

## **Special Session**

### **DESIGN, CONTROL AND APPLICATIONS OF EFFICIENT ENERGY TECHNOLOGIES OR SYSTEMS**

Organised by:

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Energy consumption is constantly and globally increasing in order to keep improving the quality of life. Energy, as one of the most important resources, since 1970's has become key strategic issue. Thus, improving the energy efficiency is one of the central themes of the energy policy of all developed countries in the world. It is also one of the fastest and most cost effective ways to reduce CO<sub>2</sub> emissions, contributing to energy security. According to available literature, it has been estimated that the widespread energy efficiency improvement with the existing technologies can save 20% of the global energy demand, and another 20% can be saved by preventing waste of energy. Saved energy becomes high value "fuel". In order to identify and analyze energy conservation opportunities, the energy management process embodies engineering, design, applications, operation, and maintenance of electrical power and thermal systems, as well as introduction of new renewable and sustainable energy systems. We invite researchers to contribute this special session with papers focused on advanced techniques for control, design methodologies and industrial applications, in order to improve energy efficiency, power quality improvement or better utilization of electrical drives and power electronics, introduction of new technologies for waste heat and low calorific value fuels utilization as well as system of energy management as a tool for energy efficiency improvements.

#### **Topics of interests should include, but are not limited to:**

- Power quality and adjustable speed drives;
- Power converters as a key technology in green energy;
- Utilization of multiphase electrical drives in high efficiency applications;
- New smart power converter solutions and controls through design, simulation and application;
- Innovation with digital manufacturing, implementing industry 4.0, smart factories;
- System of energy management as a tool for improving energy efficiency in complex industrial systems;
- Waste heat utilization in industrial applications;
- Combustion systems for waste gases utilization;
- Economic aspects of projects in energy efficiency and renewable energy sources.

### **Submission of papers:**

**Deadline: 31 May 2018**

Submit the paper at: <http://soe.northumbria.ac.uk/efea2018/index.html>