Hybrid energy systems Project

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

In brief

> **plugin.odf-inp:PLUGINS_ODF_COURSE_NBHOURS_TXT:** 10.5

> **Code:** NEGE2A

Presentation

Objectives

- Develop a multiphysics system model using Bond Graph formalism;
- Analyze energy transfer and energy coupling in a multiphysics system;
- Analyze system power profile and evaluate the interest of its hybridization;
- Sizing the hybrid system sources (fuel cell and supercapacitor);
- Simulate a frequency energy management strategy.

Description

This project consists in applying the Bond Graph formalism for the modeling of an EHA (ElectroHydrostatic Actuator) of an Airbus 320.
The project also aims to feed the EHA through a hybrid energy system.Indeed, the student must analyze the system power profile (here the EHA during a flight sequence) and conclude on the interest of its hybridization.The hybridization here consists in associating a PEM (Proton Exchange Membrane) fuel cell with a supercapacitor.The student has to size the sources and apply a frequency energy management strategy to respect the dynamic characteristics of
the hybrid system sources.

Useful info

Place

> Toulouse