



Electrical Energy Storage in Transportation Systems

Benoît Robyns, Christophe Saudemont, Daniel Hissel, Xavier Roboam, Bruno Sareni, Julien Pouget

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Summary

To enable the sustainable development of complex modern transportation systems, the storage of electrical energy is crucial. This is particularly true given the rapid developments made for electric transportation services in smart cities, and the demand for interaction between different transport systems. This book presents tools to design such an energy management system, following a generic approach; this includes the deployment of smart electric power grids, services for the storage of electrical energy, and the use of artificial intelligence and explicit optimization methods. The use of these methods is explored through various case studies: more efficient electrification of aircraft, the development of hybrid autonomous

vehicles and locomotives, and more efficient integration of road and railway transports in the electrical grid.

In combining industrial theory and practice, this book will appeal as a reference to engineers and researchers working in the field of electrical energy management.

Content

1. Issues in Electrical Energy Storage for Transport Systems.
2. Local DC Grid with Energy Exchange for Applications in Aviation.
3. Electric and Hybrid Vehicles.
4. Railway System: Diesel–Electric Hybrid Power Train.
5. Railway System: Hybrid Railway Power Substation.

Authors

Benoît Robyns is Research Director at the École des Hautes Etudes d'Ingénieur (HEI) of Lille, France, and Vice President "Energy and Societal Transition" of the Catholic University of Lille. He is the head of the "Power Systems" team of the Laboratory of Electrotechnics and Power Electronics of Lille (L2EP).

Christophe Saudemont is Professor at the École des Hautes Etudes d'Ingénieur (HEI) of Lille, France. He is member of the "Power Systems" team of L2EP.

Daniel HISSEL is Full Professor at University Bourgogne Franche-Comté in Belfort, France. He is the Director of FCLAB (Fuel Cell Lab) Research Federation (CNRS) and head of the "Hybrid & Fuel Cell Systems, Electrical Machines" research team at FEMTO-ST Laboratory (CNRS).

Xavier ROBOAM is Directeur de Recherches CNRS in the LAPLACE (Laboratory of plasma and conversion of energy) of Toulouse, France.

Bruno SARENI is full Professor at the Université de Toulouse, INP-ENSEEIH, France. He is also with the LAPLACE research laboratory of Toulouse (UMR CNRS 5828), member of the GENESYS team.

Julien POUGET is Research Engineer at the national French railway company, SNCF, France.

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