



Medjunarodni naučno-stručni skup sa izložbom
XXIII NAUKA I MOTORNA VOZILA 2011
JUMV International Automotive Conference with Exhibition

19 - 21 April, Belgrade, Serbia



PRELIMINARY PROGRAMME



Automotive Engineering for Improved Safety



Welcome to Belgrade

Maintaining the tradition, JUMV is organizing the 23rd International Automotive Conference **SCIENCE AND MOTOR VEHICLES** in Belgrade, on 19 to 21 April 2011 under the motto **AUTOMOTIVE ENGINEERING FOR IMPROVED SAFETY**.

The Automotive Conference "Science and Motor Vehicles" was established in 1967 and has since become an important international forum of Automotive Engineers in Serbia, Balkans and Central-Eastern Europe. It promotes the exchange of engineering and scientific knowledge and experience at the highest quality level between experts from different countries.

The 2011 conference will demonstrate continuity, tradition, and quality of 22 previously held conferences. It is an opportunity for participants to assess the development, applied automotive engineering expert scientific and engineering results with particular emphasis to improved safety.

This three day Conference consists of two parts: International part to be held in English language in the Serbian Academy of Science and Arts on Tuesday 19 April 2011 and Wednesday 20 April 2011, and the National part to be held in Serbian Language on Thursday, 21 April 2011 at the Faculty of Mechanical Engineering. International part of the Conference will consist of dedicated special & technical sessions in English Language, to be organized and / or chaired by highly ranked international moderators in presentation panels.

The conference is aimed at covering the following aspects of automotive engineering:

- AutoSim 2011 – Special Session on Simulation in Automotive Engineering - (11)
- Safety (Vehicle & Traffic Safety, Vehicle Safety Performance, Road Accident Reconstruction and Analyses, Vehicle Safety Regulations) - (18)
- 5E - Engines, Emission, Ecology, Environment & Energy - (17)
- Advanced Engineering Technologies & Tools - (15)
- Automotive Logistics, including Vehicle Maintenance & After-Sales Support - (6)
- Advanced Propulsion & Powertrain - (5)
- Special National Conference (in Serbian, Croatian and/or Bosnian Language) – (10)

Organization and Patronage Information

23rd JUMV International Automotive Conference SCIENCE AND MOTOR VEHICLES 2011 is organized by JUMV – The Society of Automotive Engineers in Serbia, and co-organized both by the Faculty of Mechanical Engineering of the University of Belgrade, and its Innovation Center. Patronage to the Conference was granted by:

FISITA - International Federation of Automotive Engineers Societies
 EAEC - European Automotive Engineers Cooperation
 SANU - Serbian Academy of Science and Art
 EVU - European Association for Accident Reconstruction and Analyses
 AINS - Academy of Engineering Sciences of Serbia (to be confirmed)
 Ministry of Science and Technology of Serbia (to be confirmed).

International Programme Committee

Prof. Dr. Jovan Todorović, (ret.) University of Belgrade & JUMV, Serbia
 Prof. Dr.-Ing. habil. Egon-Christian von Glasner, EVU, Germany
 Prof. Dr.-Ing. Sigmar Micke, Germany
 Prof. Gabriele Virzi Mariotti, University of Palermo, Italy
 Prof. Gianfranco Rizzo, University of Palermo, Italy
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 Dr. Stojan Čučuz, Visteon, Germany
 Prof. Dr. Dušan Gruden, Germany
 Mr. Alexander Berg, Dekra Automobile GmbH, Germany
 Dr. Branislav Basara, AVL List GmbH, Austria
 Dr. Marko Tirović, Reader, Cranfield University, UK
 Dr. Matyaş Matolcsy, GTE, Hungary
 Prof. Dr. Cedomir Duboka, University of Belgrade & JUMV, Serbia

Who should attend?

Automotive engineers and scientists, Road traffic safety engineers, Accident reconstruction experts, Managers from automotive and supply industry, Academia associates, Governmental officers, Students and young engineers in automotive engineering and other related engineering sciences are invited to present results of their research, development and engineering work, and to take part at the Conference.

This Conference provides unique opportunities for participants to establish new professional and personal contacts, to exchange with other participants the results of their engineering activities, experience and expertise, and to learn more about automotive and supply industry in Serbia in order to open new business opportunities for their companies. Serbia is nowadays a country of challenges and opportunities for all those willing to extend their business to this part of Europe.

This Conference is also an opportunity for foreign participants to learn more about Serbia, and to enjoy the traditional hospitality of this part of Europe.

Schedule of Sessions

Monday, 18 April 2011 - Registration of international attendees with Welcome Drink

To be held on **Monday, 18 April 2011** starting at **19h00** in the building of the **SANU – Serbian Academy of Science and Arts**, Kneza Mihaila 35.

International Conference – Tuesday, 19 April to Thursday, 21 April 2011

The Conference is to be held on **Tuesday, 19 April 2011** in **SANU – Serbian Academy of Science and Arts**, Kneza Mihaila 35, while on **Wednesday, 20 April 2011** and **Thursday, 21 April 2011** it will be held at the **Faculty of Mechanical Engineering**, Kraljice Marije 16.

The Conference Schedule is as follows:

Date, Time & Place	Tuesday	Wednesday	Thursday
	19 April 2011	20 April 2011	21 April 2011
	SANU - Serbian Academy of Science & Art	Faculty of Mechanical Engineering	
09h00	AutoSim 2011 Simulation in Automotive Engineering	5E Engines, Emissions, Ecology, Energy, Environment	AETT - Advanced Engineering Technologies & Tools
12h00			Commercial Presentation
13h30		Lunch	
14h30	Safety - 1	Safety - 2 APAL - Advanced Propulsion & Automotive Logistics	SWBC – Special West Balkans Conference
18h00	(1st part)		Conference Close
20h00	Conference Dinner		

Language

English is the official Conference language
 However, Special West Balkans Conference will be held in Serbian, Croatian and/or Bosnian language. No simultaneous interpretation will be provided.

Important Dates

April 18, 2011 @ 19h00 Registration – Serbian Academy of Science and Arts (SANU)
April 18, 2011 @ 19h00 Welcome Drink - SANU
April 19, 2011 @ 09h00 International Conference beginning – SANU
April 19, 2011 @ 20h00 Conference Dinner
April 21, 2011 @ 18h00 Conference Close – Faculty of Mechanical Engrg.

Visa & Letters of Invitation

Majority of participants will be allowed to enter Republic of Serbia without visa. However, in order to avoid any misunderstandings, participants are kindly requested to visit <http://www.mfa.gov.rs/Consularaffairs.htm> for an updated information concerning the visa regime for those wishing to enter Serbia or to contact the nearest Consular Offices or Diplomatic Missions of the Republic of Serbia in their country. Upon request, JUMV will provide personal invitation letter to any participants after the registration fee was paid.

Registration

Registration fee will be € 425.00 for authors and € 400.00 for all other attendees. Walk-ins to the conference will not be accepted. Early registration discount will apply for registration fee payment till the 15 January 2011. Registration includes admission to all Sessions, Conference Dinner, Welcome Drink, refreshment at Coffee Breaks and catered luncheons during the Conference.
 (Note: Final Manuscript Conference Editing Fee (or Author's Registration Fee) also includes handling fee for paper offer and final manuscript processing)
Note: VAT included, Local Bank handling cost not included.

Upon request, special registration fee rates will be offered to students, young engineers, JUMV trusted partners, etc.

To register, please download and fill-in the Registration form from www.nmv2011.jumv.rs or fill-in the enclosed Registration Form and mail/fax it to JUMV.

Please make Money Transfer payment in EUR in line with the following instructions

SWIFT field No.:	Field description
59 :	Beneficiary : INOVACIONI CENTAR MASINSKOG FAKULTETA IBAN : RS35285002405557000171
57a :	Beneficiary Bank : //BL50070010 VOLKSBANK AD BEOGRAD S.W.I.F.T. Code : VBOERSBG
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Please mail the copy of payment document (SWIFT) to +381-11-3228-079. Payment by Cheque or Western Union Money Transfer is also appreciated.

Conference Venues

23rd JUMV International Automotive Conference 2011 is hosted by Belgrade, the Capital of Serbia. The Conference venues for the first Conference day (Tuesday, 19.April 2011) will be SANU – Serbian Academy of Science and Art, SRB-11000 Belgrade, Kneza Mihaila 35. The Conference venues for the remaining part of the Conference will be Faculty of Mechanical Engineering (Mašinski fakultet), SRB-11120 Belgrade, Kraljice Marije 16.

Advertising, Promotional & Sponsorship Opportunities

All authors, the companies from where they come and other companies are invited to benefit the Advertising, Promotional & Sponsorship Opportunities of this Conference, which are tailored to fit their individual needs.

For more information please visit www.nmv2011.jumv.rs or contact the JUMV by Phone, Fax or E-mail.

Accommodation

Accommodation is warmly recommended in the hotels within the walking distance from the Serbian Academy of Science and Arts, or the Faculty of Mechanical Engineering, like **Palace Hotel Beograd**, 4 star, 23 Topličin venac 23, www.palacehotel.rs, email office@palacehotel.rs
Balkan Hotel Beograd, 4 star, Prizrenska 2, www.balkanhotel.net, recepcija@balkanhotel.net
Park Hotel Beograd, 3 star, Njegoševa 2, <http://www.hotelparkbeograd.rs>, reception@hotelparkbeograd.rs
Royal Hotel, 3 star, Kralja Petra 56 , www.hotelroyal.rs, email toplice@net.rs, and
Kasina Hotel, 3 star, Terazije 35, <http://www.hotels.rs/>

For information concerning accommodation you may also contact the JUMV Tour operator TOMAS Tours, SRB-11120 Belgrade, Miročka 6

Contact person: Mr. Toma Stojić, General Manager
 Phone: +381 11 3235-653, 3030-305, Fax: +381 11 3238-431
 E-mail: toma.s@eunet.rs, www.tomas.rs

Office Support

FRIMEKS

Accredited Laboratory for automotive braking systems and friction mechanisms

LAFI

Laboratory for Automotive Forensic Engineering

Faculty of Mechanical Engineering, SRB-11120 Belgrade 35, POB 34. K.Marije 16, Serbia

Conference Contact Information

JUMV c/o Faculty of Mechanical Engineering * SRB-11120 Belgrade 35, POB 34. K.Marije 16, Serbia
 Phone: (+381-11) 3370-358, 3302-288, 3302-390, 3340-762 * Fax: (+381-11) 3370-652, 3370-364, 3228-079, or
 E-mail: cduboka@jumv.rs, cduboka@eunet.rs, cduboka@mas.bq.ac.rs * <http://www.nmv2011.jumv.rs>

AutoSim 2011

Special Session on SIMULATION IN AUTOMOTIVE TECHNOLOGY

Organized by Doz. Dr. Branislav Basara, AVL List GmbH, Advanced Simulation Technologies, Graz, AUT

Key-Note Presentation

BLENDING THE RANS AND LES CONCEPTS FOR COMPUTING INDUSTRIAL AND ENVIRONMENTAL FLOWS: A PERSPECTIVE.

K.Hanjalic, *Delft University of Technology, HOL / Sapienza University of Rome, ITA*

Panel Presentations

AERODYNAMICS AND MIXING CHARACTERISTICS OF A MODEL COMBUSTOR: A HYBRID LES/RANS STUDY

S. Jakirlic, *Technische Universität Darmstadt, Chair of Fluid Mechanics and Aerodynamics, Darmstadt, GER*

TRANSIENTS IN TURBULENT FLOWS OVER COMPLEX HETEROGENEOUS URBAN AREAS AT LABORATORY SCALES

S. Kenjeres, *Delft University of Technology, HOL*

NUMERICAL STUDY OF THE UNDERHOOD FLOW OF A TRUCK

S. Krajnovic, F. Ekeroth, A. Martinsson, *Chalmers University, Department of Applied Mechanics, SWE.*

ADVANCED DESIGN ENVIRONMENT FOR SCREW MACHINES IN AUTOMOTIVE INDUSTRY

E. Mujic, A. Kovacevic, N. Stosic, I. K Smith, *Centre for Positive Displacement Compressor Technology City University, London, UK*

SIMULATION OF NOX AND SOOT FORMATIONS IN ENGINE

F.S. Frolov, S. M. Frolov, V.S. Ivanov, S.N. Medvedev, P.A. Vlasov, B. Basara, M. Suffa, *Semenov Institute of Chemical Physics, Moscow, RUS/AVL List GmbH, Advanced Simulation Technologies, Graz, AUT*

EFFECT OF ENERGETIC POWDER ADDITIVES ON FUEL DROP AUTOIGNITION AT CONDITIONS RELEVANT TO DIESEL ENGINE

F.S. Frolov, S. M. Frolov, *Semenov Institute of Chemical Physics, Moscow, RUS*

OVERVIEW OF MULTIPHASE CFD APPLICATIONS IN AUTOMOTIVE INDUSTRY

D. Greif, V. Srinivasan, Wang, Deming, *AVL List GmbH, Advanced Simulation Technologies, Maribor, SLO /AVL Powertrain Engineering Inc, Plymouth, Michigan, USA*

PANS vs. RANS FOR COMPUTATIONS OF THE FLOW THROUGH INTAKE ENGINE PORTS

B. Basara, *AVL List GmbH, Advanced Simulation Technologies, Graz, AUT*

SELECTION OF OPTIMAL VEHICLE DESIGN ACCORDING TO THE SPECIFIC CUSTOMER REQUIREMENTS

Z. Sakota, Z. Zivanovic, Dj. Dilligenski, Z. Jovanovic, *INN Vinca Belgrade, SRB*

DEVELOPMENT OF NEXT GENERATION VIBRATION FATIGUE SOFTWARE AND CATIA INTEGRATION FOR AUTOMOTIVE INDUSTRY

J. Slavič, *University of Ljubljana, SLO, T. Opara, CIMOS d.d., SLO, R. Banov, M. Dogan, CadCam Group Croatia, M. Česnik, M. Boltežar, University of Ljubljana, SLO.*

SAFETY**Invited papers****DRIVER ASSISTANCE SYSTEMS - STATUS 2011**

L. Palkovics, *Knorr Bremse AG, HUN*, E.-C. von Glasner, *EVU & Daimler AG, ret., GER*

THE WRONG CHOICE OF TYRES INFLUENCING THE STABILITY OF VEHICLES

E.-C. von Glasner, *EVU & Daimler AG, ret., J. Ahlgrimm, DEKRA, GER*

EVACUATION OF BUSES – EMERGENCY EXITS

M. Matolcsy, *Scientific Society of Mechanical Engineers, HUN*

VEHICLE SAFETY PERFORMANCE INDICATORS & INDEXES

Č. Duboka, *University of Belgrade, Faculty of Mechanical Engineering, SRB*

Panel Papers**INTEGRATION OF ACTIVE STEERING LOGIC INTO A CLASSIC COMMERCIAL VEHICLE ESP**

Z. Hankovszki, R. Kovács, L. Palkovics, *Department of Automobiles, Budapest University of Technology and Economics, HUN*

CHALLENGES AND POSSIBILITIES FOR ENHANCED VEHICLE FLOW AND SAFETY ON URBAN TRAFFIC

A. Kostic, M. Kosevski, *Faculty of Mechanical Engineering Skopje, MKD*

CRUISE CONTROL STRATEGIES OF ELECTRIC BICYCLE

B. Pornporm, *School of Mechanical Engineering, Suranaree University of Technology, Meaung, Nakorn Ratchasima, THA*

DETERMINATION OF THE SEATING POSITION IN VEHICLE AND THE SAFETY BELT USAGE PRIOR TO ACCIDENT –CASE STUDY

I. Bodolo, *Expert witness organization "Vojvodina", SRB*

ACTIVE SAFETY AT THE INTERSECTION USING INTELLIGENT ROAD INFRASTRUCTURE

M. Djekić, M. Derikonjić, R. Eper, D. Matković, *"Selma" Ltd., V. Jovanović, JP "Subotica-trans", Subotica, SRB*

COMPARISON BETWEEN TRAFFIC STATISTICS OF THE CZECH REPUBLIC, LEBANON AND JAPAN

N. Khatib, V. Panáček, A. Vémola, *Institute of Forensic Engineering, Brno University of Technology, Brno, CZE*

MULTIBODY MODELLING OF CHARACTERISTIC PEDESTRIAN POSITIONS FOR TRAFFIC ACCIDENTS RECONSTRUCTION

Z. Papić, V. Bogdanović, N. Ruškić, *Faculty of Technical Sciences, Novi Sad, SRB*

QUANTITY ESTIMATION OF ENERGY RECOVERY DURING BRAKING MODES OF VEHICLES ON URBAN DRIVE CYCLES AND ITS IMPACT ON THEIR ELECTRIC PROPULSION SYSTEM

V. Jivkov, V. Draganov, N. Nikolov, *Theory of Mechanisms and Machines Dept., Technical University of Sofia, BUG*

APPLICATION OF COUPLED FE- AND MULTI-BODY SIMULATIONS IN THE AREA OF PEDESTRIAN AND OCCUPANT SAFETY

E. Ertugus, *Institut für Kraftfahrzeuge RWTH Aachen University, GER*, J. Obradovic, *Politecnico di Torino, Department of Mechanics, ITA*, L. Eckstein, *Institut für Kraftfahrzeuge RWTH Aachen University, GER*, G. Belingardi, *Politecnico di Torino, Department of Mechanics, ITA*

IMPROVEMENT OF LATERAL VEHICLE CRASHWORTHINESS BY INTRODUCING INNOVATIVE STRUCTURAL SOLUTIONS

J. Obradovic, *Politecnico di Torino, Department of Mechanics, ITA*, E. Ertugus, *Institut für Kraftfahrzeuge RWTH Aachen University, GER*, G. Belingardi, *Politecnico di Torino, Department of Mechanics, ITA*, L. Eckstein, *Institut für Kraftfahrzeuge RWTH Aachen University, GER*,

SIMULATION STUDY OF THE SUITABILITY OF DIFFERENT TYPES OF REFERENCE MODELS FOR USE IN VEHICLE STABILITY CONTROL SYSTEMS

I. Gjurkov, *Faculty of Mechanical Engineering, University of "Sv. Kiril i Metodij", Skopje, MKD*

IMPLEMENTATION OF QUALITY SYSTEM OF BRAKE ROLLER DYNAMOMETER MEASUREMENTS

M. Haataja, *University of Oulu, Department of Mechanical Engineering/Automotive Engineering, FIN*

NEW METHOD TO COMPARE THE TIRES' LATERAL CAPABILITIES ON ROAD TESTS

V. Sesztakov, G. Meleg, *Automotive Department, Budapest University of Technology and Economics, HUN*

THE ROLE OF HEAVY VEHICLES IN ROAD SAFETY: TECHNICAL IMPROVEMENTS AND TRAINING OF PROFESSIONAL DRIVERS IN EU ACTIVITIES

S. Amoroso, L. Caruso, *Dipartimento di Ingegneria dei Trasporti, Università degli Studi di Palermo, ITA*

INTRODUCTION OF DIGIAL TACHOGRAF SYSTEM IN EU-AETR AND NON EU-AETR COUNTRIES

M. Rychter, *Motor Transport Institute, Diagnostic and Servicing Process Department, Warsaw, POL*

PRELIMINARY DESIGN OF A MAGNETORHEOLOGICAL BRAKE FOR AUTOMOTIVE USE

G. V. Marannano, G. Virzi Mariotti G., DIMA - Università degli studi di Palermo ITA, Č. Duboka, *Automotive Department, Faculty of Mechanical Engineering, University of Belgrade SRB.*

VIDEO SURVEILLANCE SYSTEM AT THE VEHICLE TECHNICAL INSPECTION STATIONS IN FEDERATION OF BOSNIA AND HERZEGOVINA AND BRČKO DISTRIKT

F. Klisura, IPI – Institute for Engineering in Economy, Zenica, Ž. Matoc, *Federal Ministry for Transportation and Communications, Mostar, S. Jašarević, Faculty of Mechanical Engineering, Zenica, BiH*

HAVE WE REDUCED THE RISK ON CELL PHONES USAGE: THE EFFECTS OF THE IMPLEMENTATION OF NEW ROAD TRAFFIC SAFETY LAW

S. Cicevic, M. Cubranic-Dobrodolac, *Faculty of transport and traffic engineering, University of Belgrade, SRB*

ADVANCED PROPULSION & POWERTRAIN

ENERGY LEVELS DETERMINATION OF AN ELECTRIC HYBRID PROPULSION SYSTEM WITH KINETIC ENERGY STORAGE FOR SMALL URBAN VEHICLES

V. Jivkov, V. Draganov, N. Nikolov, *Theory of Mechanisms and Machines Dept., Technical University of Sofia, BUG*

DESIGN AND APPLICATION OF GEAR WEAR ACCELERATED TESTING DEVICE WITH REVERSE MOTION

M. Ognjanović, *University of Belgrade, Fac. of Mech. Engrg., A. Pavlović, S.Čirić-Kostić, University of Kragujevac, Fac. of Mech. Engrg., SRB, C. Fragassa, University of Bologna, Fac. of Mech. Engrg., ITA*

APPROACHES TO ASSESS THE ENERGETIC EFFICIENCY OF NEW POWERTRAIN ARCHITECTURES: DESCRIPTIONS AND EXPLOITATIONS

H. Dupont, *Continental Automotive France SAS, Toulouse, FRA*

DYNAMICS OF A BELT-DRIVE SYSTEM INCLUDING A DETAILED BELT-PULLEY CONTACT DESCRIPTION AND DAMPING

G. Čepon, M. Boltežar, *University of Ljubljana, Faculty of mechanical engineering, Laboratory for dynamics of machines and structures, SLO*

IMPACT OF CLEARANCE ON THE POWER TRANSMISSION LOAD IN THE PROCESS OF MOVEMENT OF MASSES THROUGH THE CLEARANCE

M. Damjanović, R. Durković, *Faculty of Mechanical Engineering, Podgorica, MNE*

AUTOMOTIVE LOGISTICS

COMPARISON OF VEHICLE MAINTENANCE COST AMONG DIFFERENT VEHICLE TYPES

K. Jakimovska, I. Gjurkov, *Faculty of Mechanical Engineering, Ss."Cyril and Methodius" University in Skopje, MK*

GLOBAL APPROACH OF CAR RECYCLING UPON LIFE CYCLE EXPIRATION

M. Jelić, P. Petrović, *IKS Institute, Belgrade, SRB*

TOTAL PRODUCTIVE MAINTENANCE AND OVERALL VEHICLE EFFECTIVENESS

A. Manojlović, O. Medar, V. Papić, *University of Belgrade – Faculty of Transport and Traffic Engineering, Belgrade, SRB*

RENEWAL OF SERBIAN BUS FLEET WITH THE OBJECTIVE OF POLLUTANTS' EMISSION REDUCTION

J. Trifunović, A. Manojlović, V. Momčilović, V. Papić, *University of Belgrade – Faculty of Transport and Traffic Engineering, Belgrade, SRB*

A TOOL TO ESTIMATE THE WARRANTY LEVEL ACCORDING TO DESIGN CHANGES

P. Alcalde, *CITEAN, Pamplona, ESP*

STUDY OF THE TECHNOLOGICAL INNOVATION IN THE PROCESS OF DESIGN AND DEVELOPMENT OF PRODUCT: APPLICATION TO THE SMES OF AUTOPARTS - COMPARATIVE CASE BETWEEN ESTADO DE MEXICO AND CATALONIA

A. S. León, *Barcelona, ESP*

5E - Engines, Emissions, Ecology, Environment, Energy**TWENTY YEARS OF RESEARCH ON HYDROGEN FUELLED IC ENGINES AT GHENT UNIVERSITY**S. Verhelst, J. Demuynck, J. Vancoillie, R. Sierens, *Laboratory of Transport Technology, Ghent University, BEG***SIMPLIFIED PROBABILISTIC POWERTRAIN SIZING FOR HYBRID VEHICLES**M. Milačić, *Research & Advanced Engineering - Ford Motor Company, USA***CONCEPTUAL DESIGN OF HIGH PERFORMANCE, LOW CO₂ EMISSION HYBRID SPORTS VEHICLE USING Flybrid® KERS**M. Tirovic, *Cranfield University, D Cross, Flybrid, UK***DIESEL PARTICULATE FILTER REGENERATION STRATEGIES: THE STUDY OF HYDROGEN ADDITION**K. Theinnoi, S.S. Gill, A. Tsolakis, *University of Birmingham, A.P.E York, Johnson Matthey Technology Centre, Reading, A. Megaritis, Brunel University, R. Harrison, University of Birmingham, UK***TECHNOLOGIES TO MEET EVER MORE DEMANDING POWERTRAIN COOLING REQUIREMENTS**S. Čučuz, *Visteon Deutschland GmbH, Climate Control Systems, Kerpen, GER***THE INFLUENCE OF THE INJECTION TIMING ON THE COMBUSTION CHARACTERISTICS AND EMISSION BEHAVIOUR IN A GASOLINE HOMOGENEOUS CHARGE COMPRESSION IGNITION (HCCI) ENGINE**R. Cosgarea, M. Aleonte, C. Cofaru, *Transylvania University of Brasov, Automotive Dept., ROM, C. Dahnz, A. Velji, U. Spicher, Karlsruher Institut für Technologie, Institut für Kolbenmaschinen, GER***EXPERIMENTAL INVESTIGATIONS OF ALCOHOL BLENDS ON COMBUSTION AND EMISSIONS IN A TWO STROKE SI ENGINE**M. Aleonte, R. Cosgarea, C. Cofaru, *Transylvania University of Brasov, ROM, K. BECK, A. VELJI, U. SPICHER, Karlsruher Institut für Technologie, Institut für Kolbenmaschinen, GER***EXPERIMENTAL STUDY OF EMISSION REDUCTION AND SPRAY CHARACTERISTICS FOR DIESEL COMBUSTION USING A PIEZO INJECTOR GROUP-HOLE NOZZLE**K. Sung, *Gangwon Provincial College, KOR***RESEARCH OF THE ENGINE'S SPEED INFLUENCE ON THE INTAKE PROCESS OF A NATURALLY ASPIRATED ENGINE**G. Sandu, C. Cofaru, L. Jelenschi, S. Sacareanu, *Transilvania University of Brasov, Automotive Department, ROM***FUZZY LOGIC AND NEURAL NETWORK BASED INDUCTION CONTROL IN A DIESEL ENGINE**G. B. Kumar, M.S. Ramaiah School of Advanced Studies, R. Vanathi, *Honeywell Technologies, Bangalore, IND***THE NECESSITY FOR ROTATIONAL MOVEMENT OF VALVE AND TAPPET IN INTERNAL COMBUSTION ENGINES**L. Jelenschi, C. Cofaru, G. Sandu, I. S. Radu, *Transilvania University of Brasov, ROM***DIESEL – WATER EMULSION IN DIESEL ENGINES**M. Gheorghe, D. Scarpete, A.-M. Hotoleanu, *University "Dunarea de Jos" of Galati, ROM***A HARD DECISION FOR HEV MANUFACTURERS: GASOLINE HYBRID VEHICLE OR DIESEL HYBRID VEHICLE**V. Croitorescu, E. Negrus, M. Oprean, C. Andreescu, *Politehnica University of Bucharest, Automotive Engineering Department, ROM***DEVELOPMENT OF STRATIFIED FRACTAL COMBUSTION MODEL**M. Sjerić, D. Kozarac, G. Šagi, *Faculty of Mechanical Engineering and Naval Architecture, Chair of IC Engines and Motor Vehicles, Zagreb, CRO***NUMERICAL SIMULATION OF POROUS MEDIUM INTERNAL COMBUSTION ENGINE**A. Mohammadi, M. Basharhagh, A. Jazayeri, *K.N.Toosi University of technology, IRN***IMPROVING THE PROCEDURE FOR THE IMPACT TESTING OF COMPOSITE AIR-TAKE MANIFOLDS**C. Fragassa, *DIEM, University of Bologna, ITA, A. Pavlović, Z. Šoškić, Faculty of Mechanical Engineering Kraljevo, SRB***THE EFFECT OF BIODIESEL AND BLENDED DIESEL FUEL ON EXHAUST EMISSIONS**R. Gligorijević, J. Jevtić, Đ. Borak, *IMR-Institute, Belgrade, SRB***METHODS FOR MEASURING AND VERIFICATION CONCENTRATION OF ULTRA FINE PARTICLES EMISSION FROM DIESEL ENGINE**V. Petrović, *IMR Institute, Belgrade, SRB*

ADVANCED ENGINEERING TECHNIQUES & TOOLS

HYBRID STEERING OF WHEELED VEHICLES

M. A. Awan, D.J. Purdy, A. Hameed, *Cranfield University, Shrivenham, UK*

DYNAMICS OF A SPATIALLY CURVED CABLE AND CASING WITH A FOCUS ON THEIR INTERACTION

M. Otrin, M. Boltežar, *University of Ljubljana, Faculty of mechanical engineering, Laboratory for dynamics of machines and structures, SLO*

OPTICAL MEASURING TECHNIQUES IN RECONSTRUCTION AND MODIFICATION OF VEHICLES

R. Tomić, Z. Lulić, P. Ilinčić, *Faculty of Mechanical Engineering and Naval Architecture, Chair of IC Engines and Motor Vehicles, Zagreb, CRO*

DYNAMIC BEHAVIOUR OF A CAR EQUIPPED WITH MAGNETORHEOLOGICAL DAMPERS

G. Barbaraci, G. Virzi Mariotti, *Dipartimento di Ingegneria Industriale Università di Palermo ITA*

ASPECTS REGARDING THE THEORETICAL STUDY OF HYBRID ELECTRIC VEHICLE DYNAMICS

E.-D. Iliina, F.-C. Oloeriu, M. Bodonea, G. Bivol, I. Copae, *Military Technical Academy, Bucharest, ROM*

STUDYING THE VEHICLE'S DYNAMICS USING ARTIFICIAL INTELLIGENCE ALGORITHMS

F.-C. Oloeriu, E.-D. Iliina, M. Bodonea, G. Bivol, I. Copae, *Military Technical Academy, Bucharest, ROM*

COMPARATIVE ANALYSIS ON MATHEMATICAL MODELS DESCRIBING VIBRATIONS OF ROAD VEHICLES WITH DIFFERENT TYPES SUSPENSIONS

L. Kunchev, N. Pavlov, *Technical University, Sofia, BUG*

OPTIMIZING SEMI-ACTIVE SUSPENSION SYSTEM OF 7 DOF CAR MODEL BY USING LQR CONTROLLER

R. Miralami, K. N. Toosi *University of Technology and Islamic Azad University, Yazd, IRN*

COMPENSATE OF ATTRITION AND RELEASE IN CAR ELECTRIC STEERING SYSTEM (EPS)

M. Morteza, K. T. Shekarabi, *Automotive Company of Saipa, Tehran, M. R. Ahadiat, Islamic Azad University, Yazd, IRN*

RESEARCH ON SUSTAINABILITY AND DESIGNING OF PROTECTIVE STRUCTURES OF TRANSPORT VEHICLE FOR SMALL FARMS

S. Bozhkov, E. Badrikov, V. Yankova, K. Stefanov, *Research Institute for Land Reclamation and Agricultural Mechanization, Sofia, BUG*

MECHATRONICS APPLICATIONS IN HEAVY DUTY AGRICULTURAL TRACTOR AXLES

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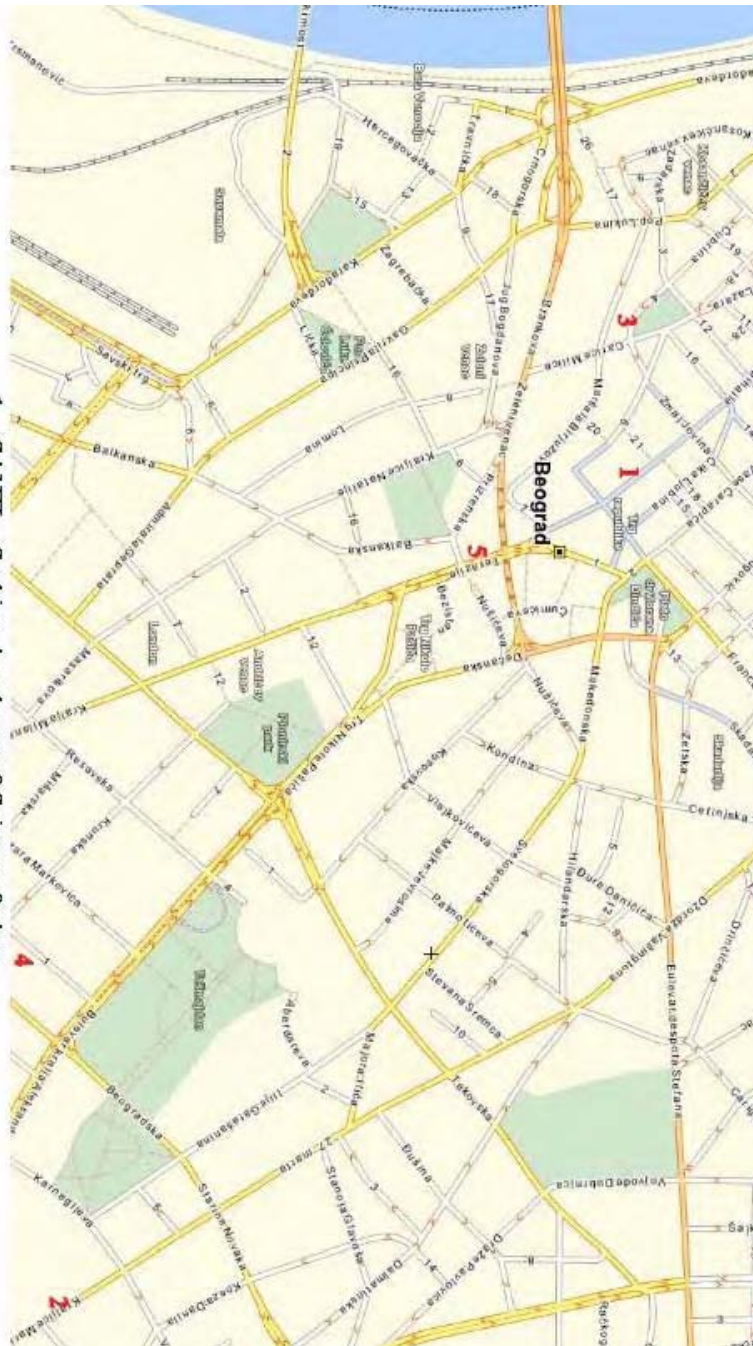
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