



УНИВЕРЗИТЕТ
У НОВОМ САДУ



ФАКУЛТЕТ
ТЕХНИЧКИХ НАУКА

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ШТЕТНИСАМНИ
СИСТЕМ
МЕНАДЖМЕНТА
СЕРТИФИКОВАНИ ОД:



139. Sastanak IEEE u Novom Sadu / 139th IEEE Meeting
in Novi Sad
Obaveštenje / Announcement

Prof. dr Emil Levi

John Moores University,
Liverpool, United Kingdom



У етвртак, 02.04.2015. у Све аној сали
Факултета техничких наука у Новом Саду, са
почетком у 13:30 h, одржати

On Thursday, April 2, 2015, in the Ceremonial
Hall of the Faculty of Technical Sciences Novi Sad
at 1:30 pm will deliver

PREDAVANJE - LECTURE

An Integrated On-board Battery Charger for EVs

INTEGRALNI PUNJA BATERIJA ELEKTRICNOG AUTOMOBILA

Abstract: This talk shall at first review the requirements placed on on-board battery chargers and will illustrate why fast charging based on the use of a three-phase machine and three-phase power electronics is not a feasible solution. Some existing state-of-the-art solutions will be briefly addressed. Next, a specific solution developed during the work on an existing EPSRC funded research project ("VESI - Vehicle Electrical Systems Integration") will be discussed in detail. It is based on the use of a nine-phase machine (of either induction or synchronous type) and nine-phase power electronic converter, and it has been already fully verified using a laboratory prototype. The next stage is now ongoing and it consists of a development of a portable demonstrator. The principles of operation and the role of different partners in the work on the demonstrator will be addressed. This will be followed with a detailed illustration of the operation of the demonstrator, using experimentally collected results. Since the solution enables both charging and vehicle-to-grid (V2G) operation, both regimes will be encompassed. Moreover, since the developed solution can operate with both single-phase and three-phase grid, both of these will be included in the presentation.

The integrated on-board battery charging system, discussed in depth in this talk, enables charging/V2G operation without torque development in the machine, it does not require any hardware reconfiguration, it works with both single-phase and three-phase grid, and is based on the use of a triple three-phase inverter, which gives it a modularity and enables implementation of 'limp-home' mode in propulsion with ease.

Doktorske studije – Energetika, elektronika i telekomunikacije: Aktuelno stanje u oblasti,
Katedra za energetska elektronika i pretvaranje



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