

EDITORIAL

Dear readers,

The editorial board of the journal *AUTOMATIKA* is indebted to the professor Jože Černelč, the first editor-in-chief responsible for this journal in the period from 1963 to 1992, for his significant contribution to the maintenance and development of the journal *AUTOMATIKA*, who passed away in August 2008.

The first section of the number 3-4/2008 of the journal *AUTOMATIKA* contains three original scientific papers, presented at the Second International Conference on Modelling and Design of Agricultural Control Systems – *AGRICONTROL 2007* – held in Osijek, Croatia from 3 to 5 September, 2007. You may find more detail about this conference under **Conferences and Events** of the present issue.

In his paper **What can systems and control theory do for agricultural science** Gerrit van Straten analyzes a selection of methods from systems theory that can be beneficial to quantitative agricultural science. Nevertheless, the most important is the idea of reducing uncertainty via feed back.

In the next paper **Modelling Dust Emission from Fattening Pig Houses** Jean-Marie Aerts et al. describe the effect of changes in ventilation rate control settings on the dust emission from mechanically ventilated fattening pig houses. By combining these two models, the effect of climate control strategies on the dust emission from the livestock houses can be simulated.

In the third paper **An investigation of automatic treatment of seeds with low power laser beam** Krešimir Nenadić et al. describe two successive sets of experiments of the low-power diode laser treatment of corn kernels and wheat seeds. The first experiment was conducted applying of a laser beam for excessive moisture removing from corn kernels. The second experiment was conducted to determine the influence of a low power laser beam on the mycotic population of wheat seeds.

The second section of the present issue contains two original scientific papers of which one was directly delivered to the editorial board, and the second one was presented at the 19th International Conference on Applied Electro-magnetic and Communications (*ICECom 2007* held in Dubrovnik Croatia from 24 to 26 September 2007).

In the first paper **Optimal Control and Filtering of Weakly Coupled Linear Discrete Stochastic Systems by The Eigenvector Approach** Naser Prljača, Zoran Gajić describe the regulator and filter algebraic Riccati equations, corresponding to the steady state optimal control and filtering of weakly coupled linear discrete stochastic systems, solved in terms of reduced-order sub problems by using the eigenvector approach.

In the next paper **Metallic EBG Sectoral Antennas with Different Polarization** Mohamad Hajj et al. set up the objective to make and study new concepts of EBG metallic antennas able to work according to a wide (or broad) radiation pattern form, i.e. presenting at least 60° angular beam-width. The use of metallic structures offers a new approach to the industrial partners to reduce the costs and to facilitate the design techniques.

The third section of the present issue contains two original scientific papers and one professional paper. The first paper was presented at the 6th *EUROSIM* congress on modelling and simulations held in Ljubljana Slovenia from 9 to 13 September 2007; the other two papers have been directly delivered to the editorial board.

In the first paper **Model-based Production Control** Dejan Gradišar et al. disclose feasible ways of the production process control by a model predictive controller, extracting the relevant information about the state of the production process by the so called Key Performance Indicators: productivity, mean product quality and mean production costs.

In the second paper **Designing Low-Sensitivity Single-Amplifier, Active-RC Allpole Filters Using Tables**, Dražen Jurišić et al. describe a single-amplifier, active-RC filters design procedure for common filter types, such as Butterworth and Chebyshev, using tables with normalized filter component values. A considerable improvement in filter sensitivity to alteration of passive circuit components has been achieved.

In the third paper **Dynamic Analysis of SEPIC Converters** Janko Horvat and Miro Milanović analyse dynamic phenomena of SEPIC converters and subject to this analysis give design recommendations for SEPIC converters, by which a sufficient separation of resonant frequencies of converter frequency characteristics has been achieved. Among the regular columns of *AUTOMATIKA* in this issue of the journal are **Comments and Opinions**, **Meetings and Events** and **Our Authors**.

Editor-in-chief:
Professor Borivoje RAJKOVIĆ, Ph.D.