DC Microgrids

Organizer: Associate Professor Juan C. Vasquez, Professor Josep M. Guerrero

Lecturers: Professor Josep M. Guerrero, Associate Professor Juan C. Vasquez, Associate Professor Sanjay K. Chaudhary, Postdoc Sun Bo, PhD Student Enrique Diaz, Dr. Xiaonan Lu (Energy Systems Division in Argonne National Laboratory).

ECTS: 2

Date/Time: May 1st and May 2nd, 2017

Max no. of participants: 20

Description: DC distribution and transmission systems are a clear trend in electrical networks. The focus of this course is on modeling, control and operation of DC Microgrids, starting with stability and control strategies analyzed in detail, DC droop, virtual impedance concepts and hierarchical control structures for DC microgrids are also introduced. Control of DC-DC and AC-DC converters oriented as DC Microgrid interfaces are evaluated.

Distributed energy storage systems and nature DC output generation systems are presented showing their interaction in DC distribution Microgrids. The course also shows examples of DC microgrids in different applications like telecommunication systems or residential DC electrical distribution systems and hybrid AC-DC microgrids.

Prerequisites Matlab/Simulink knowledge is recommended for the exercises.

Link: http://www.et.aau.dk/phd/phd-courses/