



The 5th International Conference
INTER-ENG 2011
Interdisciplinarity in Engineering



CONFERENCE PROGRAM

“Petru Maior” University of Tîrgu - Mureș
Faculty of Engineering
www.inter-eng.upm.ro

3 - 5 November 2011
Tîrgu - Mureș, România

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Liviu MARIAN

Rector of "Petru Maior" University of Tîrgu - Mureş, Romania

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President of Local Organizing Committee, Dean of the Faculty of Engineering,
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Stelian OLTEAN

Daniel BUCUR

Paul CHEŢAN

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Opening Ceremony

Friday, November 4th; 9,00 - 9,45

Aula Magna

Welcome Addresses:

Prof.dr.ing. Liviu MARIAN – Rector of “Petru Maior” University of Tîrgu - Mureş

Prof.dr.ing. Vasile BOLOŞ – Vice-rector of “Petru Maior” University of Tîrgu - Mureş

Conf.dr.ing. Mircea DULĂU – Dean of the Faculty of Engineering of the “Petru
Maior” University of Tîrgu - Mureş

Plenary Session

Friday, November 4th; 9,45 - 11,15

Aula Magna

Creativity and technology, innovation management – specific aspects for Technical Universities

Hon. Prof. Dr. Eng. Horia GIURGIUMAN - Consultant for innovation, patents, gear, software, Switzerland

NOx Prediction Based on Cylinder Pressure Measurement for Engine Emission Monitoring

Prof. Rakesh MISHRA BE MEng PhD CEng MIMechE FHEA, Energy, Emissions and the Environment Research Group Leader, Centre for Diagnostic Engineering, School of Computing and Engineering of the University of Huddersfield, United Kingdom

Process control, industrial automation, manufacturing process and automation

Room A316

Friday, November 4th 2011; 11,30 – 13,30

Session chairs:

Mircea Dulău – “Petru Maior” University of Tîrgu - Mureş

Katalin György - Sapientia University, Tîrgu - Mureş

Aspects of Robustness in Flow Control Processes

Mircea Dulău, Horaţiu Grif, Attila Rezi

Modeling and Stability Analysis of the Nonlinear Reactive Sputtering Process

Katalin György , András Kelemen, Sándor Papp

Modeling and Identification Study of the Variation of Dynamic Pressure in Reactive Sputtering Process

Sándor Papp, László Jakab-Farkas, Dominic Biró, Willibald Szabo

GA-Based Method for the Container Routes Planning in Intermodal Transportation

Claudiu Domuţa, Mihai Hulea, Adina Astilean

H₂ Robust Control of a Series Load Induction Heating Inverter with Kalman Filter State Estimator

Tibor Szelitzky, Adrian Neaga, Miron Tulbure, Cristian Filip, Roxana Both

Adaptation of a Fuzzy Controller’s Scaling Gains using Genetic Algorithms for Balancing an Inverted Pendulum

Duka Adrian-Vasile

Neural Networks Approach in Modeling of an Unloading Arm Positioning System

Iulia Inoan, Dan C. Dumitrache, Mihail Abrudean

Unloading Arm Horizontal Positioning System Control Using Robust H[∞] Approach

Iulia Inoan, Mihail Abrudean, Tibor Szelitzky

The Simulation of the Electron Beam Spot Control

Stelian Emilian Oltean, Mircea Dulău

Automatic Daylight Control System Based on CMAC Controller with B-Spline Basis Function

Horaţiu Stefan Grif, Arina Modrea, Dana Rus

Design of Local Model Reference Adaptive Control for a Single Robotic Link Driven by a DC Motor

Stelian-Emilian Oltean, Adrian-Vasile Duka

High – Current PWM Bipolar Stepper Motor Control and Drive

Alexandru Morar

Analyzing and Comparing the Hot-Spot Thermal Models of HV/LV Prefabricated and Outdoor Oil-Immersed Power Transformers

Ires Iskender, Ali Mamizadeh

Electrical and Electronic Engineering, Modeling, Simulation and Design

Room A316

Friday, November 4th 2011; 15,00 – 19,00

Session chairs:

Katalin Ágoston – “Petru Maior” University of Tîrgu - Mureş

Daniel Bucur – “Petru Maior” University of Tîrgu - Mureş

Studying and Modeling Accelerometers with Piezoelectric and Capacitive Sensing Elements

Ágoston Katalin

Wavelet Transform based ECG Signal Filtering Implemented on FPGA

Zoltán Germán-Salló, Ferenc-Emil Mózes

Implementation of Digital Filters in Reconfigurable Hardware Structures

Ferenc-Emil Mózes, Zoltán Germán-Salló

Optimization of Reliability Electric Power Transmission and Distribution Networks

Dorin Sarchiz, Daniel Bucur

Optimization of Reliability Electric Supply in Continuous Processes

Daniel Bucur, Dorin Sarchiz

Analysis of a Hybrid Renewable Energy System on the Mures Valey Using Homer

Cristian Dragoş Dumitru, Duka Adrian-Vasile

Regensim – Matlab Toolbox for Renewable Energy Sources Modeling and Simulation

Cristian Dumitru, Adrian Gligor, Horatiu Grif

Agents-Based Distributed Processes Control Systems

Adrian Gligor, Cristian-Dragoş Dumitru

Development of a Service Oriented Web Based SCADA

Traian Turc

Unipolar Driver for Stepper Motor Control

Zsolt Albert Barábas, Alexandru Morar

CNC Sewing and Embroidery Machine

Zsolt Lokodi , Alexandru Morar

Nontrivial QoS. Switching the Web to the Grid

Mircea Mare

Interface to Quadrature Incremental Encoder

Zsolt Albert Barábas, Alexandru Morar

Microstepping System for Bipolar Hibrid Stepper Motor Control

Alexandru Morar

A Comparative Approach to Technical Dictionaries

Dana Rus

Examples of Lebesgue Integrable Functions which is not Riemann Integrable

Diana Mărginean

Remarcable Measurable Functions

Diana Mărginean

Industrial and Medical Engineering, Materials Science

Room A308

Friday, November 4th 2011; 11,30 – 13,30

Session chairs:

Teodor Socaciu – “Petru Maior” University of Tîrgu - Mureş

Codruţa Boloş – “Petru Maior” University of Tîrgu - Mureş

Considerations regarding graphical environments in industrial design

Codruţa Boloş

Research on Improving Performance to Metallographic Microscopes

Teodor Socaciu, Mihai Simon

FEM Analysis of Stress and Strain State of a Worm Face-Gear with Reverse Tapered Pinion

Ligia Cristina Brezeanu, Bogdan Bucur

Influence of Dental Materials on the Tooth Structure: Finite Elements Method Study

Ligia Cristina Brezeanu, Gabriela Beresescu

Effect of Artificial Saliva on the Surface Roughness of Glass-Ionomer Cements

Gabriela Beresescu, Ligia Cristina Brezeanu

Solution to building axle vehicles worm gear spiroid

Dan Silvaş, Vasile Boloş

Research Concerning Influence of Worm Face Gear Finishing Process upon Noise and Vibration Level

Ion Gavrilă, Vasile Boloş

Preparation and Study of Nanostructured TiAlSiN Thin Films

Laszlo Jakab-Farkas, Sandor Papp, Gabriela Strnad, Gyorgy Safran, Ioan Vida-Simiti, Dominic Biró

Computer Analysis of Functional Parameters and Dental Occlusion

Claudia Şoaita, Sorin Popşor

The Management of the Engineering Research Article Format

Andrea Peterlicean, Arina Modrea

Dead Time Compensation on Anti-Hail Rockets

Ioan Porumb

**Industrial Management, Educational Technologies and Training in
Technology**

Room A309

Friday, November 4th 2011; 11,30 – 13,30

Session chairs:

Liviu Moldovan – “Petru Maior” University of Tîrgu - Mureş

Gheorghe Burz – “1 Decembrie 1918” University of Alba Iulia

New Evaluation Methods by Means of Open System Services for Smartphones

Liviu Moldovan, John Birger Stav

The ABT Methodology Employment For VET of Quality Auditors

Liviu Moldovan

**Research on Establishing the Rank and Quotient of Functions in Product Value
Analysis/Engineering**

Gheorghe Burz, Liviu Marian

**Evaluation of Training Needs for "Petru Maior" University Staff Involved in Engineering
Field**

Gabriela Strnad, Mircea Dulău, Dorin Bică, Diana Andone

Comparative Study on the Dynamics of Real Estate Market Price of Apartments in Târgu Mureş

Emil Nuţju

Use of New Educational Technology in Undergraduate Education

Ana Maria Moldovan

Growth Resource Efficiency and Rebound Effect Environmental

Dumitru Şoaita

Trade Globalization and Movement Environmental Impact

Dumitru Şoaita

Innovation and Communication in Online Life Long Training of Human Resources

Avram Tripon, Blaga Petruţa

Tips of innovation and entrepreneurship in the vision of Canadian innovation centre

Elena Rădulescu

A communication guide for the strategic sustainable development

Mihaela Bucur

Communication in crisis in terms of sustainable development

Mihaela Bucur

Production Technology, Machine-Tools, Numerical Research

Room A308

Friday, November 4th 2011; 15,00 – 18,30

Session chairs:

Vasile Boloş – “Petru Maior” University of Tîrgu - Mureş

Alexandru Pozdârcă – “Petru Maior” University of Tîrgu - Mureş

Microhardness of Teeth Enamel on Whitening Combined with Remineralization Treatment

Gabriela Strnad, Imola Buka

New worm technologies manufacturing on the NC lathe

Alexandru Pozdârcă, Paul Cheţan, Cristian-Sorin Albu, Andrei Oltean

Aspects regarding the aided programming of the electroerosion machine robofil 310

Ioan Mocian, Răzvan Cazacu

Theoretical Peculiarities Regarding the Definition and Representation of the Rolling Surfaces by a Bevel Worm Gear with the Crown Gear of Inverted Conicity

Bucur Bogdan, Márton Máté

Experimental Research on Noise and Vibration Level of Gearbox using Worm Face-Gear with Reverse Tapered Pinion

Bogdan Bucur, Vasile Boloş

Research on Roughness Resulted Through Milling of the Surfaces with CBN Tools

Paul Cheţan, Vasile Boloş

Determining the Teeth Front Profile of Chain Wheels Measured in Coordinate on Machine "Smart CMM" - Wenzel

Constantin Bucur

Numerical Research in Kisssoft for Noise Reduction in Spur Gears Transmissions

Cosmin Petra

Studies for Obtaining a Small Hole, Rapid EDM Drilling Machine

Mihai Şimon, Lucian Grama

Pneumatic vehicle. Research and design

Mihai Şimon, Liviu Dorin Pop, Zsolt Lokodi

Experimental Determination of Rigidity for Mechanical Press PAI 40

Teodor Socaciu, Liviu Dorin Pop

Vibration Compensator with Overshoot and Peak Time Constraints for Mechatronic Systems

Marius Sebastian Rusu, Lucian Grama

Challenges in Industrial Property Activity – Workshop

Room A308

Friday, November 4th 2011; 18,30 – 20,00

Session chair:

Dumitru Şoaită, "Petru Maior" University of Tîrgu - Mureş

Invited speakers:

Lucian Grama

Virgilius Vasilache

Waste Processing, Environmental Engineering and Ecological Impact

Room A102

Friday, November 4th 2011; 11,30 – 13,00

Session chairs:

Florica Morar, "Petru Maior" University of Tîrgu - Mureş

Gabriela Boca, Environmental Protection Agency Mureş

Implementation of Seveso Directive in Romania with features, in Mureş county

Iulian Zidărescu

Cattle influence on ecosystems

Cornel Podar

Vulnerability to natural hazards technological sites in Tirnavelor Plateau

Gabriela Boca

Achievements in environmental protection from pesticides

Marian Pogăcian, Olga Cristea

Considerations on the application of environmental legislation in quality control ecological factors

Ioan Hasegan

Obtaining Water with a High Degree of Purity by Using Reverse Osmosis

Nicolae Chirilă

Using Gravimetric Measurement for Determination of the Mass Fraction PM_{2.5} and PM₁₀; Regarding the Particles in Suspension from Târgu Mureş Area

Nicolae Chirilă

Soil thematic strategy

Florica Morar

Considerations regarding the quality indicators of industrial waste water from the exit of the pre-treatment station

Florica Morar, Cosmin Petra

Studies Concerning Recycling by Composting Organic Waste in Tg-Mureş

Florica Morar