



"Automobile for the Future"

PRELIMINARY PROGRAMME



EAEC 2007

11TH EUROPEAN AUTOMOTIVE CONGRESS

**30 May – 1 June 2007
Budapest, Hungary**

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"Automobile for the Future"

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EAEC 2007

11TH EUROPEAN AUTOMOTIVE CONGRESS

30 May – 1 June 2007
Budapest, Hungary



Tuesday, 29 May	
P.M.	Registration

Wednesday, 30 May			
Registration			
Opening			
<i>Coffee Break</i>			
Plenary Session			
<i>Lunch</i>			
Electronic Control	Development Methodology	Passive Safety	Alternative Energy
Telematics	Passive Safety	Driving Stability	Diesel Engines
Welcome Reception			

Thursday, 31 May			
Virtual Design and Testing			
<i>Coffee Break</i>			
Poster Session & Forum of Exhibitors			
<i>Lunch</i>			
Driveability	Engines, Mechanism	Off-road Vehicles	Hybrid Systems
<i>Coffee Break</i>			
Suspension & Steering	Engines, Combustion	Driver Assistance	Transmission
Banquet			

Friday, 1 June			
Vehicle Body			
<i>Coffee Break</i>			
Brakes	Vibration & Noise	Gear Control	Simulation
Closing Ceremony			
<i>Lunch</i>			

Color codes of the sessions

Advanced Engineering Techniques & Tools · Commercial Vehicles & Buses · Powertrain Technologies · Legislation

Vehicle Design & Manufacturing · Road Safety Programmes

Regulations

Engines, Combustion

Passive Safety

Development Methodology

Driving Stability

Off-road Vehicles

Driver Assistance

Engines, Mechanism

Telematics

Passive Safety

Regulations

Simulation

Alternative Energy

Diesel Engines

Transmissions

Hybrid Systems

Fuel Economy & Safety

Powertrain Technologies

Legislation

Vehicle Design & Manufacturing

Road Safety Programmes

Regulations

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Simulation

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Diesel Engines

Transmissions

Hybrid Systems

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Transmissions

Hybrid Systems

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Legislation

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Road Safety Programmes

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Hybrid Systems

Fuel Economy & Safety

Powertrain Technologies

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Vehicle Design & Manufacturing

Road Safety Programmes

Regulations

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Transmissions

Hybrid Systems

Fuel Economy & Safety

Powertrain Technologies

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Vehicle Design & Manufacturing

Road Safety Programmes

Regulations

Simulation

Alternative Energy

Diesel Engines

Transmissions

Hybrid Systems

Fuel Economy & Safety

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Vehicle Design & Manufacturing

Road Safety Programmes

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Hybrid Systems

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Vehicle Design & Manufacturing

Road Safety Programmes

Regulations

Simulation

Alternative Energy

Diesel Engines

Transmissions

Hybrid Systems

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Powertrain Technologies

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Road Safety Programmes

Regulations

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Diesel Engines

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Hybrid Systems

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Road Safety Programmes

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Road Safety Programmes

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Fuel Economy & Safety

Powertrain Technologies

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Road Safety Programmes

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Road Safety Programmes

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Road Safety Programmes

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Road Safety Programmes

Regulations

Simulation

Alternative Energy

Diesel Engines

Transmissions

Hybrid Systems

Fuel Economy & Safety

Powertrain Technologies

Legislation

Vehicle Design & Manufacturing

Road Safety Programmes

Regulations

Simulation

Alternative Energy

Diesel Engines

Transmissions

Hybrid Systems

Fuel Economy & Safety

Powertrain Technologies

Legislation

Vehicle Design & Manufacturing

Road Safety Programmes

Content

Welcome Message (András Voith)	4
Presidential Address (Prof. Günter Hohl)	5
EAEC Member Societies	6
Committees	7
Introducing FISITA, EAEC and GTE	7
DETAILED SCIENTIFIC PROGRAMME	9
Oral Presentations	9
POWERTRAIN TECHNOLOGIES	9
VEHICLE DESIGN & MANUFACTURING	11
COMMERCIAL VEHICLES & BUSES	12
ADVANCED ENGINEERING TECHNIQUES & TOOLS	14
LEGISLATION	19
Poster Presentations	20
POWERTRAIN TECHNOLOGY	20
VEHICLE DESIGN & MANUFACTURING	24
COMMERCIAL VEHICLES & BUSES	26
ADVANCED ENGINEERING TECHNIQUES & TOOLS	27
LEGISLATION	29
GENERAL INFORMATION	30
Location	30
Congress Venue	30
Transportation	30
Passport, Visa, Invitation Letters	31
Foreign Exchange, Banking Facilities	31
Climate and Weather	31
Clothing	31
Shopping	31
Insurance	32
Important Dates	32
Registration and Payment	32
Cancellation Policy	33
Accommodation	33
Exhibition	33
Social Events	34
Accompanying Persons' Programmes	34
Sponsors of the Congress	35

Welcome Message

It is a great honour for the *Scientific Society of Mechanical Engineers (GTE)* to host the 11th EAEC Congress in Budapest and to welcome the representatives of the European automotive industry as well as engineers and scientists from all over the world who wish to learn about the latest results of the industry or are eager to share their own research achievements.

The motto of the Congress is *Automobile for the Future*. The organisers of the event have chosen this motto in consideration of the strong challenges the automotive industry – in particular the European automotive industry – is currently confronted with. Social mobility and employment need to be sustained as the European automotive industry itself employs some 4 million workers and indirectly provides a living for an additional 10 million people. The automotive industry at the same time has to face the growing problems of environment protection and energy supply, contribute in technical terms to the enhancement of road safety and the improvement of the efficiency of transportation and public road transport. Moreover, European automobile production must have its share in those markets where demand for automobiles is on the rise and the automotive industry is expanding at an impressive pace, while it is to maintain its competitiveness relative to emerging and ever-stronger players of the industry. These seemingly conflicting requirements can be met by way of targeted development and the rapid and extensive exploitation of the results of other industries, such as material sciences and electronics or logistics of manufacturing. This congress is intended to serve as a forum for the discussion of the questions raised and their potential answers.

The Congress will be staged in a country and a region where the automotive industry and its suppliers undergo rapid development. Today, nearly 20% of European-made passenger cars, that is 2.5 million vehicles, are being manufactured in the factories of the CE region. Nonetheless, the region is playing an increasing role in vehicle industry co-operation, the manufacturing and supply of complex units or parts. It is a heartening fact that the major automobile manufacturers, which have initiated and support these changes, have recognised the benefits of moving not only their production but also a part of their R&D activities to this region thereby utilising the competitive expertise of local engineering professionals. This shift is underpinned by the change in the splitting the R&D activities taking over more and more responsibility by the suppliers.

The congress on the one hand seeks to preserve the tradition of EAEC Congresses, on the other hand, it also continues the tradition GTE established by its series of *Meeting of Bus and Coach Experts*. One of the sections is devoted to the special issues of commercial vehicles, busses and coaches.

The organisers are looking forward to the 11th EAEC Congress. We hope and wish that each participant returns home with the experience of an open and progressive debate and new expertise as well as pleasant memories of the days spent in Budapest.

Dr. András Voith
Chairman of the Organising Committee

Presidential Address

It is a great honour and pleasure for me to give the Presidential Opening Address on behalf of EAEC and I would like to welcome all participants to the EAEC2007 Congress. EAEC is the European wing of FISITA and represents 24 national automotive engineer societies with 49,000 automotive engineers.

Europe is not only a continent. The 49 states are in a process of unification based on a unique culture and history. EAEC should support the European automotive industry to continue being an important factor in the global market. We have to remain aware that the most important impacts in automotive technology were initiated in Europe. For example, the main propulsion systems, the Otto and Diesel engines are European developments. The first passenger car and truck were produced in Europe.

Since the first production of a Hungarian car in 1905, this country has become an important country for research and production of automobiles in all categories, and their components.

Leading experts from industry, academia and political institutions will present the latest strategic directions of the European and global industry in order to meet the growing demands of mobility, safety, environmental protection and saving of energy.

EAEC Congresses have become leading biannual events in the automotive world. It is an old tradition that EAEC Congresses bring together engineers, decision-makers, academia and the different players involved in the European automotive industry. The congress participants have the opportunity to obtain information about the latest results and to exchange information in the field of automotive technology and the related industry.

EAEC Congresses are more than regional events. The high number of lecturers and visitors from abroad shows the international importance of this congress. The EAEC2007 Congress provides excellent opportunities for experts in automotive technology to present their latest research results and to exchange information in the field of innovation, safety and environmental protection.

The exhibition during the congress is an opportunity to visit some very interesting companies, ranging from final developers to component producers and engineering service providers. Vehicles together with new and improved components presented in the exhibition offer the opportunity for participants to see innovative developments in reality.

The automotive sector must satisfy an increasing number of legislative demands resulting from the discussion of environmental issues in society. These legislative changes, in turn, have an effect on the market behaviour and requirements of customers. Demands regarding environmental acceptance will continue to increase.

I wish the organisers of EAEC2007 a successful congress and the participants an attractive programme full of interesting information and technological innovations.

Brigadier ret. Prof. Günter Hohl
EAEC President, FISITA Vice President Europe

EAEC Member Societies



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Committees

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VINCZE-PAP, Sándor, Secretary

DUBOKA, Cedomir

ENOMOTO, Hidehiko

IVANOV, Valentin

LENZ, Hans-Peter

MICKE, Sigmar

MIHÁLFFY, Pál

MATOLCSY, Mátyás

PALKOVICS, László

ORGANISING COMMITTEE

VOITH, András, Chairman

HOHL, Günter

KÖRMENDY, Ágoston

LESINSKY, Jan

SZATMÁRI, Éva

VARGA, Attila

VOLLRATH, Ludwig

Introducing FISITA

Fédération Internationale des Sociétés d'Ingénieurs des Techniques de l'Automobile (FISITA) is an independent world body representing over 144,000 automotive engineers belonging to national automotive societies in 38 countries. FISITA was founded in 1948 to provide a global forum for the exchange of technical knowledge on every aspect of vehicle design and manufacture. FISITA brings together engineers and decision-makers from industry, academia and government to work towards the improvement of transportation systems, the conservation of energy and the protection of the environment.

Introducing EAEC

European Automobile Engineers Cooperation is a cooperation of the European automotive engineering societies, which was founded in 1986 within the core of FISITA, responding the need of more specific cooperation among the European societies to forge closer links between the European automobile engineers societies, with the specific objective of interchanging information through programmes of events and joint technical meetings.

Introducing GTE

The Scientific Society of Mechanical Engineers (GTE) was established in 1949 for connecting experts and organisations working in the mechanical industry and its related fields, their provision with information on the areas of research, development, design, educational, appraisal and other technical-economic activities.

The Society itself is a neutral organisation, having individual and justice voluntary membership. The number of registered members is about 3,600, organised in 31 scientific divisions like Vehicle Division in accordance to the professional interest and in 21 regional and local bodies.

For more information please, contact



EAEC

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FISITA

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Congress Secretariat



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DETAILED SCIENTIFIC PROGRAMME

Participants will get the Final Programme and Abstracts of the papers in a booklet and the full material of the presented papers on CD.

Opening speeches by the representatives of GTE, EAEC, FISITA and the Hungarian Government (in progress)

Plenary session: plenary lectures on road safety, relations of environmental protection and vehicle production (in progress)

Oral Presentations

POWERTRAIN TECHNOLOGIES (PT)

PT – Alternative Energy

Dual-Fuel Compression Ignition Engine Fuelled with Liquid LPG

Slawomir Luft (Technical University of Radom, Poland)

The Analyze of Diesel Fuel and Biodiesel Mixture Combustion in D.I.

Diesel Engines

Anghel Chiru, Nicolae Ispas, Corneliu Cofaru, Dorin Dumitrascu, Vladimir Mardarescu (Transilvania University, Romania)

Lubrication and Viscosity of the Bioethanol–Biodiesel–Bioethanol Blends

Máté Zöldy, István Emőd, Zsolt Oláh (Budapest University Technology and Economics, Hungary)

Influence of Piston Crown Geometry for Compressed Natural Gas SI Engines: Performance Evaluation

Rajesh Iyer, T.R. Seetharam, L. Shrikanth Sakhare (Wirtgen India Private Limited, India), *S.A. Channiwala*

PT – Diesel Engines

Transient Operation in Different Heavy Duty Test Cycles as a Special Challenge in the Future

Franz Moser, Rolf Dreisbach, Holger Hülser (AVL LIST GmbH, Austria)

Diesel Engine Response Improvement by Compressed Air Charging

Huba Németh, Piroska Ailer, László Palkovics (Knorr-Bremse Fékrendszerek Kft., Hungary)

Unsteady Flow Turbine Performance in Turbocharged Automotive Engines

Massimo Capobianco, Silvia Marelli (University of Genoa, Italy)

Three-Dimensional Numerical Simulation of Flow through the Twin-Screw Supercharger: Clearance Flow Patterns and Leakage Loss Analysis for Helical Rotors with Symmetric and Asymmetric Rotor Profiles

Katherine Ilie (RMIT University, Australia)

PT – Fuel Economy & Safety

Secondary Safety of a CNG-Retrofitted Vehicle – Results of Two Compared Rear-End Crash Tests

Alexander Berg, Markus Egelhaaf, Peter Rucker (DEKRA Automobil GmbH, Germany)

Bifuel Concept Forecast for a 3 Wheeler Vehicle

Uwe Thien, Achim Schmidt (MAGNA STEYR Fahrzeugtechnik AG + Co. KG, Austria), *Mario Hirz, Roland Kirchberger* (Graz University of Technology, Institute for Internal Combustion Engines & Thermodynamics, Austria)

Simulation of a More Effective Use of Fuel Energy in a Motor Vehicle

Vladimir Hlavna, Dusan Sojcek (University of Zilina, Slovakia)

PT – Hybrid Systems

Fuel Economy and Performance Comparison of Alternative Hybrid Powertrain Configurations

Alireza Veshagh, Andrew Barr (University of Warwick, United Kingdom)

Simulation of Hybrid Electrical Vehicles

Carla Silva, João Bravo, Tiago Farias (Technical University of Lisbon, Portugal)

Simulation of HLA Systems in Small Vehicles

Enrico Chiappini, Daniele Di Rocco (University of L'Aquila, Italy)

Using a Simulation Tool for Concerted Choice and Adaptation of Components for Hybrid Vehicles

Lukas Magerl, Bernhard Geringer, Stefan Winter, Peter Hofmann (Vienna University of Technology, Austria)

PT – Engine Technologies

Homogenous Diesel Combustion Process for Low Emissions

Th. Schatzberger, H. Eichlseder, C. Fuchs, M. Klell, E. Schutting (Technische Universität Graz, Austria)

Take Advantage of Ionic Conductors as Element Using to Evaluate Efficiency Catalytic Converter in Vehicle with CI Engine

Marcin Rychter (Motor Transport Institute, Poland)

Experimental Analysis of the Flow Field in the Filter Housing of a Four-Cylinder Spark Ignition Engine

Angelo Algeri, Sergio Bova, Carmine De Bartolo, Francesco Fortunato (University of Calabria, Italy)

Improvements of SI Engine Operation Using Gasoline–Ethanol Blends

Rainer List, Bernhard Geringer, Peter Hofmann (Vienna University of Technology, Austria)

PT – Transmission

The Gear Rattle Noise for a Manual Transmission: State of Art

Aniello Forcellì, Giovanni Mastrangelo (ELASIS S.C.p.A., Italy)

Improvement of CVT Powertrain Control Strategy and Driveability in Passenger Car

Andrzej Bieniek, Jaroslaw Mamala (Opole University of Technology, Poland)

Load Spectrum Prediction for Transmissions under Realistic Use Combining Tests and Computer Simulations

Günter Willmerding, Jakob Häckh (Steinbeis Transfer Centre New Technologies in Traffic Engineering, Germany)

Characteristics of the Torsen Type Differential Obtained by a Novel Analytical Method

Mart Mägi (Chalmers University of Technology, Sweden)

VEHICLE DESIGN & MANUFACTURING (VD)

VD – Tendencies

Globalization in the Commercial Vehicle Industry

Laszlo Straub (Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Germany)

Central European Automotive Production and Innovation Factor for Global Systems

Jan Lesinsky (Slovak University of Technology, Slovakia)

The Passive Safety of Passenger Cars – Status 2007

Falk Zeidler (DaimlerChrysler AG, Germany)

Drivers Perceptions of Display Information Importance and Placement: A Cross-Cultural Marketing Survey

Phillip Tretten, Anita Gärling, Jan Lundberg (Lulea University of Engineering, Sweden)

VD – Optimised Structures

From Imagination to Reality

Derek Buckmaster (GE Plastics – Automotive, The Netherlands)

The Overlooked Joining Technology of Fasteners for Modern Car Body Structured – Latest Experience from Nut and Bolt Attachment to Advanced High Strength Steels

Johnny K. Larsson, Lea Bengtsson (Volvo Car Corporation, Sweden)

Ultralight Electric Vehicle: A New Concept that Promises Success

Markus Henne, Lukas Wielatt (Hochschule für Technik Rapperswil, Switzerland)

Development of Lightweight Solutions for a Front Subframe

Alessandro Scattina, Enrico Gobetto, Giovanni Belingardi (Politecnico di Torino, Italy)

VD – Passive Safety

Integrated Side/Rear Safety System

Ho Gi Jung, Young Ha Cho, Pal Joo Yoon (MANDO Corporation, Central R&D Center, Korea), *Jaihie Kim* (Yonsei University, Korea)

Advanced Modelling Technique Applied to Improve Dummy Model for Passive Safety Virtual Tests

Domenico Macri, Giovanni Belingardi, Giorgio Chiandussi, Alex Mugnaj
(Politecnico di Torino, Italy)

Pre-Crash Actuator to Improve Car Structural Performance in Side Impact

Eric Zimmerman, Muntean Vlad (Faurecia Interior Systems, Germany)

VD – Comfort

Predicting Long Term Comfort in Cars

Christian Mergl, Heiner Bubb (Audi AG, Germany)

Human Numerical Model for Evaluation of Thermal Comfort in Vehicles

Nuno Martinho (Polytechnic Institute of Leiria, Portugal), Manuel C.G. Silva,
António M.G. Lopes (University of Coimbra, Portugal)

Fuel Driven Air Heater Modul for Integration in HVAC Systems of Commercial Vehicles

Bruno Lindl (J. Eberspächer GmbH & Co. KG, Germany)

Virtual and Physical Development of Car Seat Surfaces

Ralf Stetter (University Ravensburg–Weingarten, Germany)

COMMERCIAL VEHICLES & BUSES (CV)

CV – Passive Safety

An Optimized Transport and Safety Concept for Tractor–Semitrailer Combinations

Ludovico Consano (IVECO S.p.A., Italy)

Volvo’s Front Under-run Protection System (FUPS) for Long Distance Coaches

Bertil Forslund, Hans Persson (Volvo Bus Corporation, Sweden)

In-depth Analysis of a Severe Bus Rollover Accident

Mátyás Matolcsy (Scientific Society of Mechanical Engineers, Hungary)

Rollover Safety Increase and Adequacy for Buses due to Laboratory Tests and Simulations

Sándor Vincze-Pap, András Csiszár (JÁFI–AUTÓKUT, Hungary)

CV – Driving Stability

Model of a Dual Axis Heavy Truck for Handling Studies in Complex Road Situations

Mirosław Gidlewski (Technical University of Radom, Poland)

Second Order Sliding Mode Observer to Estimate the Unknown Inputs of the Heavy Vehicle

Hocine Imine (Laboratoire Central des Ponts et Chaussées, France), Leonid Fridman (University of Mexico, Mexico)

Modelling of Lateral Dynamics of Modular Heavy Vehicle Combinations

Pekka Rahkola (VTT Technical Research Centre of Finland, Finland), Mauri Haataja (University of Oulu, Finland)

Development of a Side Slip Estimation Method

Gergely Bári (Budapest University Technology and Economics, Hungary)

CV – Tire–Road Connection

Today's Demands on Commercial Vehicles Tires

Ingo Schwartländer (Continental AG, Germany)

Influence of the Tire Characteristics on the Driving Performance of Commercial Vehicles

Christian von Glasner (European Association for Accident Research and Analysis, Germany)

Magnetic Fields in Cars: The Role of Tires

Stefan Stankowski (Berne University of Applied Sciences, Switzerland)

CV – Off-road Vehicles

Interest of Continuous Transmission and Active Differential for Off-road Vehicles

Raphael Moreno (DGA/ETAS, France)

Forced Testing of Mining Dump Trucks on Proving Ground

Barys Busel (Belarusian National Technical University, Belarus), Alexandr Egorov (Production Association 'BELAZ', Belarus)

All Wheel Drive Trends and Challenges for Heavy Trucks and Vehicles

Tyler Bean (Marmon-Herrington Co., United States), Andor Opitz (Rába Axle Ltd., Hungary)

Men-in-the-Loop in Off-road Mobility

Guido Korlath (Austrian Academy of Sciences, Austria)

CV – Driver Assistance

Driver Assistance Systems – Status Report 2007

Sigmar Micke, Christian von Glasner (European Association for Accident Research and Accident Analysis, Germany)

Backward Driving Assistant for a Truck with Trailer – New Features with X-By-Wire

Helmut Martin Waser, Martin Horn, Wolfgang Hirschberg (Graz University of Technology, Austria)

Integration of Vehicle Stability Control and Active Suspension for Improved Handling

Chandrasekaran Rengaraj, Adam Adgar, Chris S. Cox, David A. Crolla (University of Sunderland, United Kingdom)

In Board Low Friction Warning Based on Road Data

Yves Delanne (Laboratoire Central des Ponts et Chaussées, France)

CV – Brakes

Neural Modelling of Vehicle Combination Braking Systems Operation

Dragan Aleksendric, Cedomir Duboka (University of Belgrade, Serbia)

Electro-Mechanic Brake Application for Commercial Vehicles

Levente Balogh, Huba Németh, Péter Széll (Knorr-Bremse R&D Center, Hungary)

Modelling of the Friction and Wear Characteristics of Semi-Metallic Friction Materials for Commercial Vehicle Disc Brakes

Zivan Arsenic, Velimir Ćirović (University of Belgrade, Serbia)

CV – Gear Control

Options for Reducing the LCC of Public Buses Using the Voith Diwa Automatic Transmission

Monique Dahms, Robert Müller, Sonja Metzger (Turbo GmbH & Co. KG, Germany)

EcoLife – The Development of a Modern Powershift Transmission for City Buses

Joachim Foth, Wolfgang Schilha, Peter Wunderlich (ZF Friedrichshafen AG, Germany)

This Servo System for VOITH PGS Transmission Actuator (3 bowdens)

Gábor Horváth, Sándor Simonyi (IMI International Kft., Hungary)

ADVANCED ENGINEERING TECHNIQUES & TOOLS (AE)

AE – Electronic Control

Safety Validation of an Autosar Architecture

Kevin Mullery, Brendan Jackman (Waterford Institute of Technology, Ireland)

Automatic Dependability Versus Cost Optimisation of Distributed Vehicle Control Systems

Yiannis Papadopoulos, David Parker (University of Hull, United Kingdom)

Qualitative Reliability Approach of Redundant Brake-By-Wire Design for Commercial Vehicles

Tímea Fülepi, József Óberling (Budapest University of Technology and Economics, Hungary)

Future Drive-By-Wire Architectures of Cars and Trucks: Results of the EU Project

Armin A. Sulzmann, Rachel Heinick (DaimlerChrysler AG, Germany)

AE – Development Methodology

Chaotics: A Versatile Tool for Automotive Research and Design

József Gedeon, A. Dóra (Budapest University of Technology and Economics, Hungary)

Controlling and Monitoring the Performance of the Product Development Process on the Basis of Reliability Parameters

Robert Savić, Darko Kusenic, Alfred Jochimczyk (ZF Friedrichshafen AG, Germany)

Enabling Cost Effective Decision Making Methodologies during Design Time for System Level Electrical Architectures

Cary S. Brown (Mentor Graphics Corporation, United States)

An Integrated Multi-Body Software for the Design of Motorcycles

Roberto Lot, Vittore Cossalter (University of Padova, Italy)

AE – Telematics

The CALM Concept

Tamás Szafkó (Connexis, Hungary)

Advantages and Perspectives of a Wireless Vehicle Position Recognition

Emilia Bratschitsch, Thomas Lechner (University of Applied Sciences, FH Joanneum, Austria)

Challenges in Deploying a Telematics System: Opportunities and Need for Global Standards in Telematics System

Natarajan Ramya, S. Gopalakrishnan (Ashok Leyland Limited, India)

Possibilities of Controller Design for an Automatic Parking Control System

Bálint Szabó (Budapest University of Technology and Economics, Hungary)

AE – Passive Safety

Universal Test Rig for Crash Simulations of Car Components

Andrej Kostanjevec, Mitja Mahnic, Petar Orbanic (Cimos d.d. Automotive Industry, Slovenia)

Study about the Simulation of Vehicle–Pedestrian Collision and Protection

Weigao Qiao, Xicheng Wang (Wuhan University of Technology, China)

Use of System Simulation to Evaluate Impact of Additional Heating Strategies on Vehicle Fuel Consumption and Pollutant Emissions

Abdelmajid Taklanti (Valeo Systemes Thermiques, France), P. Menegazzi, J-C. Dabadie (Institut Français du Pétrole, France), J. Bellettre, S. Rousseau (Ecole des Mines de Nantes, France), D. Almer, R. Meillier (Imagine SA, France)

Head Injury Prediction Tool for Protective Systems Optimisation

Remy Willinger, C. Deck, D. Baumgartner, D. Marjoux (University Strasbourg, France)

AE – Virtual Design and Testing

Virtual Testing as per ECE-R29 Regulations & Comparison with Experimental Results

Devendra Gendar (Eicher Motors, India)

Application of Virtual Instrument in Handling and Stability Test

Zhang Junyou, Wang Shufeng (Shandong University of Technology, China)

Modeling and Validation of Vehicles Conceptual Design Using Haptic Technologies

Umberto Cugini, Monica Bordegoni, Giorgio Colombo (Politecnico di Milano, Italy)

AE – Vehicle Dynamics

A New Approach in Vehicle Dynamics by Means of System Identification

Klaus Prenninger, Wolfgang Hirschberg (Graz University of Technology, Austria),
Joachim Ecker (Magna Steyr, Austria)

Investigations in City Bus Dynamics Using Integrated Software Environment

Valentin Ivanov (Belarusian National Technical University, Belarus), *Barys Shyrokau* (Joint Institute of Mechanical Engineering, Belarus)

Kinematic and Dynamic Model of a Coupled 6-DOF Road Simulator

Javier Gil, Nelson Da Mota, José Antonio Pascual (Centro de Innovación Tecnológica del Automovil en Navarra, Spain)

AE – Driveability

SMART Ambulances; Optimization of Drive Time through Intelligent Air Spring and Damping Control

Lejo Buning, Joop Pauwelussen, Wouter Dalhuijsen (HAN University, The Netherlands)

Measurements and Simulation of Influence of Deteriorated Suspension Elements on Vehicle Handling

Jiri Svoboda, Ondrej Vaculin (Czech Technical University in Prague, Czech Republic)

Objective Driveability Development of Emerging Technologies in a Full-Size Pickup Truck

Eric Schutt, Randall Yost (General Motors, United States), *Erik Bogner, Gernot Leitner* (AVL List GmbH, Austria)

Experimental and Numerical Study of the Wake of a Simplified Car Model in Incidence

Emmanuel Guilmineau (Ecole Centrale de Nantes, France), *Francis Chometon* (Conservatoire National des Arts et Métiers, France)

AE – Engines, Mechanism

Piston Design Based on the Simulation of Probability of Failure

Franz Meisinger, Stefan Kaindl, Peter Fischer (dTech Steyr, Dynamics & Technology Services GmbH, Austria)

Cinematic and Dynamic Analysis and Structural Verify of an Innovative Motorcycle Suspension

Francesco Vitale, Gabriele Virzi Mariotti (Universita di Palermo, Italy)

Fatigue Life Prediction of Thermo-Mechanically Loaded Engine Components

Csaba Halász, Christian Gaier, Helmut Dannbauer (MAGNA Powertrain Engineering Center Steyr GmbH & Co. KG, Austria)

Determination of Dynamic Load and Durability of CRANKSHAFT

Frantisek Palcak, Gellért Presinszky, Ján Sotník (Slovak University of Technology, Slovakia)

AE – Suspension & Steering

Improving Braking Performance by Control of Semi-Active Suspension

Tobias Niemz, Hermann Winner (Technische Universität Darmstadt, Germany)

Simulation Model Design for the Analysis of a Hydraulic Power Steering System at High Steering Angle Speeds

Markus Brändle, Markus Schachner, Bernd Heissing (Technical University of Munich, Germany)

The Steering Wheel Torque Dependency on Vehicle and Steering System Parameters

Peter Pfeffer, Manfred Harrer (University of Bath, United Kingdom)

Semi Active or Active Magnetic Shock-Absorber with Energy Recuperative Feature

István Zádor, László Palkovics (Budapest University of Technology and Economics, Hungary)

AE – Engines, Combustion

Comprehensive Development of Gaseous Fuelled IC Engines with Internal Mixture Formation

Rene Heindl, Helmut Eichlseder, Wolfram Kirchweyer, Dieter Messner (Technische Universität Graz, Austria)

Intake, Exhaust and Valve Timing System Design Using Single and Multi-objective Genetic Algorithms

Mahdi Ahmadi (Irankhodro Powertrain Co., Iran)

Tigers Exhaust Gas Energy Recovery Using an Integrated Turbo-Generator System

Melanie Michon, R.E. Clark, S.D. Calverley, D. Howe (The University of Sheffield, United Kingdom), *G. Johnstone, R. Quinn* (Visteon UK Ltd., United Kingdom), *P. Sykes, M. McClelland* (Switched Reluctance Drives Ltd., United Kingdom)

Development of 2-D Axisymmetric Gas Flow Model for Integration with 1-D Engine Performance Simulation Software

Marek Gono, Marian Poloni, Richard Pearson (Slovak University of Technology, Slovakia)

AE – Vehicle Body

Investigation of Needs for Alignment of Passenger Car Body Test Methods with Existing Regulations

Milan Milovanovic (Zastava Car Institute, Serbia), *Cedomir Duboka* (University of Belgrade, Serbia)

Application for Laboratory Fatigue Testing of Car Body

Sasa Jovanovic, Rade Djukic, Milan Milovanovic (Institute for Automobiles – Zastava, Serbia)

Torsion Eigenvalues of a Bus Structure

Antonio Gauchia Babe, Vicente Diaz Lopez, Ester Olmeda Santamaria, Daniel Garcia-Pozuelo Ramos (Universidad Carlos III de Madrid, Spain)

AE – Test Methods

Test Environment for Developing Automation Systems of Mobile Working Machines

Osku Kaijalainen, Matti Juhala (TKK Laboratory of Automotive Engineering, Finland)

Virtual Simulation of Engine Test Cell for Capacity and Resource Planning

Shankar Venkatachalam, K. Prasanna, L.J. Clement Ravi, K.V. Subramanian (Ashok Leyland Limited, India)

Simulation of Cold Cranking: A Powerful Tool Used by Renault in the Development Cycle of Vehicles to design starters and batteries

Patrick Bastard, François-Xavier Vallet, Emmanuel Laurain (Technocentre Renault, France)

AE – Aerodynamics/Tyre

The Influence of Car Front Geometry on Vehicle Aerodynamics Parameters

Waleed F. Faris, Waqar Asrar, Ashraf A. Omar, Tazkera Sadeq (International Islamic University, Malaysia)

A Study on Sound Insulation of Weather Strip in Automobile

Seung-Gyeong Jeon, Gyu-Ho Lee, Tae-Ho Kim, Joon-Hyung Kim (R&D Center, Hwa-seung R&A, Korea)

A New Mathematical-Computer Model for the Tyre Traction on Soft Soil and its Verification

Artur Szafarz, Zbigniew Blaszkiewicz (Agricultural University of Poznan, Poland)

AE – Brakes

Dynamic Behavior of Braking Automobile

Marijonas Bogdevicius, Oleg Vladimirov (Vilnius Gediminas Technical University, Lithuania)

An Investigation of the Dynamic Center of Pressure of a Brake Pad during a Brake Application and its Relationship to Caliper Mounting Geometry and Brake Noise

John Fieldhouse, Naveed Ashraf, Chris Talbot (The University of Huddersfield, United Kingdom), Thierry Pasquet, Franck Pujol, Gabriel Rejdych (Bosch Braking Systems, United Kingdom)

The Manipulation of Heat Transfer Characteristics of a Pin Vented Brake Rotor through the Design of Rotor Geometry

Edward Palmer, Rakesh Mishra, John Fieldhouse (University of Huddersfield, United Kingdom)

AE – Vibration & Noise

Vehicle Sound Package Optimization Study Using Statistical Energy Analysis Method

Xu Wang, Lee Kin Bin, Gianto Junaidi, Aleksandar Subic, Jason Miller (RMIT University, Australia)

A Combined Perturbation – and Matrix Division Technique for Locally Damped Systems

Bernhard Sieberer, Peter Fischer, Walter Hinterberger (dTech Steyr, Dynamics & Technology Services GmbH, Austria)

Optimisation of Damping Layers Applied to Automotive Panels

Adam Markowicz, X. Wang, A. Subic (RMIT University, Australia)

AE – Simulation

A Driver Model for Vehicle System Dynamics Simulation

Johannes Edelmann, Manfred Plöchl, Peter Lugner (Vienna University of Technology, Austria)

Friction and Wear Simulation of a Cam Tappet Contact Using TEHL under Mixed Friction Conditions

Hubert Schwarze (Technical University Clausthal, Germany), *Petra Wiersch* (INA-Schaeffler KG, Germany), *Rudolf Menne* (Ford Research Center Aachen GmbH, Germany), *Andreas Brohmer, Andreas Müschen* (Ford-Werke GmbH, Germany)

ALSIM – Dynamic Dip Painting Simulation

Erich Zohlhuber, Josef Reichweger (MAGNA Powertrain Engineering Center Steyr GmbH & Co. KG, Austria)

LEGISLATION (LE)

LE – Road Safety Programmes

Safety Programs of the German Road Traffic Safety Council

Christian Kellner (Deutscher Verkehrssicherheitsrat e.V. (DVR), Germany)

First Results of the ProSiguR Road Safety Pilot Project in Romania

Petru Branzas, Istvan Barabas, Adrian Todorut (Technical University of Cluj-Napoca, Romania)

Harmonization of Road Price Regimes in Europe

Ádám Török, Katalin Tánzos, Ágnes Kosztyó (Budapest University Technology and Economics, Hungary)

LE – Regulations

Principles of Technical Harmonization in a Nutshell. Who is when responsible for what?

Thomas Wilrich (Weiler Rechtsanwaelte, Germany)

Checking Electronic Vehicle Safety Systems by the European Technical Services – Possibilities and Limits

Jörg Van Calker (FSD Fahrzeugsystemdaten GmbH, Germany)

Innovation Trends in the Field of Exhaust Gas Aftertreatment Systems of Internal Combustion Engines

Michael Boye, Marcus Döring, Frank van der Staay, Jorge Raposo, Chava Jucker (European Patent Office, The Netherlands)

Poster Presentations

POWERTRAIN TECHNOLOGY (PT)

A Comparative Performance Analysis of Natural Gas Fuelled Light-duty Vehicles

Seyed Bashir Samsam Shariat (Electrofan Co., Iran)

A Cost Effective Digital EGR Concept for Direct Injection Diesel Engine

Yogesh Aghav (Corporate Research And Engineering, Kirloskar Oil Engines Ltd., India)

A Feed Forward Model for Combustion and Performance Study of a Direct Injection Diesel Engine

Khashayar Ebrahimi, Seyed Ali Jazayeri, Majid Bazargan (K N Toosi University of Technology, Iran)

A Fuel Economy Based Gear Shifting Strategy

Behrooz Mashadi, Reza Baghaei Lakeh (Iran University of Science and Technology, Iran)

A Small City Series Hybrid Electric Vehicle: Performance Evaluation

Nabil Hammad, Essam M.M. Allam, Ahmad A.A. Saad, Shawki A. Abouel-Seoud (Helwan University, Egypt)

About the Efficiency of Gears

Florian Ion Petrescu, Narcisa A. Popescu, Relly Victoria V. Petrescu (POLITEHNICA University of Bucharest, Romania)

Alternative Ecological Solutions for Fuels Running Diesel Engines Used for Public Transportation in Big Cities

Nicolae Burnete, Ioan Rus, Alexandru Naghiu, Bogdan Varga, Adrian Costea (Technical University of Cluj-Napoca, Romania)

An Advanced Clutch Control Strategy as a Part of an Automated Manual Transmission System

Avesta Goodarzi (Iran University of Science and Technology, Iran)

An Experimental Investigation of Gear Rattle

James Ottewill, Simon A. Neild, R. Eddie Wilson (University of Bristol, United Kingdom)

Analysis of Hybrid Drive-Train Based on Planetary System for Two Wheelers

Francesco Frenzo, Alessandro Caleo, Massimo Ceraolo, Filippo Segala (University of Pisa, Italy)

Analysis of New Hybrid Transmission Designs for Speed Addition HEV Propulsion Systems

Dragos Cruceru, Ioan M. Oprean, Cristian N. Andreescu (POLITEHNICA University of Bucharest, Romania)

Automatic Gearbox Control through Vector (CANOE)

Bogdan Varga, Ioan Rus (Technical University of Cluj-Napoca, Romania)

Bond Graph Modeling and Forward Simulation of a Parallel Hybrid Electric Powertrain with Epicyclic Automatic Transmission

Dragos Cruceru, Ion Tabacu (POLITEHNICA University of Bucharest, Romania)

Chemical Pollution Evaluation for Four Types of Biofuel Blends

Istvan Barabas, Nicolae Burnete, Petru Branzas (Technical University of Cluj-Napoca, Romania)

Combination of Ceramic Oxygen Conductors and Thermoelectric Materials as a Method to Eliminated the NO_x Emission from Compression Ignition Engines

Jerzy Merkisz, P. Fuć, P. Lijewski (Poznan University of Technology, Poland), K.T. Wojciechowski (AGH University of Science and Technology)

Compensation of Mechanical Inertia in Passenger Car with Spark Ignition Engine

Jaroslav Mamala, Jerzy Jantos, Andrzej Bieniek, Sebastian Brol (Opole University of Technology, Poland)

Concerning Methods of Theoretical Determination of the Economy Characteristic of the Car with Benzine Internal Combustion Engines

Nedka Stancheva, Dimitar Stanchev, Todor Delikstov (University of Rousse, Bulgaria)

Constructive and Functional Parameter Limits of Synchronization May Interdict Engine Braking in Downslope Traffic

Petru Branzas, Istvan Barabas, Adrian Todorut (Technical University of Cluj-Napoca, Romania)

Control Design of a Clutch Actuator with Sensorless Brushless DC Motor Drive

Younghoon Cho, Hanwook Bae, Youngkwang Kim, Kwangsoo Nam, Woojin Cha (Hyundai MOBIS, Korea)

Design and Development of an E-CVT for a Two-Wheeler

Mohan Gangadurai, Srinath Gopinath (TVS Motor Company Ltd., India)

Design of Fuel Supply, Intake and Exhaust Systems and Piston Assembly of a Dedicated Compressed Natural Gas Engine at Different Stroke to Bore Ratios

Rajesh Iyer, Shrikanth Sakhare L. (Wirtgen India Private Limited, India), S.A. Channiwala (Sardar Vallabhbhai National Institute of Technology, India)

Development and Use of Vehicle Powertrain Simulation for Fuel Economy and Performance

Aly Maher Abou-El-Nour, Shawki A. Abouel-Seoud, N.A. Abdelhalim (Helwan University, Egypt)

Development of a Variable Valve Timing and Lift System for Low Part Loads Efficiency Improvement

Adrian Clenci, Vasile Hara (University of Pitesti, Romania), Pierre Podevin, Georges Descombes (Conservatoire National des Arts et Métiers, France), Adrian Biziiac (Automobile Dacia S.A., Romania)

Diesel Motor Pollution and Functional-Constructive Performances Compromise Optimization, using Fuzzy Sets

Virgiliu Dan Negrea (Politehnica University of Timisoara, Romania), George Dragomir, Florin Blaga (University of Oradea, Romania)

Effectiveness of Active and Passive Methods of Improving Transient Response in Turbocharged Engine Systems

Oliver Gilkes, R. Mishra, J. Fieldhouse, H.V. Rao (University of Huddersfield, United Kingdom)

Effects of Fuels Mixing – Hydrogen Rich Gas on Efficiency and Emissions of Internal Combustion Engines

Radu Chiriac, Nicolae Apostolescu (POLITEHNICA University of Bucharest, Romania), *Coreliu Dica* (SC Rokura Aplicatii Industriale SRL Bucharest, Romania)

Estimating Interface Conductance between Periodically Contacting Surfaces Using the System Identification Technique

M.H. Shojaeefard, A.R. Noorpoor, K. Goudarzi, A. Fazelpour (Iran University of Science and Technology, Iran)

Experimental Analysis of Biodiesels Using D.I Diesel Engines

Franklin Joseph Ashwin, Anandram Venkatasubramanian, Venkittaraman Anand, Rao G. Lakshmi Narayana, S. Sampath (Sri Venkateswara College of Engineering, India)

Finite element analysis of cushion discs in automotive clutches

S. Sfarni, E. Bellenger, J. Fortin, P. Coorevits (Université de Picardie Jules Verne, France), *P. Hervet, M. Malley* (Valeo Transmissions – Centre d’Etude des Produits Nouveaux, France)

Impact Response of Bridges due to Vehicle Dynamic Wheels Loads by Speed and Road Roughness

Louay Abou-El-Nour, E.H. Eldannanh (Helwan University, Egypt)

In Cylinder Pressure and Load Torque Estimation Using the Engine Rotational Speed

Jacky Ölscher, Peter Dünow (Wismar-University of Applied Sciences, Germany), *Bernhard Lampe* (University of Rostock, Inst. of Automation, Germany)

Increasing Accuracy of Multiple Injection Patterns in Common Rail Systems by Use of a Magneto-Elastic Pressure Sensor

Julian Baumann, Bedikt Merz, Uwe Kiencke (Universität Karlsruhe, Germany), *Jürgen Fritsch* (Siemens VDO Automotive, Siemens AG, Germany)

Linearity Optimization of Electronic Throttle Sensor of Diesel Engine

Mingjiang Hu, Zhong Wang (Jiangsu University, China)

LPG and CNG as Alternative Fuels for Vehicle Drive

Miljko Kokic, Dimitrije Obradovic, Snezana Vrelic (Zastava Vehicle Group, Serbia)

Mixture of Local Experts for Pollutants Emission Modeling

Monjed Ezzeddine (PSA Peugeot Citroen, France), *Regis Lengelle* (University of Technology of Troyes, France)

Modeling and Simulation Based on MATLAB in Induction Motor Drive Control System for Electric Vehicle

Li Zhai, Feng-chun Sun (Beijing Institute of Technology, China)

Modeling the Emissions Control Performance of a Catalyzed Diesel Particulate Filter (CDPF) System for Light Duty Diesel Applications
Andrew P.E. York, Timothy C. Watling, Mehrdad Ahmadinejad, David Bergeal, Paul R. Phillips, Daniel Swallow, Malin Byfeldt (Johnson Matthey Technology Centre, United Kingdom)

Modeling the Energy Flow of Hybrid Propulsion Systems
Benedikt Merz, Stephan Brummund, Andreas Walter, Uwe Kiencke (Universität Karlsruhe, Germany)

Multi-Zone Model for Direct Injection Dual Fuel HCCI Combustion
Seyyed Ali Jazayeri (K N Toosi University of Technology, Iran), *Mojtaba Keshavarz, Ghasem Javady Rad* (Iran Heavy Diesel Mfg. Co., Iran)

Novel Materials and Approaches for Producing Carbon Fiber
Alan Wheatley (University of Sunderland, United Kingdom), *C. Dave Warren, Felix L. Paulauskas, Cliff Eberle* (Oak Ridge National Laboratory, USA), *Amit Naskar* (Oak Ridge Institute of Science and Technology, USA)

Off Road Wheel Traction Performance – Comparison between Models and Experimental Data
Radu Rosca, Edward Rakosi, Gheorghe Manolache (Technical University Iasi, Romania)

On-board Ammonia Measurements for SCR Equipped Vehicles
Guido Lenaers, Van Poppel (VITO, Belgium)

On-board Diagnostic of Diesel Locomotives Engines with the Use of Chosen Vibroacoustic Signal Parameters
Jerzy Merkisz, Franciszek Tomaszewski, Marek Waligórski (Poznan University of Technology, Poland)

Optimized Curve Gear Shifting Inhibition in Automatic Transmission
Euplio Pagliarulo, Claudio Cervone, Massimiliano Ercole, Fabio Garofalo, Giuseppe Gatti (ELASIS S.C.p.A., Italy)

Power Split Transmissions for Hybrid Electric Vehicles
Qinglian Ren, David A. Crolla, Alan Wheatley (University of Sunderland, United Kingdom)

Results of Experimental Research of Power Transmissions
Antoaneta Dobрева, Peter Stamatov, Atanas Kolev, Vasko Dobrev, Svetlin Stoyanov (University of Rousse, Bulgaria)

Serial Hybrid Electric Military Demonstrator – DPE 6*6
Raphael Moreno (DGA/ETAS, France)

The Dynamical Perfect Engine
László Toth, Marta Toth, Laszlo Toth Jr. (Serbia)

The Effect of a Fuel Composition on the Diesel Exhaust Emissions
Kiril Barzev, Djemal Mehmedov (University of Rousse, Bulgaria)

The Impact of Exhaust Gases Dissolved in Diesel Oil on Combustion Processes in CI Engine
Jerzy Merkisz, Władysław Kozak, Maciej Bajerlein, Jarosław Markowski (Poznan University of Technology, Poland)

- The Influence of Air Dissolved in the Diesel Fuel on the Speed of Heat Release in the Combustion Process and the Compounds in Exhaust Gases**
Jerzy Merkisz, Władysław Kozak, Jarosław Markowski, Maciej Bajerlein (Poznan University of Technology, Poland)
- The Intake Air Flow Simulation for Internal Combustion Engines**
Nicolae Filip, Emilian Borza (Technical University of Cluj-Napoca, Romania)
- The Reduction of Exhaust Emissions from Diesel Engines by Means of Oxygenated Fuel Additives**
Miloslaw Kozak, Jerzy Merkisz (Poznan University of Technology, Poland)
- Theoretical and Experimental Aspects Regarding Gasoline and Ethanol Fuel in Spark Ignited Engines**
Adrian-Radu Costea, Nicolae Burnete, Bogdan Varga (Technical University of Cluj-Napoca, Romania)
- Tuning Vibration's Simulation for Rear View Mirrors by the Concurrent Application of System Identification Algorithms and CAE Softwares**
José Manuel Rodríguez Fortún, María Luisa Novella Requena, Jordi Sánchez Yenes (FICO Mirrors – FICOSA International, Spain)
- Vibrational Analysis of an Automotive FEAD Using Multibody Approach**
De Stefanis, Angela Romano, Francesco Sbarbati (ELASIS S.C.p.A., Italy)
- Vibroacoustic Analysis of a Twin Cylinder Engine: Motorbike Application**
Ciro Pezzi, Veronica Citarella, Filosa Roberta, Petrella Luigi, Mastrangelo Giovanni (ELASIS S.C.p.A., Italy)

VEHICLE DESIGN & MANUFACTURING (VD)

- A Contribution to Analysis of Behaviour of the Dynamic System: Driver–Vehicle–Road**
Miroslav Demic, Djordje Diligenski, Ivan Demic, Milan Demic (Vinca Institute of Nuclear Sciences, Serbia)
- A Different Energy Management Strategy for SUVs Bumper System to Meet Lower Leg Impact Requirements**
Dhanendra Nagwanshi, Gerhard Zenz, Sandeep Kulkarni (GE John F Weltch Technology Centre, India)
- A Study on Vehicle Window Regulator Motion**
Joon-Hyung Kim, Seung-Gyeong Jeon, Jung-Ho Hwang (Hwa-seung R&A, Korea)
- Air Flow and Heat Dissipation Analysis of Commercial Vehicle Brake Discs**
Marko Tirovic, Carlos Hannover, Galindo-López (Cranfield University, United Kingdom)
- An Improved Air Suspension System for a Road Vehicle with Coloumb Damping**
Manishankar Biswas, Shailendra Kumar Athanery (Indian Institute of Technology Delhi, India)
- Anti-Lock Brake System Performance Analysis Used on M3 Category Vehicles**
Kanstantsin Mazanik (Belarusian National Technical University, Belarus)

Brazing of Aluminium and Aluminium Alloys by CO₂ Laser

Tamás Markovits, János Takács (Budapest University of Technology and Economics, Hungary)

Coulomb Friction Model, Road/Tire Contact Application

Mounia Nadji, Michel Gothié (Laboratoire Central des Ponts et Chaussées, France), C. Henri Lamarque (ENTPE, France)

Development and Implementation of a Video Based Lane Following System

András Ribizsár, Milán Tamás, Imre Benyó, István Wahl (Thyssen Krupp Presta – Research and Development Institute, Hungary)

Direct Heat Loss to Combustion Chamber Walls

Takeshi Sugihara, Yasuko Suzuki, Masahiko Emi, Kenjiro Shimano, Yoshiteru Enomoto (Musashi Institute of Technology, Japan)

Effect of Wheels on the Aerodynamic Characteristics of Cars

Tamás Régert, Tamás Lajos (Budapest University of Technology and Economics, Hungary)

Export System of Automotive Transportation Service

Aliaksandar Shumilin, Uladzimir Shabeka, Andrei Kasouski (Belarusian National Technical University, Belarus)

Fatigue Life Evaluation of Post-Weld Cold Worked Steel Resistant Spot Welds Using DCPD Method

Dave Kim (Washington State University Vancouver, USA), Minhyuk Kim, Byeongsoo Lim (Sungkyunkwan University, Korea)

Functional Improvement of Automotive High Strength Steel Grades by Niobium Microalloying

Hardy Mohrbacher (Companhia Brasileira de Metallurgia e Mineração (CBMM), Germany)

High Performance Material in Vehicle Design

Irfan Malik, Mohsin Manzoor, Ahmad Bilal (Institute of Space Technology, Pakistan)

Numerical Study of the Effect of Injection Velocity and Injection Targeting Point on Fuel Evaporation Rate in a Port Fuel Injection Engine by Using Kiva-3V Simulation Code

Ali Nassiri-Toosi, A. Lotfi Nozari (Iran University of Science and Technology, Iran)

Prototype Configuration of the LETHE[®] Hybrid Sedan of University Rome 1

Roberto Capata, Max Lora (University of Rome 1 “La Sapienza”, Italy)

Simulation Analysis of Performance of the United Brake System of Bus

Ren He, Yong-tao Wang, Ying-sheng Zhao (Jiangsu University, China)

Steam Expanders for Heat Recovery in Internal Combustion Engines

Rohihta Weerasinghe, Sandra Hounsham, Richard Stobart (University of Sussex, United Kingdom)

The Building Parameters Influence of the Thermal Processes from Inside the Engine

Ion Saracin, Ioan Alexandru Saracin, Aida Patricia Saracin (University of Craiova, Romania)

The Vibrations Transmissibility Studied by Using Dynamic Transient Analysis of a Truck Structure

Cornelia Raicea, Daniel Iozsa, Gheorghe Fratila (POLITEHNICA University of Bucharest, Romania)

Theoretical and Experimental Researches on Circular Coolers Manufactured from Aluminium

Nagi Mihai (University of Politehnic of Timisoara, Romania), Paul Ilies, Vlad Martian (RAAL S.A. Bistrita, Romania)

Theoretical and Experimental Study of a Vehicle Wedge Disc Brake

K.A. Abd-El-Gawwad, K.R.M. Mahmoud (Minia University, Egypt)

Triangulated Evaluation of Attractiveness in Instrument Panels by Using Eye-Tracking, SMB and PSA

Carl Jörqen Normark, Monica Kappfjel, Phillip Tretten, Jan Lundberg, Anita Gärling (Lulea University of Engineering, Sweden)

COMMERCIAL VEHICLES & BUSES (CV)

Application of a Hydraulic-Actuator System to Enhance the Stability of a High Speed Train on a Steep Turn

Manishankar Biswas, Shailendra Kumar Athanerey (Indian Institute of Technology Delhi, India)

Future Harmonize of Functions and Technology of Digital Tachographs Systems in Road Transport

Marcin Rychter (Motor Transport Institute, Poland)

JRET Project Results of Painted Polymer Housing of Automobile Rearview Mirror Manufactured by GID Technology

Gábor Dogossy (SAPU Bt., Hungary)

Service Reliability of City Bus Tires

Gradimir Danon (University of Belgrade, Serbia), Slaven Tica (Public Transport Company Belgrade, Serbia), Srecko D. Zezelj (University of Belgrade, Serbia)

Studies Regarding the Automotive Driver's Comfort Impact on Work Efficiency and Traffic Safety

Dumitru Oprea, Vergil Gangu, Radu Ciuperca, Mihai Nedelcu (INMA, Romania)

The Effect of Wheel Formula on Heavy Truck Longitudinal Vibrations

Zeljko Sakota, Djordje Diligenski, Miroslav Demic (Vinca Institute of Nuclear Sciences, Serbia)

Testing of possibilities to benchmarking driver assistance systems by the example of the dynamic stability system

Maik Jeschor, Wolfgang Löschner (DEKRA Automobil GmbH, Germany)

ADVANCED ENGINEERING TECHNIQUES & TOOLS (AE)

Aspects Concerning Virtual Prototyping

George Gherghina, Mihaela Liana Bogdan, Dragos Laurentiu Popa (ARMIA, Romania)

Automated Model Based Software Allocation in Distributed Automotive Electronic Systems

Stephan Brummund, Benedikt Merz, Andreas Walter, Uwe Kiencke (Universität Karlsruhe, Germany)

Complex Transmissions Designed for Special Vehicles Equipped with Two Sets of Forces

Ioan Todor (Transilvania University of Brasov, Romania), *Gavril Radu, Barna Aczel* (S.C. INAR S.A., Romania)

Correlation of Brake Friction Material Wear between Vehicle & Inertia Dynamometer

Saravanakumar Subbu, G. Arun Kumar (Brakes India Ltd., India)

Development of Individual Type Steer-by-Wire System Using Dual Actuators

Younghoon Cho, Sewook Oh, Seokchan Yoon, Hanjun Kim, Kwangsoo Nam, Woojin Cha (Hyundai MOBIS, Korea)

Diesel Engine Exhaust Gas Numerical Evaluation Comparatively when Supplied with Sunflower Based Oil and Diesel Fuel

Adrian Todorut, Petru Branzas, Cristian Coldea (Technical University of Cluj-Napoca, Romania)

In-Cylinder Flow Field Analysis in a Gasoline Direct Injection Engine – A Parametric Study

T. Kumar Anand, V. Ganesan, J. M. Mallikarjuna (Indian Institute of Technology Madras, India)

Influence of Swirl on Performance and Emissions of Natural Gas Heavy Duty Engines

Michele Gambino, Sabato Iannacone, Luigi De Simio (Istituto Motori CNR, Italy)

Interactive Optimization Methodology for Robust Base Engine Calibration

Alessandro Riegel, Ferdinando De Cristofaro, Iolanda Montalto (ELASIS S.C.p.A., Italy)

Investigation of Metal Powders for Rapid Prototyping Technology

Szabolcs Herczeg, János Takács, Olivér Udvardy (Budapest University of Technology and Economics, Hungary)

Mixture Composition Control “Cylinder to Cylinder” in OTTO Engine

József Nita (Technical University of Radom, Poland)

Modal Parameters Identification and Strategies for Modal Updating

Izzuddin Zaman Bujang, Roslan Abdul Rahman (College University Technology of Tun Hussein Onn, Malaysia)

Multifuel Engine – A Reached Purpose Using the Conversion of a Classical I.C. Engine

Adrian Saachelarie, Lidia Gaiginschi, Iulian Agape (Technical University Iasi, Romania)

On Timing Issues in Network-Based Automotive Communication Media for Safety-Relevant Applications

Philipp Nenninger, Uwe Kiencke (Universität Karlsruhe, Germany)

Pollution Reduction from Spray Combustion of Diesel Fuel Using Air Staging Technique

Kamarul Kamarudin (College University Technology of Tun Hussein Onn, Malaysia), *Farid Nasir Ani, Mohammad Nazri Mohd Jaafar* (Universiti Teknologi Malaysia, Malaysia)

Possibilities for Optimal Fuel-Efficiency Gear Shifting Using Accomplished OBD Technology in Real Time

Ivan Blagojevic, Goran S. Vorotovic (University of Belgrade, Serbia)

Possibility of Simply Determination for 3-Axle Semitrailers Gravity Centre Height on Roller Brake Stand

Lidia Gaiginschi, Iulian C. Agape, Adrian C. Sachelarie (Technical University Iasi, Romania)

Probability Approach to Fatigue Life Evaluation of Trolleybus Structural Element

Miloslav Kepka, Jaroslav Vaclavik, Vladimir Kliman (SKODA VYZKUM s.r.o., Czech Republic)

Reliability Assessment of Automotive Electronic Components under Vibration and Thermal Loading

Hae-jin Lee, Jung-Youn Lee, Jae-Eung Oh (Hanyang University, Korea)

Simulation of Misfire in Tested Vehicles with SI Engine in Light of OBD II System

Marcin Rychter (Motor Transport Institute, Poland)

Solutions, Results Using Shock Absorbers Based on the "VZN" Principle

Adrian Niculescu (Romanian Academy – Institute of Solid Mechanics, Romania)

Some Implications at Considering Influence of Various Factors on the Automotive Engine Brake Power

Alexei Stefanovskiy (Tavriyan State Agritechnical Academy, Ukraine)

The Automotive Motion Simulation in the Different Conditions of Adherence

Victor Otat, Loreta Simniceanu, Liviu Dinca, Mihaela-Liana Bogdan (ARMIA, Romania)

The Determination of Complex Mathematical Model for Automotive Motion

Victor Otat, Loreta Simniceanu, Mihaela-Liana Bogdan, Liviu Dinca (ARMIA, Romania)

The Handling and Stability Performance Analysis of Four-Wheel-Steering Vehicle

Zhang Junyou, Wang Shufeng (Shandong University of Technology, China)

The Use of an Optically Transparent SLA-Model to Visualize the Coolant Flow

Jamalulail Ismail, J. Nawasra, P.J. Bryanston-Cross (Open University, United Kingdom)

The Virtual Prototyping of the Windshield Wiper Systems in Mechatronic Concept

Catalin Alexandru, Claudiu Pozna (University Transilvania of Brasov, Romania)

Using a Simulation Tool for Concerted Choice and Adaptation of Components for Hybrid Vehicles

Lukas Magerl, Bernhard Geringer, Stefan Winter, Peter Hofmann (Vienna University of Technology, Austria)

Vehicle Axle Model Applied to Steering System Inspection

Belen Munoz, Maria Ramirez, Vicente Diaz (Universidad Carlos III de Madrid, Spain)

Wear Influence in Semi-Active Shock Absorber Performance

José Calvo, Vicente Díaz, José L. San Román, Ester Olmeda (Universidad Carlos III de Madrid, Spain)

LEGISLATION (LE)

Basis on the Pedroute of Metro Station Pedestrian Flow Analysis Model

Zhang Junyou, Shufeng Wang, Dongxian Li (Shandong University of Technology, China)

Environmental License in Vehicle Dealers

Luiz Henrique Lopes Vilas, Luiz Cláudio Ribeiro Rodrigues, Joaquim F. Júnior (Centro Universitário de Caratinga, Brazil), *Dawilson Lucato* (Center of Aeronautical, Automotive, Traffic and Transportation Engineering, Brazil)

Environmentally Responsible Transport Operators: Development and Implementation of the Training Programme in Transition Economies

Olivera Medar, Vladimir Momcilovic, Aleksandar Manojlovic (University of Belgrade, Serbia)

Testing of Agricultural Tractors Braking According to the New Requirements of the EU Directives in Order to Assure the Product Quality

Dumitru Oprea, Radu Ciuperca, Mihai Nedelcu (INMA, Romania)

The Study of Lower Beams of Automotive Headlamps

He Yuntang (China Automotive Technology and Research Center, China)

GENERAL INFORMATION

Location

Budapest, the capital of Hungary, is an economic, financial and cultural centre with two million inhabitants. The city which is beautifully situated on both sides of the Danube river has a history dating back over 2000 years. There are ruins from the times of the Roman Empire as well as from the Middle Ages. Its main characteristics reflect the atmosphere of the end of the 19th century when the millennium of the Hungarian State was celebrated. It boasts a number of museums, theatres, concert halls, a lot of restaurants and other amenities. Several baths and thermal waters of various medicinal springs are also at the disposal of visitors. In recent years the UNESCO put several parts of the city on the World Heritage list.

Congress Venue

After a careful comparison of various possibilities, we have selected the Physics Building of the Eötvös Loránd University as venue of EAEC2007 Congress. Besides the classrooms and major lecture halls, a theater hall, a concert hall and an exhibition hall can host meetings. The major lecture halls are equipped with integrated audio-visual facilities including multimedia demonstrations and Internet connection.

ELTE University Congress Center (UCC)

H-1117 Budapest,

Pázmány Péter sétány 1/a

Hungary

Internet: www.ucc.hu

Transportation

Participants arriving at either terminals (Ferihegy 1, 2A or 2B) of Budapest International Airport are advised to use the Airport Minibus shuttle service which takes one to any address in Budapest for a fee of 2300 HUF/person/way (cca 9 EUR). Return ticket costs 3900 HUF (cca 16 EUR). It takes approximately 30–45 minutes from the airport to the city. As an alternative, one can use public bus service (line 200) which connects both terminals with the underground (metro) line 3 (blue line). The blue line of the metro has a stop at “Népliget” bus terminal and “Nyugati” railway station. Price approximately: 500–700 HUF/person (cca 2–3 EUR), depends on number of changes. Taxis to or from the city cost approximately 4000–4500 HUF (cca 16–20 EUR) for a one way trip. Car rentals are available at the airport. Please be informed that the low cost airlines arrive at terminal 1.

Passport, Visa, Invitation Letters

All foreign visitors must have a valid passport. The visa policy of Hungary is liberal. For visits shorter than a month, no visa is required for citizens of most European countries, the United States, Japan and Israel. Most European citizens can visit Hungary with their domestic identity card. Visa is required for visitors from most Asian countries, and most states of NIS. Those who experience any trouble in getting visa to Hungary should not hesitate to contact the congress secretariat immediately. Please note that Hungary is a member state of the EU from the 1 May, 2004. It should be noticed, however, that Schengen visa is not valid in Hungary yet. Please make sure to check any changes in your visa regulation at the consulate. The list of Hungarian missions can be found on the Internet on the web site of the Ministry of Foreign Affairs: www.mfa.gov.hu/kum. If you need an invitation letter to obtain visa, please contact the congress secretariat. This, however, cannot be considered as a commitment on behalf of the organisers to provide any financial support.

Foreign Exchange, Banking Facilities

The Hungarian currency is the Hungarian Forint (HUF). Currency exchange booths are available at the airport terminals, railway stations, travel agencies, banks and various places in the city. Traveller's cheques and convertible currency may be exchanged at these facilities. Major credit cards are usually accepted in most hotels, restaurants and certain shops in the city. Obtaining cash against ATM or credit cards is very easy from the ATM cash machines that can be found at almost each bank office, hotel or on the street.

Climate and Weather

The climate of Budapest is continental. At the end of May a warm, usually an early summer weather is expected with a maximum temperature of 25–28 °C. For current weather forecast please visit www.met.hu

Clothing

Informal for all occasions.

Shopping

Shops in Budapest usually open at 10:00 and close at 18:00 (Monday–Friday), on Saturday they open at 9:00 and close at 13:00. A lot of hypermarkets were built in the last few years. They open at 10:00 and close at 20:00.

Insurance

Participants are strongly advised to make their own insurance arrangements. The organisers cannot accept any liability for personal injuries sustained, or for loss or damage to property belonging to participants and accompanying persons, either during or as a result of the congress.

Important Dates

Submission of the full paper	30 March 2007
Early registration	20 March 2007
Nomination to exhibition	30 April 2007
Issue of the Final Programme	during registration

Registration and Payment

All participants are kindly requested to register in the on-line database (if possible) via the congress website: www.diamond-congress.hu/eaec2007, filling in the personal details and selecting the appropriate registration category.

Deadline for the payment of the **early registration fee is 20 March, 2007**. All participants will receive confirmation on registration and hotel reservation, but you are able to check your own payment and reservation status in your personal records.

Registration fees* for the Congress are as follows:

<i>Registration Categories</i>	<i>Payment received</i>	
	<i>Before 20 March 2007</i>	<i>After 20 March 2007</i>
Registration fee for delegates	550 EUR	600 EUR
Registration fee for speakers and chairmen	400 EUR	450 EUR
Registration fee for students	250 EUR	270 EUR
Registration fee for student speakers	220 EUR	240 EUR
Exhibitor staff registration fee	250 EUR	250 EUR
Accompanying persons fee	170 EUR	200 EUR

* Registration fees include 20% VAT.

Delegate and student registration fees include:

• Participation in scientific sessions • Admission to the exhibition • Printed material of the Congress • Congress bag • Welcome reception • Coffee breaks • Lunches • Banquet

Registered accompanying persons are entitled to receive:

• Welcome reception • Budapest sightseeing tour with visiting the Synagogue (half day) • Gödöllő tour (half day) • Banquet

Cancellation Policy

Cancellations are accepted only in writing. In case of cancellation of registration and hotel reservation received till 30 April 2007, the refund is 100%. From 1 May 2007 registration fees and hotel deposit is not refundable.

Accommodation

Room prices are per room per night basis in EUR. Breakfast and all local taxes are included.

	<i>Hotel</i>	<i>single room</i>	<i>double room</i>
	(renovated)	180 EUR/night	200 EUR/night
Hotel Gellért****	(with shower)	70 EUR/night	146 EUR/night
	(with bath)	95 EUR/night	146 EUR/night
Hotel Zara Boutique****		124 EUR/night	150 EUR/night
Hotel Novotel Centrum****		120 EUR/night	140 EUR/night
Park Hotel Flamenco****		105 EUR/night	116 EUR/night
Hotel Ibis Emke***		80 EUR/night	88 EUR/night
Hotel Mercure Duna***		80 EUR/night	88 EUR/night
Hotel Ventura***		54 EUR/night	68 EUR/night

Exhibition

As an integral part of EAEC2007 Congress, a commercial indoor and outdoor exhibition will be organised for the promotion of services, technology, products in the field of automotive engineering. Companies manufacturing personal cars, coaches, heavy vehicles and suppliers are also welcome, as well as table top exhibitors. Exhibitors showing prototypes, new development results, methods and devices – simulation methods, measurement and test devices, etc. – are waited with special interest. **Detailed application form is available from the website.**

The exhibition will take place at the corridors and Aula of the University Congress Centre, next to the coffee break area and session rooms. Tea and coffee will be served within the exhibition area, thus ensuring maximum contact between exhibitors and delegates. Outdoor exhibition will take place at the parking lot of the UCC at the main entrance.

Booth Exhibit Space: You are invited to display your services, technology, products at following display spaces with back and side draping, 2 chairs and wastepaper basket.

<i>Indoor Exhibition (booth size)</i>		<i>Outdoor Exhibition</i>	
4 square meters	1200 EUR	Cars, mini buses	1200 EUR
8 square meters	2000 EUR	Medium trucks, buses and coaches	1600 EUR
16 square meters	3200 EUR	Heavy vehicles, coachers, trucks	2000 EUR

All prices regarding exhibition include 20% VAT.

Social Events

WELCOME RECEPTION – Wednesday, 30 May 19:00

The Welcome reception will be organised in the ELTE University Congress Center (UCC), the venue of the Congress and is included in the registration fee of all participants, accompanying persons and exhibitors.

BANQUET – Thursday, 31 May 19:00

The banquet will be held on the board of Európa boat cruising on the river Danube from where you will be able to admire the evening lights of the capital city. Complete dinner will be provided. This programme is included in all registration categories.

Accompanying Persons' Programmes

(Accompanying registration fee includes these 2 programmes, the welcome reception and the banquet)

BUDAPEST SIGHTSEEING WITH VISITING THE SYNAGOGUE

– Wednesday, 30 May 9:00

Departure is from the Congress venue at 9:00. Planned arrival at the same place is at 13:00. The first programme will be a 2 hours tour in the Pest side of the city by bus. Among several famous sights, the following places will be visited: Heroes' Square, Basilica. The guided tour in the Synagogue takes 45–50 minutes. After the visit, the programme continues with 1,5 hrs guided sightseeing tour in Buda side: Buda Castle, Matthias Church, Fisherman's Bastion, Gellért Hill, Citadel, etc.

GÖDÖLLŐ TOUR – Thursday, 31 May 9:00

Departure is from the Congress venue at 9:00. Planned arrival at the same place is at 13:00. Participants of the excursion will visit the former summer residence of Queen Elisabeth. The town's greatest treasure and draw for tourists is its 250 years old Royal Palace. Visitors can see the living quarters of Emperor Franz Josef and Empress Elisabeth (Sissy).

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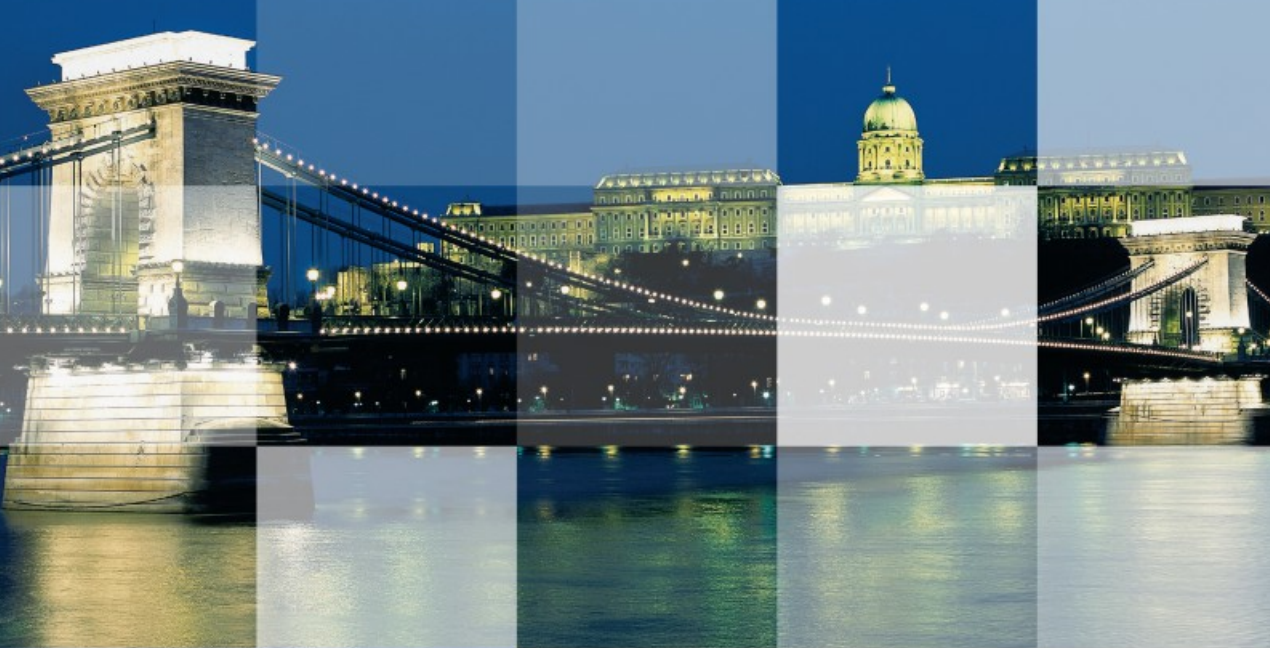


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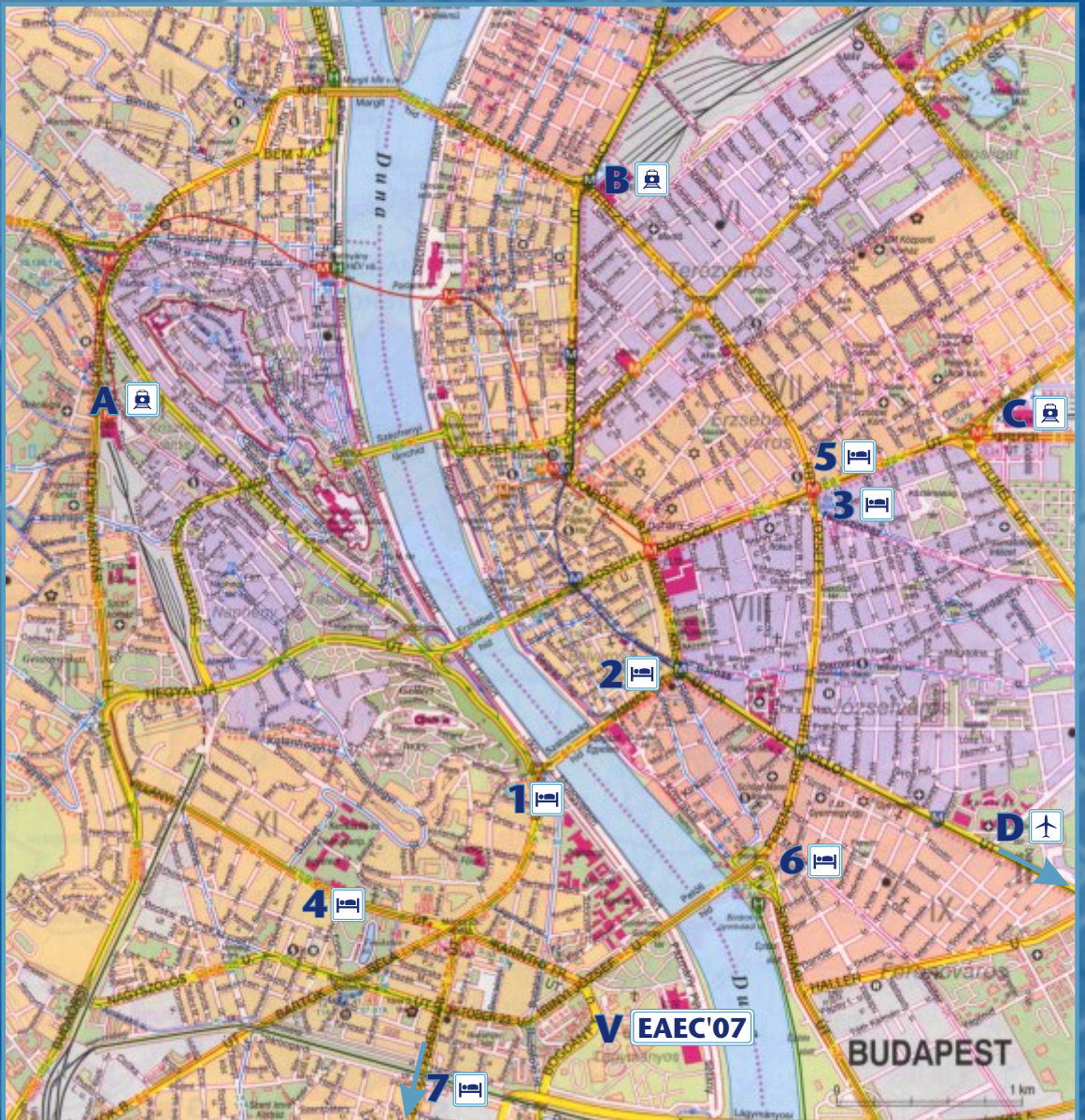
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AND TRADE DEVELOPMENT AGENCY

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H-1061 Budapest
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Legend

1 Hotel Gellért****

2 Hotel Zara Boutique****

3 Hotel Novotel Centrum****

4 Congress Park Hotel Flamenco****

5 Hotel Ibis Emke***

6 Hotel Mercure Duna***

7 Hotel Ventura***

V Congress Venue

A "Déli" Railway Station

B "Nyugati" Railway Station

C "Keleti" Railway Station

D Airport