

# IEEE International Symposium on Industrial Electronics ISIE'17

**19-21 June 2017, Edinburgh, Scotland**

**Special Session on**

## **“Modelling, Analysis, and Management of Hybrid Energy Storage Systems”**

**organized by**

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## **Call for Papers**

Theme: Advanced energy storage technologies have developed significantly in recent years and for some applications reached maturity such as in consumer portable devices and electric vehicles. Consumer devices are now benefiting from rapid charging and improved runtime, and modern electric vehicle battery packs are delivering increased ranges and improvements in performance. These technological advances and the decreasing unit cost of energy storage has provided an opportunity for new applications for storage, for example as electricity grid connected storage and traction power for rail. These applications have differing requirements in terms of their operational profiles, power versus energy ratios, and physical constraints and are therefore driving the development of new storage technologies. However, it possible that a hybrid solution that uses two of more differing technologies can better meet the requirements. Hybrid systems have been demonstrated in electric vehicles using batteries and supercapacitors but hybrid systems in general could also comprise of flywheels, compressed air, fuel-cells or even differing battery cell chemistries. Implementing a hybrid system

requires a deep understanding of each storage technology and then an analysis of how these components can be best connected to provide the level of control required to both deliver the power requirements as a system while optimally using each energy storage resource. The main objective of this special session is to share applications of hybrid energy storage systems and to disseminate advancements in their understanding, optimisation and control.

Topics of interest include, but are not limited to:

- Novel hybrid energy storage system topologies and designs
- Devices, interfaces, and technologies for load distribution
- Defining system states and operational considerations
- States Estimation Diagnosis and Prognostic Algorithms
- Fail safe architectures and safety management
- Power management and control
- Sizing and optimization of hybrid energy storage systems
- Applications of hybrid energy storage

**Submission procedure, deadlines, and author instructions:**

A manuscript submitted to the Special Session of ISIE 2017 must be in the IEEE double format with single space 10p fonts and figures included in the text, so the length of the manuscript of 8 pages long in PDF format can be evaluated. For your convenience you may download the WORD [template.doc](http://www.ISIE2017.org) from the conference website: <http://www.ISIE2017.org>

**Deadlines:**

- Reception of full paper: Same as for regular papers
- Paper acceptance notification: March 1<sup>st</sup> 2017
- Camera ready paper reception: April 10<sup>th</sup> 2017

The special session is sponsored by the IES Technical Committee on Energy Storage (ES TC)