



GEORGE EMIL PALADE
UNIVERSITY OF MEDICINE,
PHARMACY, SCIENCE, AND
TECHNOLOGY OF TARGU MURES

Faculty of Engineering and
Information Technology

The 15th International Conference
INTER-ENG 2021
Interdisciplinarity in Engineering



CONFERENCE PROGRAM

“George Emil Palade” University of Medicine, Pharmacy, Science
and Technology of Târgu Mureş
Faculty of Engineering and Information Technology

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7 - 8 October 2021
Târgu Mureş, Romania

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Opening Ceremony

Thursday, October 7th; 10:00 – 10:30

On-line, Faculty of Engineering and Information Technology

Welcome Addresses:

Prof.dr. Leonard AZAMFIREI - Rector

Prof. dr. Călin ENĂCHESCU – Vice Rector

Prof. dr. habil. eng. Liviu MOLDOVAN –

- Dean of the Faculty of Engineering and Information Technology

Special Invited talk:

Thursday, October 7th; 10:30 – 12:00

On-line, Faculty of Engineering and Information Technology

AIED and Smart e-Tutor Systems

Prof. dr. habil. László Kovács – University of Miskolc, Department of Information Technology

Implementation of Industry 4.0 Concepts in a Learning Factory

Prof. dr. eng. Dan Centea

Digitalization of the Construction Industries: Challenges and Strategies

Prof. Ahmed Hussein Ibrahim

Digitalization in MENA regions: Transformation Challenges

Prof. dr. eng. Abdelazim M. Negm

Parallel Sessions

Thursday, October 7th; 12:00 – 16:00

Location: On-line - Faculty of Engineering and Information Technology

Advanced Manufacturing Technologies and Materials
Room: Online A001 – Faculty of Engineering and Information Technology
Thursday, October 7th 2021; 12:00 – 15:30

Session chairs:

- Gabriela Strnad – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Ildiko Peter – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Liviu Pop – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România

Zn-Al Anticorrosive Coating, Adapted to Obtain Protected Steel Wires

Marius Tintelecan, Dana-Adriana Iluțiu-Varvara, Oscar Rodriguez Alabanda, Ioana Monica Sas-Boca, Gustavo Aristides Santana Martinez

Calculation Program for an Elastic Coupling with Bolts and Non-Metallic Elements From Natural Rubber

Marilena Ghițescu, Ion-Marius Ghițescu, Sorin Vlase, Arina Modrea

Legal Requirements Versus Customer Requirements in Machine Cabin Design

Daniel Lates

Value Stream Map Importance in the Field of Electrostatic Powder Painting

Jozsef Boer, Petruta Blaga

Low-Velocity Transverse Impact Investigations of Cfrp Composite Laminated Plates - Simplified Static Simulations Versus Dynamic Experimental Tests

Marius Nicolae Baba, Florin Dogaru

An Assessment of the Metallic Iron Content From Steel Mill Scale – Essential Factor for Sustainability and Circular Economy

Dana - Adriana Ilutiu - Varvara, Marius Tintelecan, Claudiu Aciu, Carmen Maria Marza, Ioana Monica Sas - Boca

Research on Quick-Closing Systems for Classroom Doors

Liviu Dorin Pop, Majlath Sándor Dániel

Dimensional Optimization in Screw Fixation for Personalized Treatment of the Tibial Plateau Fracture

Flaviu Moldovan, Adrian Gligor, Tiberiu Bataga

Bacillus Sp. R2: Promising Marine Bacterium with Chitinolytic/Agarovorant Activity and Multiple Enzymes Productivity

Benamar Cheba

Innovative Technologies, Design and Materials in Civil Engineering
Room: Online A002 – Faculty of Engineering and Information Technology
Thursday, October 7th 2021; 12:00 – 16:00

Session chairs:

Răzvan Cazacu – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Mihai Simon – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România

Comparative Analysis Between Two Constructive Solutions of a Steel Tied-Arch Road Bridge

Stefan Gutiu, Catalin Moga, Mircea Suciu, Alexandra Denisa Danciu

Behavior Analysis of One-Component Waterproofing Mortars by Mechanical and Nmr Investigations

Daniel Cadar, Lucia Daniela Manea, Elena Jumate, Dumitrita Corpodean, Radu Fechete

Characterization of Lightweight Concrete with Chopped Plastic Bottles

Sabina Scripca, Gabriel Bejan, Liliana Bejan, Marinela Bărbuță

Comparative Analysis Between the Hanger Arrangement in An 80M Network Arch Bridge with Circular Hollow Cross-Sections

Alexandra Denisa Danciu, Stefan Gutiu, Catalin Moga, Maria Bucerzan

Paper Ash Used As Substitute of Cement in Mortar Mixtures

Maria Loredana Tintisan, Adrian Cristian Siomin, Anamaria Zaharie, Daniela Lucia Manea

Recovery of Used Paints in the Field of Plaster Mortars

Adrian-Cristian Siomin, Maria Loredana Tintisan, Anamaria Zaharie, Daniela Lucia Manea

Influence of Iron Trioxide Addition on Alkali-Activated Fly Ash-Based Geopolymer Paste

Bradut Alexandru Ionescu, Mihail Chira, Adrian-Victor Lazarescu, Carmen Florean

Cementitious Composite Materials with Self-Healing Properties Using Integral Waterproofing Admixtures by Mass Crystallization

Tudor Panfil Toader, Carmen Dico, Calin Mircea

Influence Tio₂ Nanoparticles Addition on the Physico-Mechanical Performances of Micro-Concrete

Elvira Grebenisan, Andreea Hegyi, Adrian-Victor Lazarescu, Henriette Szilagyi, Carmen Florean

The Use of Ceramic Waste in the Construction Materials Industry Based on the Concept of Sustainable Development

Anamaria Zaharie, Adrian Cristian Siomin, Maria Loredana Țințișan, Daniela Lucia Manea, Luminița Monica Pleșa

Use of Wastes in Obtaining Self-Compacting Concrete

Vlad Constantin Panaite, Marinela Barbuta

Aspects Regarding Reinforced Concrete Pillars Strengthening Methods

Simona Stanca

Management and Education for Sustainable Manufacturing
Room: Online A003 – Faculty of Engineering and Information Technology
Thursday, October 7th 2021; 12:00 – 16:00

Session chairs:

- Mihaela Bucur – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Sorina Moica – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Cristina Veres – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România

Comparative Quantitative Analysis of Air Quality Indicators and Macroeconomic Indicators for Eu and Non-Eu Member Countries

Bacos Ioan-Bogdan, Gabor Manuela Rozalia

Work Regulation and Time Management to Avoid Occupational Stress in Industry

Camelia Angelica Dâmbean, Manuela. Rozalia Gabor

The Effects of New Infrastructure on Traffic Dynamics. An Urban Simulated-Based Model

Mircea Rosca, Eugen Rosca¹, Cristina Oprea, Florin Rusca, Oana Dinu, Aura Rusca

Road Traffic Accidents - Safety Analysis of Urban Travel with Two-Wheel Vehicles

Cristina Oprea, Anamaria Ilie, Mircea Rosca, Florin Rusca, Sergiu Olteanu, Isabela Ilie

Performance Evaluation of Dispatching Rules and Simulated Annealing in a Scheduling Problem From a Quality-Functionality Perspective

Diogo Almeida, Luís Ferreira, José Carlos Sá, Manuel Lopes, Francisco Silva, Mário Pereira

A Lean Framework for Machining Budgeting Operations

Francisco Silva, Vítor Sousa, José Carlos Sá, Matilde Tojal, Luís Ferreira, Pedro Nogueira

Sustainability Strategy Methodology to Increase Brand Value

Michele Wong, Mihai Daniel Aniței, Cristina Veres

Smart Production Concept and Improvements in Automotive Industry

Cristina Veres, Roxana-Diana Dobrău

Effects of Using Combined Approach of Quality Circles & 7 Steps Method in Automotive Industry. a Case Study

Sebastian Căndea, Cristina Veres, Petruța Blaga, Emil Nuțiu

The Challenges Brought by Gdpr to the Use of Intelligent Systems

Andrea Kajcsa, Lucreția Dogaru

European Union Strategies and Policies in the Current Context of Technologization

Lucreția Dogaru, Andrea Kajcsa

The Continuous Improvement Cycle Core Activities for the Sustainable Development of Healthcare Facilities

Flaviu Moldovan, Petruța Blaga

Organizational Governance Assessment of Healthcare Facilities for Sustainable Development

Flaviu Moldovan, Petruța Blaga

An Innovative Project for Higher Education Leadership in Advancing Inclusive Innovation for Development

Liviu Moldovan

An Innovative Trainers' Toolkit for Innovation Management in Low- and Middle-Income Countries

Liviu Moldovan

Neuromarketing Tools in Industry 4.0 Context: a Study on Romanian Market

Alexandra Ioanid, Cezar Scarlat

Particular Life Span of a Medical Rehabilitation Exoskeleton Device – the First Step in Implementing a Quality Management Norm in Real Life

Liviu Cristian Chis, Liviu Moldovan, Monica Chis

Study on the Short-Term Impact of the Covid-19 Pandemic on the Logistics Field

Ștefan Nagy-Bota, Liviu Moldovan, Monica-Cristina Nagy-Bota

An Interdisciplinary Approach to Ecological Education for Technical Students

Dana Rus, Nicoleta Marcu, Annagurbanov Ymammuhmet

On the use of technology in education. A case study on the application of interdisciplinarity in technical education: the ECORE tool

Bianca Han

Integrating environmental issues in the development of communication skills and the importance of environmental sustainability training

Nicoleta Marcu, Dragos Morar, Dana Rus

Power Systems, Energy Efficiency and Renewable Technologies
Room: Online A004 – Faculty of Engineering and Information Technology
Thursday, October 7th 2021; 12:00 – 16:00

Session chairs:

- Dorin Bică – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Cristian-Dragoș Dumitru – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Adrian Gligor – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România

Investigations on the Hygrothermal Properties of Aerogel Insulation Blankets

Adrian Bucur, Ligia Mihaela Moga, Daniela Lucia Manea

Improving the Thermal Insulation of Cement-Based Composites Using Tea Waste Aggregates

Othmane Horma, Mouatassim Charai, Ahmed Mezrhab

Thermal Effects on Dynamic Control of Fgm Kirchhoff Plate with Bonded Piezoelectric Materials

Loukmane El Khaldi, Khadija Messaoudi, Mustapha Sanbi

Simulation of a Solar Driven Air Conditioning System For Mitigating the Cooling Demand of Buildings Located In Semi-Arid Climates: a Case Study

Sara El Hassani, Mouatassim Charai, Mohammed Amine Moussaoui, Ahmed Mezrhab

Analysis of the Power Demand in Romania During the Covid-19 Pandemic

Lucian Ioan Dulău, Dorin Bică

Energy Losses Estimation in the Electric Distribution Networks Using Clustering-Based Selection of the Representative Feeders

Ecaterina Chelaru, Noroc Livia, Gheorghe Grigoras, Bogdan-Constantin Neagu

Analysis of the Charging Price and Travel Time of Battery Electric Vehicles in Romania

Lucian Ioan Dulău, Dorin Bică

Load Modeling Approaches in Smart Grids: An Overview

Bogdan-Constantin Neagu, Mihai Gavrilas, Gheorghe Grigoras, Ovidiu Ivanov

Multicriterial Assessment of Power Losses in Electricity Distribution Grid Considering the Profile Consumers Analysis

Adrian Gligor, Cristian-Dragoş Dumitru, Ilie Vlăsa

Analytical Modelling Approach of Photovoltaic Curves: Analysis and Comparison

Mohamed Louzazni, Brahim Belmahdi

Pitch Angle Control of the PMSG Wind Turbine

Sabra Ahyaten, Jalal El Bahaoui, Narjisse Amahjour, Francisco Ortegon Gallego

Simulation of Broken Rotor Bar Influence on Motor Vibration

Katalin Agoston

Designing and Development of a Intelligent Energy Supply and Powertrain Systems for Automotive Sector to Reduce Pollution and Health Risk

Doru-Laurean Baldean, Lavinia Andrei, Viorel Chindea

Enhancing the Energy Efficiency of Photovoltaic Cells Through Water Cooling

Marius Branoaea, Andrei Burlacu, Marina Verdeş, Marius Costel Balan, Robert Ştefan Vizitiu

Automation, Robotics, Biomedical Technologies and Intelligent Systems
Room: Online A005 – Faculty of Engineering and Information Technology
Thursday, October 7th 2021; 12:00 – 16:00

Session chairs:

- Mircea Dulău – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Zoltán Germán-Salló – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Stelian-Emilian Oltean – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România
Adrian-Vasile Duka – "George Emil Palade" University of Medicine, Pharmacy, Science and Technology of Târgu Mureș, România

Improvement of the Vector Control for Dfig Integrated Into a Wind System by Artificial Neural Networks Accompanied by a Reliability Study of the Control System

Aicha Bouzem, Othmane Bendaou, Bousselham Samoudi

The Perturbation Method for Dynamic Analysis of Pole Vaulting

Ouadie El Mrimar, Othmane Bendaou, Bousselham Samoudi

Reducing Traffic Congestion Through Optimal Planning

Eugenia Alina Roman, Vasile Dragu

Considerations on Monitoring the Drowsiness of Drivers Through Video Detection and Real-Time Warning

Maria Claudia Surugiu, Ion Nicole Stăncel

Model for Bus Line Planning in Intermodal Urban Transport Network

Dorinela Costescu, Sergiu Olteanu, Alina Eugenia Roman

Robust Control Design of Mimo Systems

Mircea Dulau, Stelian-Emilian Oltean

Can Image Processing Be Used As AI Method in Integrated Disaster Management?

Ahmet Selcuk Ozgur, Ilknur Teke, Cigdem Tarhan

Comments on the Solutions Set of Equilibrium Problems Governed by Topological Pseudomonotone Bifunctions

Marcel Bogdan

A New Ultra Wide Band Antenna Design with Dual Band for Wlan and Wimax Applications

Nisrin Sabbar, Khalid Hati, Hassan Asselman, Abdellah El Hajjaji

Microbial Bioinformatics: Novel and Promoting Trend for Microbiomics Research and Applications (Review)

Benamar Cheba

Virtual Modeling of An Electro-Mechanical Powertrain and Steering System with Optical Proximity Sensors for Driverless Ambulance Vehicles in Unity 5

Doru-Laurean Baldean, Lavinia Andrei, Tudor Oniga, Viorel Chindea, Adela-Ioana Borzan

A Fuzzy Logic-Based Labview Implementation Aimed for the Detection of the Eye-Blinking Strength Used As a Control Signal in a Brain-Computer Interface Application

Oana Andreea Rusanu

Scada System for Monitoring and Reconfiguring An Electrical Distribution Network After a Fault

Traian Turc, Claudiu Damian

Dynamic Calibration of Tyre-Road Contact Patch Stress Tri-Axial Transducer

Alexandra-Raluca Moisescu, Gabriel Anghelache

A Fuzzy Mathematical Model to Estimate the Energy Cost for Heat Pump System

Alexandra Ban, Constantin Bungău

Cryptographic Key Distribution Protocol with Trusted Platform Module for Securing In-Vehicle Communications

Bela Genge, Piroska Haller

Automated Assessment Generation in Intelligent Tutoring Systems

László Kovács, László Csépanyi-Fürjes, Ghanim Hussein Ali Ahmed

Blockcert – a Blockchain-Based Novel Concept for Automatic Deployment of X.509 Digital Certificates

Adam Mihai Gergely, Bogdan Crainicu

Instantaneous Frequency Identification in Nonstationary Signals

Zoltan German-Sallo

Nonlinear Denoising of Nonstationary Signals
Zoltan German-Sallo