



## Energy Management Systems for Low-carbon Energy Systems: Coordinating Buildings and Microgrids

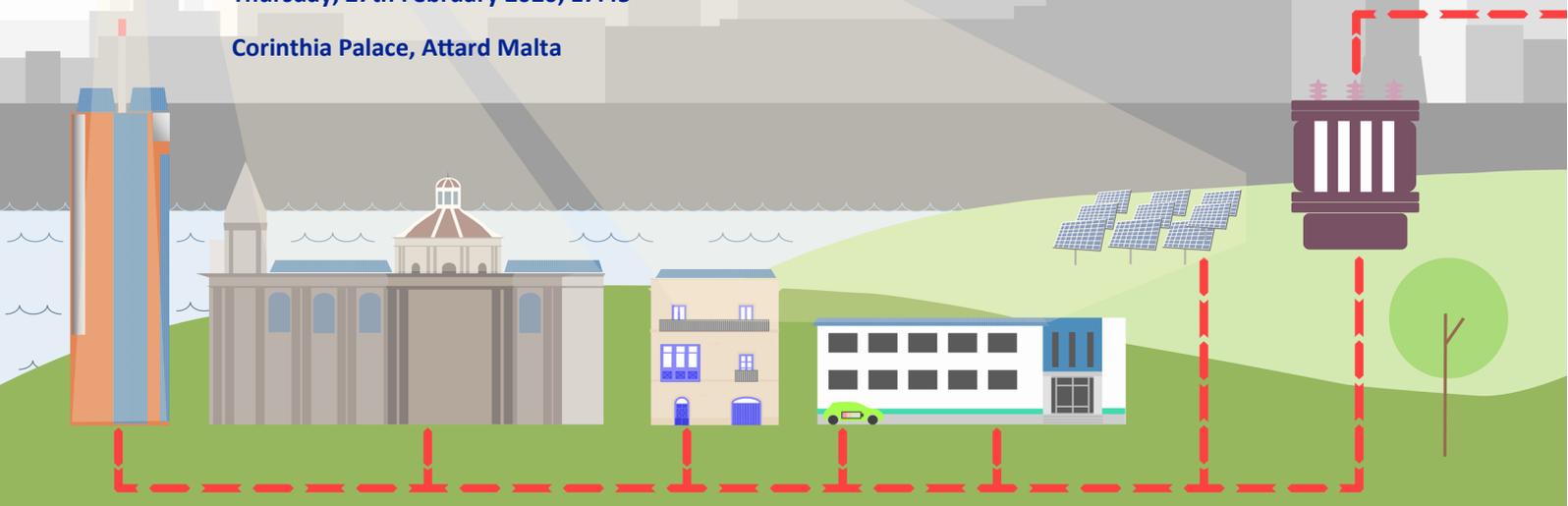
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**Alessandra Parisio, The University of Manchester**

Thursday, 27th February 2020, 17:45

Corinthia Palace, Attard Malta



In Collaboration with The Malta Group of Professional Engineering Institutions (MGPEI) and The Chamber of Engineers. Hosted by MGPEI.



### ABSTRACT

The need to build a more sustainable urban environment and a smarter energy grid is widely acknowledged. Energy systems such as buildings and microgrids are increasingly active – they integrate not just loads, but distributed generation and storage resources as well, and they can generate, sense, compute, communicate and actuate. In this context, multiple active energy systems have to be consistently coordinated and controlled. This requires novel solutions to manage energy more efficiently and in a more distributed fashion. Among the various methods adopted within the energy management literature, Model Predictive Control (MPC) has received particular attention. Because of the significant energy savings yielded by MPC strategies, both through large-scale extensive simulation and experimental studies, MPC is expected to become a common solution for energy management systems in the future. This talk will address the potential benefits achievable by MPC frameworks to improve operation management and coordination of microgrids and/or buildings, through an optimised use of the flexibility afforded by demand side management, energy storage technologies and shared distributed energy resources.

**Alessandra Parisio** is a Lecturer in the School of Electrical and Electronic Engineering at The University of Manchester, UK, where she is principal investigator in two Innovate UK-funded projects, and co-investigator and work package leader within the H2020 EU project CROSSBOW. She has conducted research activities within these projects focus on energy management systems for intelligent buildings including battery storage systems and large-scale control of multiple distributed storage systems. She is IEEE senior member, vice-Chair of the IFAC Technical Committee 9.3. Control for Smart Cities, and Editor of the Elsevier journal Sustainable Energy, Grids and Networks (SEGAN) and the MDPI journal Energies. Her research interests include the areas of large-scale energy management systems and stochastic constrained control, where she has over 50 publications.

Complimentary refreshments will be served at 17:45, The 45-minute long Public Lecture starts 18:15. The event is open to the public, free of charge and will be live streamed on JUMP2Excel facebook page. An electronic Certificate of Attendance will be given after the event.



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