in electric vehicles, with emphasis on real-world usage conditions. Topics covered will include:

- Electric vehicles development and challenges of battery ageing;
- Overview of principal battery ageing mechanisms;
- Battery ageing testing protocols for calendar and cycling ageing;
- Development of battery ageing models in French and European Collaborative projects;
- Simulations and durability strategies on usage scenarios;
- State of Health estimation and secondary life applications.

Speaker Bio:

Philippe GYAN graduated from the Ecole Centrale de Lyon with a Master of Science in 1998, and with a Ph.D in 2003, in Mechanical Engineering, Energy and Thermal Management. He worked then at Renault Mechanical Department, on the deployment of calculation tools for vehicle performances and fuel economy. Since 2008, he has been working in the Research Department at Renault, on power train sizing for Electric Vehicles, on battery electrical, thermal, and ageing modeling. He has been involved in several French national and European collaborative projects SIMSTOCK, SIMCAL, MOBICUS, and MAT4BAT, on battery ageing modeling, with several publications.

