# EDITORIAL

## Dear reader,

*You have at your desk the issue no. 1/2015 of the journal AUTOMATIKA, which contains 10 original scientific papers in the fields of robotics, power electronics, and communications.*

*In the first paper, **Open Solution for Humanoid Attitude Estimation**, Paolo Pierro et al. present a method for humanoid robot state estimation. The proposed approach is based on combining the information from robot encoders and the inertial measurement unit through the extended Kalman filter framework. The experiments were conducted on the HRP-2 humanoid robot. The following paper entitled **Transient Stability Assessment of Two-Area Power System with LQR based CSC-STATCOM** by Sandeep Gupta et al., proposed a robust linear quadratic regulator based controller for CSC-STATCOM in order to enhance the transient stability of two-area two-machine power system. The feasibility study is executed through simulations. In the third paper, **A Simple Technique for Optimal Selection of DOH in Parallel Passenger Hybrid Cars**, Kazem Varesi et al. present a non-dominated sorting genetic algorithm based technique for optimizing the degree of hybridization in parallel passenger hybrid cars. The authors used the Advanced Vehicle Simulator software to validate the efficiency of the proposed methodology on a small-size test car. The paper entitled **Current Controllers of Active Power Filter for Power Quality Improvement: A Technical Analysis** by Papan Dey and Saad Mekhilef presents a survey of various types of controllers of active power filter configurations, which are used to mitigate most concerning harmonic pollution in an electrical network. In the following paper, **Neural Network Prediction of Signal Strength for Irregular Indoor Environments**, Ivan Vilović and Nikša Burum present a neural-network based approach for modeling propagation inside complex indoor environments. Furthermore, in order to determine optimal access point arrangement the neural network propagation model is merged with the particle swarm optimization method. The authors compared the computed results with measurements in both simple and complex indoor environments. Krešimir Šolić et al. present in their paper entitled **Survey on Password Quality and Confidentiality** results of empirical survey on password quality self-assessment and several privacy issues regarding password manipulation among information systems' users. Data was collected by questioning 627 e-mail users that were adults, Croatian national and were using e-mail system on regular basis. Comparisons among different kind of users were done regarding age, gender, technical background knowledge, university degree and experience in usage. The paper entitled **A Compact Wideband Patch Antenna for Ultra High Frequency RFID Tag** by Mohd S. R. Bashri et al. presents a compact and simple patch antenna based on embedding a pair of symmetrical key-shaped slot near the non-radiating edge of the rectangular patch. This way a new adjacent resonant mode close to the fundamental mode is excited to form a wide half-power impedance bandwidth of 122 MHz to cover the entire frequency range of ultra high frequency RFID operation. The performance is evaluated by using a commercial electromagnetic simulator, Ansoft HFSS v13. In the eight paper, **Power Control of Base Station in GSM: Influence of Users' Density in the Cell**, Mladen Mileusnić et al. present results of reduction of base station output power based on the power control in each channel. Results are given both in simulations and measurements. The ninth paper entitled **Inter-Floor Wide Band Radio Channel Measurements and Simulation Applying Saleh-Valenzuela Model** by Ivan Marinović and Duje Čoko explores the accuracy of Saleh-Valenzuela statistical simulation model in time of arrival domain applied on inter-floor wide band indoor radio channels by measure-*

*ments inside of a modern building by applying vector network analyzer method at frequency of 1.8 GHz. The last paper entitled **Beacon Antenna Controller based on Synchronous Satellite** by Yong-hong Ding et al. presents a beacon antenna controller for improvement of the communication efficiency between beacon antennas of flight recorder and the synchronous satellite. The authors show experimental and simulation results for the example of automatic antenna switching.*

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