



УНИВЕРЗИТЕТ
У НОВОМ САДУ



ФАКУЛТЕТ
ТЕХНИЧКИХ НАУКА

Трг Доситеја Обрадовића 6, 21000 Нови Сад, Република Србија
Деканат: 021 6350-413; 021 450-810; Централна: 021 485 2000
Рачуноводство: 021 458-220; Студентска служба: 021 6350-763
Телефакс: 021 458-133; e-mail: ftndean@uns.ac.rs

ИНТЕГРИСАНИ
СИСТЕМ
МЕНАџМЕНТА
СЕРТИФИКОВАН ОД:



132. Sastanak IEEE u Novom Sadu / 132nd IEEE Meeting
in Novi Sad
Obaveštenje / Announcement

Prof. Qing-Chang Zhong

IET Fellow, Senior Member IEEE,
Dept. of Automatic Control and Systems Eng.
The University of Sheffield, Sheffield, U.K.



У **петак, 16. 05. 2014.** у Svečanoj sali
Fakulteta tehničkih nauka u Novom
Sadu, sa početkom u **9:00 h**, održaće

On **Friday, May 16, 2014**, in the
Ceremonial Hall of the Faculty of Technical
Sciences, Novi Sad, at **9:00 am** will deliver

PREDAVANJE / LECTURE

Next-Generation Smart Grids: Completely Autonomous Power Systems

Abstract: Power systems are going through a paradigm change from centralised to distributed generation, and further on to smart grid. A large number of renewable energy sources, electric vehicles, energy storage systems etc. are being connected to power systems. Moreover, various loads/consumers are being required to take part in the regulation of power systems and to improve energy efficiency. These make it impossible to manage power systems in the way that has been (is being) done. In this talk, an architecture for the next generation smart grids is presented to tackle this challenge and a technical route to achieve this is demonstrated. This standardizes the interface of all electrical supplies, including conventional power plants and new add-ons, such as wind/solar farms, electrical vehicles and energy storage systems, and a majority of loads with the transmission and distribution networks, by exploiting the synchronisation principle of synchronous machines. This architecture opens the prospect of achieving completely autonomous operation of power systems. As a result, the communication and information layer of smart grid can be released from the low-level control.

Short bio: Qing-Chang Zhong is the Chair Professor in Control and Systems Engineering at University of Sheffield, UK, and a Specialist recognized by the State Grid Corporation of China. He is a Distinguished Lecturer of IEEE PELS and the UK Representative to European Control Assoc. He also serves on the Scientific Advisory Board of US NSF FREEDM Systems Center at North Carolina State Univ. and the Rolls-Royce Univ. Tech. Partnership Board in Power Electr. Systems. He obtained a PhD degree in 2000 from Shanghai Jiao-Tong Univ. and another PhD degree in 2004 from Imperial College London (awarded the Best Dr Thesis Prize). He (co-)authored 3 research monographs, including *Robust Control of Time-delay Systems* (2006) *Control of Power Inverters in Renewable Energy* and *Smart Grid Integration*. He proposed the architecture for next-generation smart grids. He is an Assoc. Editor for IEEE Trans. on Power Electronics, IEEE Trans. on Ind. Electronics, IEEE Trans. on Control Systems Tech., IEEE Access and European Journal of Control. His research focuses on power electronics, advanced control theory and the integration of both, together with applications in renewable energy, microgrids, smart grid integration etc. He is a Fellow of IET and was a Senior Research Fellow of Royal Academy of Eng.

Katedra za energetske elektronike i pretvarače i



IEEE – Serbia & Montenegro Section

**Joint Chapter Power Electronics, Industrial Electronics & Industry
Applications Societies, NOVI SAD, <http://www.ieee.uns.ac.rs>**

