



**The 43rd Annual Conference of the IEEE Industrial Electronics Society
China National Convention Center, Beijing, China
October 29 - November 1, 2017**

**Special Session on
Efficiency of Modern Data Centers
Organized and co-chaired by:**

**Prof. Valeriy Vyatkin
Prof. Hiroaki Nishi
Prof. Xiaojing Zhang
Dr. Arash Mousavi**

**vyatkin@ieee.org
west@sd.keio.ac.jp
xiaojing.zhang@se.abb.com
arash.mousavi@ltu.se**

Call for Papers

Outline of the Session

With emergence of Internet the number of data centers grows rapidly causing dramatic increment of energy consumption in this sector. Modern data centers not only consume the comparable amount of energy to other traditional industries such as steel, but also they are expected to overtake them in the near future. Modern data centers require cutting edge industrial automation, information, control and power system technologies to efficiently manage their power supply, cooling, security and other facilities. The efficiency of data centres has many contributors, such as heating, cooling, ventilation, data processing, and air-conditioning, which can be improved via computing load balancing, energy consumption and electrical power management. This special session is organized to address the current challenges and problems of this new and fast growing industry from efficiency perspective. We invite researchers and technologists from a broad range of expertise and specializations to discuss and share their ideas, found problems, challenges and solutions in this multidisciplinary arena of research and development. This session will be focusing on (but not limited to) the following topics:

Topics of the Session

- Data center energy efficiency and performance metrics
- Data center power infrastructure (power supply technologies, UPS solutions, power quality, power losses, alternative data center designs)
- Data center as an industrial plant: automation, HMI and SCADA architectures and solutions
- Data center and power grid: demand response, smart load, load balancing
- Data center modeling: servers, cooling, entire infrastructure, data center dynamics (fan motors, pumps, UPS, backup generators)
- Data center asset management, maintenance and operation
- Server level issues: power consumption, IT load balancing and distribution,
- Thermal modelling of the server rooms
- Industrial automation for data centers
- Building management system in data centers
- Artificial intelligence applications in Data Centers

Author's schedule:	Deadline for submission of special session papers	April 17, 2017
	Notification of acceptance	July 3, 2017
	Deadline for submission of final manuscripts	August 15, 2017

All the instructions for paper submission are included in the conference website: www.iecon2017.com