

SCIENTIFIC BULLETIN
OF THE
„PETRU MAIOR” UNIVERSITY
OF
TÂRGU MUREȘ

2011
Volume 8 (XXV) – New Series
Number 1

Published by
Editura Universității „Petru Maior”
Târgu Mureș, România

**SCIENTIFIC BULLETIN
OF THE
„PETRU MAIOR” UNIVERSITY
OF TÂRGU MUREȘ**

EDITOR

Vasile BOLOȘ

„Petru Maior” University of Târgu Mureș, Romania

SCIENTIFIC COMMITTEE

Ioan ABRUDAN	Technical University of Cluj Napoca - Romania
Osei ADJEI	University of Bedfordshire - United Kingdom
Csaba BLAGA	University of Miskolc – Hungary
Ejub DŽAFEROVIĆ	University of Sarajevo – Bosnia and Herzegovina
Maurice GRECH	Malta College of Arts, Science and Technology - Malta
Csaba GYENGE	Technical University of Cluj Napoca - Romania
Péter KÖRTESE	University of Miskolc – Hungary
Liviu MASALAR	University of Liege - Belgium
Radu MUNTEANU	Technical University of Cluj Napoca – Romania
Horia F. POP	„Babeș Bolyai” University of Cluj Napoca – Romania
Costache RUSU	„Gh. Asachi” Technical University of Iași – Romania

Editorial Board

Mircea DULĂU
Călin ENĂCHESCU
Bela FINTA
Lucian GRAMA
Liviu MARIAN
Liviu MOLDOVAN
Adrian PETRESCU
Dorin SARCHIZ
Teodor SOCACIU

Executive Editor

Dumitru BUDA

Desktop publishing:

Erzsebet CSIZMADIA
Adriana SIMON

ISSN 1841-9267

Editura Universității „Petru Maior” Târgu Mureș

e-mail: vbolos@upm.ro, dumitrubuda@gmail.com

Str. Nicolae Iorga, nr. 1,

540088, Târgu Mureș, Romania

Tel/fax 0265-211838



Editura Universității „Petru Maior” din
Târgu - Mureș

ISSN 1841-9267

CONTENTS

CONTROL SYSTEMS ENGINEERING

DC Motor Speed and Position Control System Connects Directly to Microcomputer Chips	5
Albert Zsolt Barabas, Abbott Diagnostics, București, Romania	
Alexandru Morar, „Petru Maior” University of Târgu Mureș, Romania	

PID Daylight Control System	12
Horațiu Ștefan Grif, „Petru Maior” University of Târgu Mureș, Romania	

Halogen Automatic Daylight Control System Based on CMAC Controller with Triangular Basis Functions	17
Horațiu Ștefan Grif, Mircea Dulău, „Petru Maior” University of Târgu Mureș, Romania	

Four Phases Driver for Stepper Motor Control	24
Alexandru Morar, „Petru Maior” University of Târgu Mureș, Romania	

MATHEMATICS

Some Considerations on Parametric Minimum Problems	30
Marcel Bogdan, „Petru Maior” University of Târgu Mureș, Romania	

The Gradient Method for Overdetermined Nonlinear Systems	32
Béla Finta, „Petru Maior” University of Târgu Mureș, Romania	

Combining Boosted Global- and Part-aspect Face Detectors	35
Szidónia Lefkovits, „Petru Maior” University of Târgu Mureș, Romania	

MECHANICAL & TECHNOLOGICAL ENGINEERING

Analyze of the Possible Causes of Porosity Type Defects in Aluminium High Pressure Diecast Parts	41
Ferencz Peti, SC CIE Matricon SA Târgu Mureș, Romania	
Lucian Grama, „Petru Maior” University of Târgu Mureș, Romania	

Using Adequate Ball Bearings in RC Car Chassis	45
Lucian Fridrik, University of Oradea, Romania	
Lucian Grama, „Petru Maior” University of Târgu Mureș, Romania	

ENVIRONMENTAL ENGINEERING

Why is Communication so Special for Sustainable Development?	48
Mihaela Bucur, Cosmin Petra, „Petru Maior” University of Târgu Mureș, Romania	

Considerations on the Content of Pesticides Residues in Vegetables	52
Florica Morar, „Petru Maior” University of Târgu Mureș, Romania	
Catalina-Cristina Bloj, Mures County Agriculture Departament – Phytosanitary Unit, Romania	

MANAGEMENT & ECONOMICS ENGINEERING

The communications of corporate social responsibility- study for iso 26000	56
Mihaela Bucur, „Petru Maior” University of Târgu Mureş, Romania Sorina Moica, Raluca Fărcaş, Technical University of Cluj-Napoca, Romania	
Research on an Expert System for TRIZ Method Applying.....	60
Gheorghe Burz, Technical University of Cluj-Napoca, Romania Liviu Marian, „Petru Maior” University of Târgu Mureş, Romania	
Selective Catalytic Reduction of Paccar Trucks.....	68
Ştefan Farkas, Paccar Inc. Victoria, Australia	
Vocational and Technical Education by Means of Practice Firm	72
Ana-Maria Moldovan, ”Transilvania” Economic College of Tîrgu Mureş, Romania	
Activity Based Training Employed in Quality Assurance Training	77
Liviu Moldovan, „Petru Maior” University of Târgu Mureş, Romania John Birger Stav, Sør-Trøndelag University College Trondheim, Norway	
Open and Innovative Tools and Services for Vocational Education and Training in Quality Assurance	82
Liviu Moldovan, „Petru Maior” University of Târgu Mureş, Romania John Birger Stav, Sør-Trøndelag University College Trondheim, Norway	