Acta Universitatis Sapientiae

Electrical and Mechanical Engineering

Volume 4, 2012

Sapientia Hungarian University of Transylvania Scientia Publishing House



Antal Bege (1962 – 2012)

Our colleague, friend, editor-in-chief of Acta Universitatis Sapientiae, associate professor Antal Bege passed away unexpectedly on March 22, 2012. He was only 49.

After finishing his studies in Mathematics at Babeş-Bolyai University in Cluj he became a teacher in his former school in Miercurea Ciuc. After the regime change in 1989 he joined the Faculty of Mathematics and Computer Science, at Babeş-Bolyai University. He worked there for almost two decades, then went over to Sapientia Hungarian University of Transylvania, Department of Mathematics and Informatics in Târgu-Mureş in 2008. This is where he became

the head of the department and the editor-in-chief of the academic journal Acta Universitatis Sapientiae. Naturally, he did his best in all these qualities.

Among his research interests we can mention Number Theory (arithmetical functions), Nonlinear Analysis and Discrete Mathematics. He published 13 textbooks and monographs both in Hungarian and Romanian, as well as a lot of scientific papers.

He was extremely evenhanded person, appreciated by all his colleagues and students, a man of poise and an eternal stayer. With a terrible feeling of pain and loss, we say goodbye to our friend. We shall treasure his memory.

Editorial Board

Contents

Telecommunications & Signal Processing
D. Gábos, M. Varga Cluster Formation in Wireless Mesh Networks5
Industrial Electronics & Control Systems
A. Zs. Fekete, L. Jakab-Farkas, S. Papp, T. Cs. Balogh Dynamic Pressure Control in Reactive Sputtering Process
K. Enisz, I. Szalay, D. Fodor, K. Nagy, R. Jakab Bicycle Anti-Lock Braking System Prototype Development45
K. Enisz, D. Fodor, B. Németh, F. Speiser Development of FPGA Based CAN Bus Error Generator System58
Mechanical Engineering
K. Harangus, A. Kakucs Finite Difference Modeling of Orthotropic Materials70
B. Chetran, D. Mândru, S. Noveanu, O. Tătar, G. Răducanu Electrorheological Fluid Based Brake for Active Physiotherapy Systems 83
M. Zah, D. Lates, S. Besoiu, V. Csibi Epicycloidal Gear Shaping Machine96
M. Zah, D. Lates, V. Csibi Thermal Calculation for Planetary Cycloidal Gears with Bolts103
O. Şerdean, V. Csibi Rotational Pneumatic Drive with Radial Jet Action111