

FISITA World Automotive Congress 2010

**Budapest, Hungary
30 May – 4 June 2010**

Volume 1 of 5

ISBN: 978-1-61782-507-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2010) by the Gepipari Tudomanyos Egyesulet
All rights reserved.

Printed by Curran Associates, Inc. (2011)

For permission requests, please contact the Gepipari Tudomanyos Egyesulet
at the address below.

Gepipari Tudomanyos Egyesulet
II FO UTCA 68
P.O. Box 433
Budapest 1371 Hungary

Phone: 202-0656
Fax: 202-0252

mail@gteportal.eu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1:

A1-1: IC ENGINES, GOALS AND DEVELOPMENT:

A Contribution to Designing Efficient Cooling Fans for Modern Engine Compartments	1
<i>Gregor Tesch, Rainer Demuth, Nikolaus A. Adams</i>	
Turbocharging to Extend Hcci Operating Range in a Multi Cylinder Engine- Benefits and Limitations	12
<i>Thomas Johansson, Bengt Johansson, Per Tunestal, Hans Aulin</i>	
HCCI-Combustion in the Z Engine.....	26
<i>Timo Janhunen, Leankuja Aumet Oy</i>	
Trends in Patenting Diagnostic Systems for Internal Combustion Engines	36
<i>Marcus Doring, Michael Boye, Frank Van der Staay, Jorge Raposo, Chava Jucker, Miguel Marales, Sjoerd Hermens</i>	

B3-1: DEVELOPMENT OF STEERING AND SUSPENSION SYSTEMS:

Active Rear Steering System and Controller Design to Improve Vehicle Driving and Handling Behavior	49
<i>Gilberto Burgio, Alberto Girelli Consolari, Diego Alessandri, Jacopo Palandri</i>	
Innovative Suspension With Wheel-Guiding Transverse Leaf Spring.....	58
<i>Gabriele Fruhmann, Christoph Elbers, Andreas Vossel, Klaus Stretz, Tobias Keller, Stephan Lohr</i>	
Evaluation (of the steering behaviour) of Electromechanical Steering Systems.....	67
<i>Lars Frommig, Torben Pawellek, Durukan Beduk, Ferit Kucukay, Orhan Atabay</i>	
Application of Fuel And Cost Efficient Steering Technology - Variable Displacement Pump - To Suv/Suts	78
<i>Jinghong Yu, Edward Hosni, Jon Haskell</i>	

C3-1: VEHICLE PERFORMANCE TESTS AND SIMULATIONS:

Simplified Reaction Modelling of Automotive Catalytic Converters	88
<i>Martin Weilenmann, Dimitrios Tsinoglou, Jan Stilli</i>	
Hybrid System Response Convergence (HSRC): An Alternative Method for Durability Hybrid Simulation	98
<i>Dave Fricke</i>	
Cost and CO₂ Efficient Vehicle Simulation by Means of Dynamic Driving Test Stand	110
<i>Rudiger Tiemann, Frank Britzius, Christoph Kalina, Zafer Kulualp</i>	
Multibody Simulation of Curvilinear Dynamics While Engineering Superlong Highway Multilink Trucks.....	121
<i>Mikhail Vysotski, Andrei Kalesnikovich, Sergei Kharytonchyk, Sergei Kochetov, Sergei Susha</i>	
Advances in the Development of Vehicle Refinement Using Virtual Test Rig Applications Based on Real World Test Data.....	131
<i>Jonathan Webb, Laetitia Rodier</i>	
Estimation of Road Information From Running Vehicle.....	140
<i>Shigeyuki Yamabe, Ryuzo Hayashi, Kimihiko Nakano, Yoshihiro Suda</i>	
A Study on the Effectiveness of the Door Trim BSR Test Methods	149
<i>Hyunghyun Na, Hyunmin Park, Hyunchul Lee, Jongsoo Kim, Ohhwan Jeon, Ikkeun Jang</i>	

C5-1: TOOLS AND METHODS FOR VEHICLE SYSTEMS:

Virtual Testing of Traction Control Systems By Means of a Motorcycle Riding Simulator	154
<i>Vittore Cossalter, Alberto Doria, Stefano Rota, Roberto Sartori</i>	

Simulation Process Development of Radiation Noise and Application on the Exhaust Muffler	164
<i>Ki Chul Park, Dong Sun Kim, Young Tae Lee, Hee Chang Lim</i>	
Implementation Of A Vehicle-In-The-Loop Development And Validation Plattform.....	173
<i>Albert Albers, Tobias Duser</i>	
Nonlinear Static Analysis Of An Exhaust System Using Optimal Neural Network.....	183
<i>Javier Asensio, Angela Bernardini, Jorge Biera</i>	
Objectification Of Shift Quality – Requirement For Effective Transmission Calibration	191
<i>Simon Jenko, Artur Plotner, Gunther Alvermann, Ferit Kucukay</i>	
Method For Model Based Monitoring Of Complex Mechatronic Systems.....	200
<i>Albert Albers, Achim Seifermann</i>	

D2-1: INJURY MECHANISM, INJURY REDUCTION:

Cause Of Death For Children Involved In A Road Accident As Car Passenger: French Study.....	210
<i>Philippe Lesire, Sophie Cuny, Annie Langlois</i>	
A Study of Injury Analysis Model for Hybrid III Type and Thoracic Injury Criteria for Elderly Korean Occupant.....	220
<i>Han Wanhee, Kim Kiseong, Youn Younghan, Yoon Kyonghan</i>	
Development Of Crash Test Dummies – Requirements Of The Automotive Industry.....	228
<i>Klaus Bortenschlager, Christian Gehre, Markus Hartlieb, Philipp Wernicke</i>	
Vehicle Safety Testing: Are People Really Dummies?.....	238
<i>Robyn Richmond, Christine Burke, Tayseer Aldaghlas, Louis Brown, Anne Rizzo, Margaret Griffen</i>	
Intestinal Injuries In Motor Vehicle Crashes: The Forgotten Injury	244
<i>Tayseer A. Aldaghlas, Christine Burke, Jeffrey Jenkins, Anne G. Rizzo, Ranjit Pullarkat, Margaret M. Griffen</i>	
Safe4U^(TM): Valeo Active Front End Module for Pedestrian Protection.....	253
<i>Laurence Marechal, Jean-Louis Lanard, Frederic Vacca</i>	

E3-1: INTELLIGENT TRANSPORTATION SYSTEMS:

An In-Vehicle System For Traffic Violations Alert	254
<i>Aliane Nourdine, Javier Fernandez, Mario Mata, Sergio Bemposta, Veronica Egido</i>	
Ecodrive: Driver Behaviour Evaluation System To Reduce CO₂ Emissions	261
<i>Luigi Orofino, Luis Cilimingras, Eugenio Morello</i>	
Evaluating Human Machine Interaction of In-Vehicle Information Systems.....	277
<i>Yukiyo Kuriyagawa, Ichiro Kageyama, Satohiko Wanatabe, Hideharu Kuramoto, Sachi Mizobuchi, Kazunari Nawa, Ko Koga, Hitoshi Kumon</i>	

F1-1: BUSES:

Non-Linear Simulation Modeling Of Flexural Bending For Bus And Coach Structural Joints	288
<i>Enrique Alcala, Angel Martin, Rocio Grimaldi</i>	
Stress Calculation And Estimation Of Bus Structure In Case Of Transient Displacement Excitation.....	297
<i>Dezso Szoke, Sandor Vincze-Pap</i>	
A Study On The Development Process Of Bus Super Structure For Rollover Safety	309
<i>Jongchan Park, Jaewoo Park, Seungwon Yoo, Wookjin Na</i>	
Fatigue Life Prediction of a Bus Body Structure Using CAE Tools	319
<i>Cagri Iyidiker, Izet Cokal, Anil Yilmaz, Namik Kilic, Turkiye Otakar Otobus Karoseri</i>	
Analysis Of Bus Accident Statistics	330
<i>Matolcsy Matyas</i>	
Virtual Techniques For Bus Roof Strength Test, The Conditions Of VT Application	346
<i>Andras Csiszar, Sandor Vincze-Pap</i>	

H1-1: EFFICIENT PRODUCTION AND OPERATION OF VEHICLES AND COMPONENTS:

Digital Factory, Methods And Applications In AUDI Hungaria Motor Ltd.	347
<i>Janos Josvai, Jozsef Perger</i>	

Laser Hardning Adhesive Technology	357
<i>Takashi Aoki, Osamu Ina, Kazuo Kato, Akio Sugiura, Akira Ogawa, Kouji Akimoto</i>	
Recent Integration Achievements In Virtual Prototyping For The Automotive Industry	367
<i>Fouad El Khaldi, Raymond Ni, Pierre Culiere, Peter Ullrich, Carlos Terres Aboitiz</i>	
Optimising The Service Life Of Vehicles In A World Of Improving CO2 Emissions	378
<i>Harry Watson</i>	
Development Of Super Mild Steel For Automobile Differential Gear	386
<i>Byung Ho Choi, Yun Kyong Jo, Hyun Seok Yoon, Hee Dae Lee</i>	
Storage Assignment Optimization For Automotive Assembly Supply Warehouses	395
<i>Seval Ene, Nursel Ozturk, Fatih Demirci</i>	

A1-2: IC ENGINES, GOALS AND DEVELOPMENT:

Biogenous Gasoline – Suitability And Potential Of Alcohols, Ether And Btl-Gasoline For Engine Operation And Performance	401
<i>Philipp Dedl, Peter Hofmann, Bernhard Geringer, Dieter Karner, Martin Lohrmann</i>	
Hydrogen Enhanced Combustion: A Study On Soot Formation And Structure In Acetylene-Air Laminar Inverse Diffusion Flames	411
<i>B. P. Pundir, Arun K. Singh, P. K. Pandey</i>	
Spray Characterization of Alternative Diesel Fuels.....	421
<i>Dennis Backofen, Michael Konnig, Helmut Tschoke, Jurgen Schmidt</i>	
Contribution Of The Diesel Engine To Sustainable Mobility	436
<i>Kazutoshi Mori</i>	

B3-2: DEVELOPMENT OF STEERING AND SUSPENSION SYSTEMS:

Electrically Powered Steering System - Robust Integration Of Advanced Functions	446
<i>Marcus Weser, Mathias Seidel, Thorsten Dorn, Klaus Genz, Frank Jahde</i>	
Development Of Dynamic Cornering Enhancement Based On ESP System.....	455
<i>Motoaki Hosaka, Naoki Miyashita, Tatsuya Suzuki, Shinji Matsumoto, Naoteru Kujubu, Youichi Isono, Genpei Naito</i>	
Development And Investigation Of A Completely Semiactive Suspension System For Full Spring Mounted Tractors.....	463
<i>Stephan Hammes, Henning Meyer</i>	
Verifying The Performance Of A Hydraulic Damper Through Infrared Spectroscopy.....	471
<i>J. A. Calvo, V. Diaz, J. L. San Roman</i>	

C3-2: VEHICLE PERFORMANCE TESTS AND SIMULATIONS:

SiVIC, A Virtual Platform For ADAS And PADAS Prototyping, Test And Evaluation.....	480
<i>Dominique Gruyer, Glaser Sebastien, Benoit Vanholme, Nicolas Hiblot, Bertrand Monnier</i>	
Simple And Efficient Multibody Vehicle Dynamics Using Matlab And C++	490
<i>Javier Garcia De Jalon, Alfonso Callejo, Andres F. Hidalgo, Santiago Tapia</i>	
Research Into Event Data Recorder Characteristics In Standardized Crash Tests And Real World Accident Reconstruction Tests.....	500
<i>Nobuaki Takubo, Kenshiro Kato, Hirotoshi Ishikawa, Tamotsu Hiromitsu, Ryo Oga, Kenji Hagita, Makoto Kihira, Ikari Takahiro</i>	
Training Tools As Experimental Testing For Automotive Electronic Boards.....	510
<i>Santiago Otero, Francisco Poza, Miguel Angel Dominguez, Perfecto Marino</i>	
Application Of Torque Capacity Prediction Technology During Operating Conditions For Automatic Transmission Clutches	520
<i>Saito Toshihiro</i>	

C5-2: TOOLS AND METHODS FOR VEHICLE SYSTEMS:

Improving Passenger Compartment Thermal Comfort By Measuring And Controlling Equivalent Temperature	530
<i>Allen Curran, Scott Peck, Mark Hepokoski</i>	
Compact High-Efficiency Blower Fan for HVAC	536
<i>Sakai Masaharu, Ochiai Toshinori, Mitsuishi Yasushi</i>	
A Low Fidelity Nonlinear Model Of 4WD Torsional Stiffness At Tip-In/Tip-Out	546
<i>Raja Mazuir Raja Ahsan Shah, R. Peter Jones, Caizhen Cheng, Gunwant Dhadyalla, Jasjit Pawar, Sean Biggs</i>	
Interactive Knowledge Discovery In Recordings From Vehicle Tests	554
<i>Andreas Theissler, Daniel Ulmer, Ian Dear</i>	

D2-2: INJURY MECHANISM, INJURY REDUCTION:

Biomechanical Research for the Reduction of Minor Neck Injuries during Rear-end Impacts - Human Volunteer Experiments and Accident Reconstruction Using Human FE Model Simulations.....	564
<i>Koshiro Ono, Susumu Ejima, Kunio Yamazaki, Fusaka Sato, Jonas Aditya Pramudita, Koji Kaneoka, Sadayuki Ujihashi</i>	
Consumer Whiplash Ratings – Have They Influenced Seat Designs In Helpful Ways?	574
<i>David S. Zuby, Adrian K. Lund</i>	
Whiplash Prevention – Design, Conflicts, Achievements View Of A Car Manufacturer	584
<i>Thomas Schwarz, Ulrich Widmann, Jorn Scheel, Volker Rezek, Christoph Grundheber</i>	
Multi-Variable Experimental Matched-Pair Comparison Of Rear Impact Occupant Protection Performance Of Strong Belt-Integrated Vehicle Seats Versus Weaker Non-Belt-Integrated Types.....	593
<i>Kenneth Saczalski, Mark Pozzi, Joseph Burton, Todd Saczalski</i>	

E3-2: INTELLIGENT TRANSPORTATION SYSTEMS:

Faster To Vision Zero Via Santayana: The Recessionary Evidence.....	610
<i>Al Gullon</i>	
Birdeye Visualization For Assisting Prospective Driving.....	620
<i>Markus Duschl, Gundrun Klinker, Darya Popiv, Florian Laquai, Rakic Mariana</i>	
Development Of Ecological Driving System Using Model Based Prediction Of Traffics And Information Of Road Shapes	630
<i>M. A. S. Kamal, M. Mukai, J. Murata, T. Kawabe</i>	
Assessment of Impacts of Advanced Driver Assistance Systems within the Large Scale Field Test euroFOT.....	N/A

F1-2: BUSES:

Quantification Of The Environmental Impact In The City Of Madrid Depending On Technical Measures Applied To Bus Fleet	640
<i>Jose Maria Lopez, Felipe Jimenez, Francisco Aparicio, Nuria Flores, Javier Paez</i>	
CAE Based Certification for Safety Regulations: Bus Rollover – A Case Study.....	649
<i>Anil Kumar Chigullapalli, Rahul S. Mahajan, Abhay V. Mannikar, S. Raju</i>	
A New Front Structure For Coaches To Improve Their Crashworthiness.....	659
<i>Gregor Steinmetz</i>	

H1-2: EFFICIENT PRODUCTION AND OPERATION OF VEHICLES AND COMPONENTS:

Research On The User's Costs In Motor Vehicles Life Cycle.....	668
<i>Kristina Jakimovska, Todor Davcev, Igor Gjurkov</i>	

Metallurgical Design And Fatigue Endurance Of TS 780 MPA Grade ERW Steel Tube For Automotive Suspension Parts	675
<i>Shunsuke Toyoda, Masatoshi Aratani, Yuji Hashimoto, Sajji Matsuoka, Yoshikazu Kawabata, Akio Sato</i>	
Integration Of A Honing Tool Into A Combination Machining Centre	684
<i>Kai-Uwe Paffrath, Dirk Biermann</i>	
Trains, Planes, And Automobiles In The 21st Century – How Digital Prototyping Enables Design At The “Speed Of Thought”	691
<i>Edward Martin</i>	

A1-3: IC ENGINES, GOALS AND DEVELOPMENT:

Heat Transfer Measurements Inside A Gas Fuelled Spark Ignited Engine For Model Validation	698
<i>Joachim Demuyck, Michel De Paepe, Roger Sterens, Sebastian Verhelst</i>	
Influence Of Diesel Biofuels On Engine Oils Deterioration – Extended Methods Of Engine Oils Assessment	708
<i>Wieslawa Urzedowska, Zbigniew Stepien, Stanislaw Oleksiak</i>	
The PCCI Combustion Process For Diesel Engine. A Key Element For Upcoming Euro 6	718
<i>A. Vanegas, B. Kerschgens, N. Peters</i>	
Optimization Of The Glow Plug – Spray Interaction For Robust Low-Temperature Startability In Low Compression Ratio Diesel Engines By Means Of Combined 3D-CFD And Design For Six Sigma	727
<i>Cornel Stan, Soeren Taeubert, Giovanni Cipolla, Alberto Vasallo</i>	
Development Of Principles And Methods Of Estimation Of Thermal Condition Of Semitransparent Coatings In Complex Heat Exchange Combustion Chambers For Low-Heat-Rejection Diesel Engines	739
<i>Vladimir Merzlikin, Syatoslav Cheranov, Oleg Sidorov, Robert Rettberg</i>	
Enhancement Potential Of The Thermal Conversion Efficiency Of Ice Cycles By Using Of A Real Atkinson Cycle Implementation And (Very) High Pressure Turbo Charging	750
<i>Victor Gheorghiu</i>	

A2-1: CONSUMPTION AND EMISSION REDUCTION:

Experiences Of Retrofit Particulate Filters For Diesel City Buses And Passenger Cars	766
<i>Tamas Meretei, Peter Bodor</i>	
A Study On AT Damper Clutch For Improving Fuel Efficiency And Driveline Vibration	776
<i>Sung Yeol Kim, Sung Yop Lee, Kwang Min Won, Jin Hyun Kim</i>	
Feasibility Study Of NOx Reduction Using An Active Exhaust Control System	785
<i>Jun Iwamoto, Katsushi Wada, Ryusuke Shiraishi, Hitoshi Mikami, Go Motohashi, Hiroshi Ohno</i>	
Potential Of Natural Gas Powered Vehicles In Reducing CO2 And Pollutant Emissions Under Real- World Driving Conditions	797
<i>Robert Alvarez, Martin Weilenmann, Christian Bach</i>	
Effects Of LPG - Air Enrichment With HRG Gas On Performance And Emissions Of A SIEngine	807
<i>Adrian Birtas, Iulian Voicu, Gheoghe Niculae, Alexandru Racovita, Radu Chiriac, Nicolae Apostolescu, Cristian Petcu</i>	
Comparative Analysis Of Transmission Efficiency For One Mode And Two Mode Power Split Transmission	816
<i>Jaeyoung Kang, Jungmin Kim, Yongha Kim, Hyunsoo Kim</i>	
Effects Of Hydrogen Addition To Intake Gas On Exhaust Emission Of A Diesel Engine With EGR	826
<i>Toru Miyamoto, Hirkazu Hasegawa, Naoya Kojima, Masato Mikami, Hajime Kabashima, Yasuhiro Urata</i>	
The Prospects Of Reducing Fuel Consumption With Automobile Basic Efficiency	834
<i>Tetsunori Haraguchi</i>	

A4-1: NOISE AND VIBRATION REDUCTION:

Adaptive Controllers For Active Noise Reduction Of A Stripped Engine	842
<i>Tommy Luft, Stefan Ringwelski, Ulrich Gabbert, Wilfried Henze, Helmut Tschoke</i>	
Analysis And Control Of Inverted Tooth Chain Vibration	852
<i>Masao Ishihama, Hiroyuki Watanabe</i>	
Study Of Chain Meshing Noise Using Multi-Body Dynamics Simulation	862
<i>Motoyasu Sakaguchi, Masaki Aguro, Shinji Yamada, Yuji Matsumochi, Naoko Machida</i>	

An Experimental Investigation Into The Effects Of Injection Pressures And Swirl Ratio Using Cluster Nozzle Configurations In A Di Diesel Engine.....	870
<i>Hyun Woo Won, Seung Eun Moon, Vivak Luckhchoura, Sung Wook Lee, Norbert Peters</i>	

B3-3: DEVELOPMENT OF STEERING AND SUSPENSION SYSTEMS:

The Impact Of Nonlinear Steering Systems On Objective And Subjective Steering Evaluation.....	880
<i>Rob Kraaijeveld, Klaus Wolff, Theodor Vockrodt</i>	
Design And Implementation Of An Active Suspension System With Terrain Preview	888
<i>David Purdy, Sanjay Mehrishi, Larbi Berrouila</i>	

VOLUME 2:

Toward eCORNER: Energy Efficient Design Of Mechatronic Suspension Systems.....	897
<i>Haymo Niederkofer, Andres Eduardo</i>	
Driving Torque Transfer System For Fwd With Steering Wheel Torque Compensation.....	907
<i>Kiyoshi Wakamatsu, Takashi Nishimori</i>	
Handling Analysis of a Passively Suspended Vehicle Influenced by Ride Motions.....	917
<i>Javad Arab, Torabi Amir, Tabatabii Kourosh, Fahmeh Amiri Majid</i>	

C2-1: METHODS OF STRENGTH AND LIFE ESTIMATION:

Fatigue Life Estimation Of Joints In Vehicle Body Development Based On A Local Approach And Mesh-independent Modelling	927
<i>Franz Ruprechter, Matthias Martin, Andreas Ruf, Reinhard Weisner, Gerhard Kepplinger, Michael Hofer, Johannes Steiner</i>	
Analytical Life Prediction Modeling For Diesel Fuel Filters Optimization	937
<i>Mathieu Petiteaux</i>	
Thermal Fatigue Lifetime Prediction For Exhaust Manifold	947
<i>Kyung Wook Baek, Soon Cheol Park, Chung Kwan Kim, Yong Jun Oh, Byung Hoon Min, Won Wook Jung</i>	
Fatigue Life Prediction Method Of Wire Harness System In The Automotive Vehicle's Door	957
<i>Sang-kyo Lee, Heung-shik Lee, Eun-young Choi, Chongdu Cho, Ji-hye Won, Young-gil Kim, Seo Hiroyuki, Sung-dam Kim, Hyoung-joo Seo</i>	
The Thermal Fatigue Test And Analysis For Development Of Railway Brake Disk Material	967
<i>Choonghwan Lim, Byeongchoon Goo</i>	

C4-1: TESTING AND SIMULATION OF VEHICLE AND COMPONENT DYNAMICS:

Driver-Less Chassis Dynamometer Testing For EV Power-Trains.....	974
<i>Vaidya Vishwas, Bhare Haresh</i>	
Vehicle Vibration – Field Complaint Analysis	981
<i>Thummeli Buchi Reddy, Vishnu C. Dixit, Hemant Potphode</i>	
Gear Rattle Modelling And Meshing Gear Teeth Behaviour Estimation Considering Lubrication Influence	989
<i>Kazuhide Togai, Hiroki Yamaguchi, Hiroki Yamaura, Jamie Pears, Theo Potter</i>	
Look-Up Based Synchronizer Logic For The Effective Actuation Of The Countershaft Brake In A Heavy Duty Amt With Face Dog Clutch.....	999
<i>Gergely Boka, Balazs Trencseni, Huba Nemeth</i>	
Examination of Manual Transmission Gear Jump-Out Behavior.....	1008
<i>Takanori Nukata, Akihiro Fujii, Hideaki Koga, Tomohiro Ishikawa, Katsura Naito</i>	
Methodology of Service Life Estimation for Automotive Rubber Component.....	1017
<i>Su Woo Chang, Doo Kim Wan, Sung Park Hyun, Gil Kim Young, Hoon Lee Seong</i>	
MBS Quarter Vehicle Test Rig – Influence Of Damper Modelling On Simulation Quality	1023
<i>Georg Klose, Mario L. Bergmann, Ferit Kucukay</i>	

D3-1: ACTIVE SAFETY ISSUES:

Benefit Analysis Of An Advanced Emergency Braking System Based On End User Tests In A Driving Simulator.....	1031
<i>Neli Ovcharova, Stefan Benz, Werner Uhler, Frank Gauterin, Firas Lathaus, Dino Silvestro</i>	
A Rear-End Collision Warning System With Online Oneclass Support Vector Machine.....	1039
<i>Yuta Inoue, Kazushi Ikeda, Hiroki Mima, Tomohiro Shibata, Naoki Fukaya, Kentaro Hitomi, Takashi Bando</i>	
New Methodologies To Check The Wheel Alignment With A Sideslip Tester	1046
<i>Manuel Perez-Ray, Daniel Garcia-Pozuelo, Maria Jesus L. Boada</i>	
The Ability Of People To Estimate Distances Along A Roadway And How Their Education, Hobbies And Occupation Affect Accuracy.....	1055
<i>Mark Strauss, James Carnahan</i>	
Xenon Car Lighting As Safety Device.....	1065
<i>Walter Schlager, Lex Krzyzanowski</i>	
Design And Assessment Of Informative Auditory Warning Signals For ADAS.....	1071
<i>Frederik Diederichs, Claus Marberger, Philipp Jordan, Vivien Melcher</i>	
A Test Programme For Active Safety Systems – Latest Developments Of The E-Value Project.....	1080
<i>Micha Lesemann, Jorn Lutzow, Adrian Zlocki</i>	
Vision-Based Safe Backing-Up Maneuvers With Obstacle-Free Space Detection	1086
<i>Christophe Vestri, Remy Bendahan, Frederic Abad, Sebastien Wybo, Dzmitry Tsishkou, Sylvain Bougnoux</i>	

E1-1: INTELLIGENT VEHICLE SYSTEMS:

Collision Damage Mitigation System Using Millimetre-Wave Radar	1095
<i>Hyok-jin Chong, Dae-youn Um, Seung-hyeon Lee, Jong-kap Kim</i>	
Development And Validation Of Manoeuvre-Based Driver Assistance Functions For Conduct-By-Wire With IPG Carmaker	1102
<i>Stephan Hakuli, Matthias Kluin, Sebastian Geyer, Hermann Winner</i>	
Individual Adaptation Of ADAS In Car-Following State Based On Naturalistic Driving Behavior Modeling.....	1112
<i>Pongsathorn Raksincharoensak, Shintaro Saigo, Masao Nagai, Masamichi Shimosaka, Tomomasa Sato</i>	
Real-Time Driver Assessment.....	1121
<i>Peter Miller</i>	
An Adaptive Neuro-Fuzzy Integrated Control Approach For Improving Vehicle Handling And Stability.....	1128
<i>Rana R. Farag, Maria-Jesus L. Boada, Vicente Diaz, Beatriz L. Boada</i>	
Intelligent Transportation Systems - Demands And Needs For Security Supply Chain In The Brazilian Market.....	1137
<i>Eduardo Mario Dias, Andre De Souza Carvalho, Alberto Toshio Kotsuka Jr., Graciellen Silva Alves, Caio Fernando Fontana, Fabio Mori</i>	
Intelligent Transport Systems – Standardization For Brazilian Market	1148
<i>Eduardo Mario Dias, Andre De Souza Carvalho, Alberto Toshio Kotsuka Jr., Graciellen Silva Alves, Caio Fernando Fontana</i>	

A1-4: IC ENGINES, GOALS AND DEVELOPMENT:

Development Toward “Diesel Revolution” Using Ultra High Pressure CRS With Closed-Loop Control System For Heavy Duty Engine.....	1154
<i>Xiumei Wang, Takashi Kikutani, Katsuhiko Takeuchi, Noriaki Nakane</i>	
Model Based Calibration Methodology for Application on Non-Road Diesel Engines.....	1164
<i>Rolf Dreisbach, Thomas Cartus, Hanno Bachler, Martin Schubler</i>	
How to Maximize Transport Efficiency... the MAN Solution	1174
<i>Ralf Marquard</i>	
Advanced Design Of Gas Engines	1175
<i>Alberto Boretti</i>	
Effect Of Ethanol And Lead Gasoline Mix On Characteristics Of Lubricants.....	1194
<i>Snezana Petkovic, Pero Dugic, Omer Kovac, Miroslav Pecanac</i>	

Variable Valve Actuation: Performance Evaluation And Optimization Tools	1204
<i>I. Montalto, A. Guzzo, A. Riegel, F. De Cristofaro, A. Casavola, S. Bova</i>	

A2-2: CONSUMPTION AND EMISSION REDUCTION:

Torque, Efficiency And NOx Emissions Of The Turbocharged Always Lean Burn Spark Ignition (TC-ALSI) Engine	1214
<i>Harry Watson, Michael Brear, Dennis Peter, Payman Abbasi-Atibeh</i>	
On-Board Emission And Fuel Consumption Comparison Of Three LDV's Fuelled With Diesel, Pure Plant Oil And A Biodiesel Mix.....	1225
<i>Guido Lenaers, Bart Beusen</i>	
Particulate Filter Onboard Diagnostics By Means Of A Particle Sensor.....	1235
<i>Manfred Weigl, Christian Roduner, Thomas Lauer</i>	
A Novel Exhaust Heat Recovery System To Reduce Fuel Consumption	1244
<i>Frank Will</i>	
Operating Fuel Consumption Estimation In Vehicles	1254
<i>Jacek Kropiwnicki, Stanislaw Taryma</i>	
Reduction Of Fuel Consumption By Early Anticipation And Assistance Of Deceleration Phases	1264
<i>Darya Popiv, Klaus Bengler, Mariana Rakic, Markus Duschl, Florian Laquai</i>	

A4-2: NOISE AND VIBRATION REDUCTION:

Adaptive Controller Design For The Attenuation Of Engine Excited In-Car Vibrations By Using An Active Mounting System	1274
<i>Martin Zornemann, Roland Kasper</i>	
Annoying Noises: Stick-Slip Analysis.....	1282
<i>Beatriz Bragado Perez, Oliver Kergelen, Miguel Angel, Morcillo Lopez, Angelica Sanchez Bragado</i>	
Engine Diagnosis Applying Order Analysis On Vibration And Noise Information.....	1292
<i>Pal Banlaki, Kulcsar Szilveszter</i>	

B3-4: DEVELOPMENT OF STEERING AND SUSPENSION SYSTEMS:

Development Of An Adaptive Controlled Gas-Spring-Damper For Passenger Cars	1300
<i>Frank Barecke, Roland Kasper</i>	
A Self-Powered Embedded System For Shock Absorber Diagnosis During Vehicle Motion	1308
<i>Carlos Ferreira, Paulo Ventura, Nuno Pires, Christopher Grinde, Raul Morais, Antonio Valente, Carlos Neves, Manuel Reis</i>	
A Study on the Motion Control of 6x6 Electric Vehicle with Skid Steering Part 1: Torque Control Algorithm for 6X6 Electric Vehicle with In-Wheel-Motor.....	1318
<i>Ashfaq Ali Mian, Jun Kim Chang, Soo Han Chang</i>	
Ride Comfort And Body Attitude Compatible Control Using Nonlinear H∞ Theory In Semi-Active Suspension	1330
<i>Motohiko Honma, Jin Hozumi, Yuichi Mizuta, Yanqing Liu, Kotaro Okimura, Taisuke Hayashi, Takahito Watanabe</i>	

C2-2: METHODS OF STRENGTH AND LIFE ESTIMATION:

On The Determination Of Fatigue Properties Of Selective Laser Sintered Components In Polyamide: A Stress Based Approach	1340
<i>Brecht Van Hooreweder, Filip De Coninck, Rene Boonen, Paul Sas, K. U. Leuven</i>	
Numerical Prediction Of Permanent Deformation Of Automotive Weather Strip.....	1349
<i>Hyung-II Moon, Heon Young Kim, Joon Chul Park, Byung-Kwon Min, Jeong Seok Oh</i>	
Wear Measurement With Radioactive Isotopes In Component And Engine Bench Test - Impact Of Fuel And Bio-Fuel On Lubricating	1358
<i>Martin Jech, Claudia Lenauer, Franz Novotny-Farkas, Thomas Wopelka, Ferenc Ditroi, Bernhard Geringer, Friedrich Franek</i>	

Application Of Fatigue Life Prediction Technique For Bringing Road To Lab With Improved Effectiveness Of Simulation Process	1365
<i>Sivakumar Balakrishnan, Balaji Mathialagan, Sridhar Balaguru, Sudhaharan Thiagarajan</i>	

C4-2: TESTING AND SIMULATION OF VEHICLE AND COMPONENT DYNAMICS:

From Soiling to Stone Chipping – Simulation of Particle Trajectories and Impact in Time Averaged and Transient Flow Fields around Vehicles	1377
<i>Norbert Grun, Andreas Schonberger, Martin Schulz</i>	
Optimisation Of The Efficiency Of Dual Clutch Transmissions.....	1387
<i>Kathrien Inderwisch, Tobias Kassel, Ferit Kucukay</i>	
Dynamic Loads Of The By-Pass Valve Of High Pressure EGR Systems Due To Pressure Pulses	1397
<i>Concepcion Paz, Jacobo Porteiro, Antonio Eiris, Eduardo Suarez, Carlos Castano</i>	
Simulation With a Bicycle Model Using Multi-Body Dynamical Wheel Model	1405
<i>Balint Szabo</i>	

D3-2: ACTIVE SAFETY ISSUES:

Sideslip Angle Based Vehicle Dynamics Control System to Improve Active Safety	1415
<i>Thomas Raste, Matthias Kretschmann, Peter Lauer, Alfred Eckert, Peter E. Rieth, Kranz Thomas</i>	
Analysis of The Influence of Using Systems of Indirect Vision to Heavy Goods Vehicles In Spain.....	1425
<i>Ayuso Paez, Javier Francisco, Crespo Furones, Romero Badea, Aparicio Alejandro, Francisco Izquierdo</i>	
Electronic Stability Control Coordinated With Automotive Navigation System	1435
<i>Yoshiyuki Yasui, Hiroyuki Kodama, Takayuki Miyajima</i>	
On the Assessment of Active Safety Systems and Vehicle Stability Using Objective Test Methods – Latest Developments of Evalue Project.....	1442
<i>Josep Maria Dalmau, Sandro Boltshauser, Andrés Aparicio</i>	

E1-2: INTELLIGENT VEHICLE SYSTEMS:

Development of Lane Keeping Assistance System with Steering Torque Control	1454
<i>Suk-ki Min, Hoi-won Kim, Seung-hyeon Lee, Yun-sang Lee, Chong-kap Kim</i>	
Emergency Steer Assist – Advanced Driver Assistance System For Emergency Lane Change Maneuvers	1463
<i>Alfred Eckert, Bernd Hartmann, Peter E. Rieth</i>	
A Novel Camera-Based Rear Vision System for Lane Changes with 180 Degree Field of View.....	1473
<i>Takura Yanagi, Noriko Shimomura, Satoshi Chinomi, Hiroshi Mouri</i>	
GALILEO-based Collision Avoidance System.....	1483
<i>Marc Wimmershoff, Frederic Christen</i>	
A Survey on Intelligent Vehicle Safety Systems for Adverse Weather Conditions	1491
<i>Michael Ditze, Frank Golatowski, Nico Laum, Andras Varhelyi, Sven Gustafsson, Konstantina Geramani</i>	
Secure Automotive on-Board Electronics Network Architecture.....	1499
<i>Ludovic Apvrille, Rachid El Khayari, Olaf Henniger, Yves Roudier, Hendrik Schweppe, Herve Seudie, Benjamin Weyl, Marko Wolf</i>	
System and Algorithms for Obstacle and its Kinematic Description in Applications of Collision Avoidance	1508
<i>Felipe Jimenez, Clara Martin, Oscar Gomez, Francisco Aparicio</i>	

A1-5: IC ENGINES, GOALS AND DEVELOPMENT:

HCPC: A New Combustion System to Lower Diesel Engine Emission	1518
<i>Musu Ettore, Rossi Riccardo, Gentili Roberto</i>	
Development of Integrated Engine/Catalyst Model for Real-Time Simulations of Control Design Options	1529
<i>Syed Wahiduzzaman, Wen Wang, Andy Leonard, Seth Wenzel</i>	
Numerical Modeling of D87 Dual Fuel Engine.....	1552
<i>Ayatallah Gharehghani, Seyed Mostafa Mirsalim, Seyed Ali Jazayeri</i>	

Development and Potential of the Renault CNG 2.0l Turbocharged Engine	1553
<i>Laurent Mispreuve, Eric Magère, Sébastien Kermarrec, Jérôme Obiols, Vivien Delpach, Dominique Soleri</i>	
New Approach to Mitigate Icing Phenomenon in Liquid Phase Injection of LPG Fuel	1566
<i>Sunyoup Lee, Changup Kim, Kyonam Choi, Kernyong Kang</i>	

A2-3: CONSUMPTION AND EMISSION REDUCTION:

Influence of the Gas Transport Properties as Functions of Temperature on no_x Reduction With A UREA-SCR System Using Numerical Analysis.....	1575
<i>Byan Wahyu Riyandwita, Myung-whan Bae, Jae ok Bae</i>	
Model Development of Reduced Surrogate Fuel and Soot Precursor Mechanisms for Light-Duty Diesel Engine Simulations	1583
<i>Kar Mun Pang, Hoon Kiat Ng, Suyin Gan</i>	
Experimental Investigation Over Closed-Loop Combustion Control Potentiality for Mitigating the Impact of Alternative Diesel Fuels on Performance and Emissions of a Euro5 Automotive Diesel Engine	1593
<i>Chiara Guido, Carlo Beatrice, Silvana Di Iorio, Claudio Ciaravino, Alberto Vassallo, Giovanni Cipolla</i>	
Bio-Hydrogen Pathways for the Portuguese Road Transportation Sector	1605
<i>Ana Filipa Ferreira, Patricia Baptista, Carla Silva</i>	
Fuel Efficient, Continously Regenerating Diesel Particulate Filter With On-Board Hydrogen Production: Towards A Fuel Reformer – Diesel Engine Aftertreatment System.....	1616
<i>Kampanart Theinnoi, Simaranjit Singh Gill, Athanasios Tsolakis, Miroslaw Lech Wyszynski, Athanasios Megaritis, Yang Athanasios, Harrison Changho</i>	

A3-1: ALTERNATIVE DRIVELINES:

Advances In Cryo-Compressed Hydrogen Vehicle Storage (CcH₂)	1626
<i>Oliver Kircher, Tobias Brunner</i>	
Future Urban Vehicle For Sustainable Mobility.....	1634
<i>Atluri V. Prasad, Koprubasi Kerem, Gupta Rajiv, Brinkman Norman</i>	
Designing Cars For Renewable Energy And The Environment Describing A Vehicle Architecture Appropriate For Global Markets In The 21st Century	1644
<i>Jim Kor, P. Eng</i>	
The Role Of Variable Drive Technology In Realising Fuel Economy And Emissions Improvements	1663
<i>Dick Elysy</i>	
Modeling Of The THS-II Series/Parallel Power Train And Its Energy Management System	1673
<i>Charbel Mansour, Denis Clodic</i>	

B1-1: STYLING, AERODYNAMICS:

Validated Virtual Development of Vehicle Aerodynamics	1690
<i>Gunther Lindbichler, Robert Naresh Laddha, Robert Premstaller</i>	
Wheel Aerodynamic Developments On Passenger Cars By Module-Based Prototype Rims And Stationary Rim Shields.....	1698
<i>Zhilng Qiu, Christoffer Landstrom, Lennart Lofdahl, Linda Josefsson</i>	
Aerodynamic Design Optimization Of Automotive Vehicle Configuration Represented By Vehicle Modelling Function For Controlling Coanda Flow.....	1708
<i>Seung-On Kang, Sang-Ook Jun, Hoon-Il Park, Yo-Cheon Ku, Jung-Do Kee, Kyu-Hong Kim, Dong-Ho Lee</i>	
Adjoint-Based Drag Optimization of a Passenger Car (First Report)*	1718
<i>Daniel Vinteler, Guillaume Pierrot, Mustafa Megahed</i>	

C4-3: TESTING AND SIMULATION OF VEHICLE AND COMPONENT DYNAMICS:

Development Of A Parameter Estimation Scheme For Concept And Real-Time Simulations Of Vehicle System Dynamics.....	1722
<i>Marco Gubitosa, Takatoshi Tsukano, Stijn Donders</i>	

Analysis Of Geometrical Deviations In Clutch Systems And Their Interdependencies In Relation To The Excitation Of Judder Vibrations	1736
<i>Albert Albers, Christian Stier</i>	
Test Signals For Four Post And Seven Post Testing	1746
<i>Rene Dias Torcato, David Purdy</i>	
An Approach To Increase The Efficiency Of Experiments Applied For The Analysis Of A Gear Unit.....	1755
<i>Thomas Freudenmann, Mohanad El-Hajj, Albert Albers</i>	
Vehicle Environment Simulation Using Realistic Road Networks For Predictive Driver Assistance Systems	1768
<i>Thomas Ganslmeier, Mirko Nentwig, Erwin Roth, Kilian Cosei von Neumann</i>	

VOLUME 3:

D3-3: ACTIVE SAFETY ISSUES:

Study Of Activation Timing Of Automatic Braking For Vehicle-Infrastructure Cooperative Driving Support System	1777
<i>Toshiya Hirose, Nobuhisa Tanaka, Toushi Kojima, Tadashi Hatano, Tetsuo Taniguchi, Toichi Sawada</i>	
Driver Assistance Systems, Status 2010	1787
<i>Christian von Glasner, Sigmar Micke</i>	
A New Mathematical Model To Study The Influence Of Vehicle Dynamics Control On Vehicle Collision Mitigation	1797
<i>Mustafa Elkady, Ahmed Elmarakbi, David Crolla</i>	

E1-3: INTELLIGENT VEHICLE SYSTEMS:

Intelligent Control Systems For Active And Passive Safety	1806
<i>Istvan Szaszi, Viktor Nador, Sebastian Helbeck, Peter Jan Stadler</i>	
Fault-Tolerant Gateway-Embedded System For In-Vehicle Networks.....	1816
<i>Suk-Hyun Seo, Jin-Ho Kim, Sung-Ho Hwang, Key Ho Kwon, Jae Wook Jeon</i>	
Developing A Test Tool For Advanced Assistance Systems In Intersections, Pedestrian And Vehicle Detection.....	1824
<i>Diez D. Gallegos, F. Liesa Mestres, O. Munoz Zoilo</i>	
Complex Fleet Management System Requirements For Fuel Transportation	1830
<i>Zsolt Szalay, Szilard Aradi</i>	

F2-1: TRUCKS:

Impacts In The Portuguese Light-Duty Road Transportation Sector Of Increasing Electrification Scenarios.....	1840
<i>Patricia Baptista, Carla Silva, Tiago Farias</i>	
Dynamics Of Hydraulically Actuated Rear Axle Steering Mechanism For Commercial Vehicles.....	1858
<i>Strela Tamas, Nemeth Huba</i>	
Simulation and Energy Management of Hybrid Commercial Vehicles with Attention to the Thermal System Behaviour	1868
<i>Klaus Prenninger, Martin Ackerl, Josef Hager, Martin Winter, Heimo Nakesch</i>	
Prospective Application Of Intelligent Systems For The Russian Commercial Vehicles	1878
<i>Vitaly Nikolskiy, Anatoly Groshev, Anton Tumasov, Laszlo Palkovics</i>	
FAW's Brand-new 11L Heavy Duty Diesel Engine.....	1885
<i>Jun Li, Pengcheng Wang, Fang Hu</i>	

A1-6: IC ENGINES, GOALS AND DEVELOPMENT:

Two-Step Low Pressure Direct Hydrogen Injection	1886
<i>Stefano Frigo, Stefania Zanforlin, Ettore Musu, Roberto Gentili</i>	
Hydrogen as a fuel – Lessons learnt	1895
<i>Andreas Opfermann</i>	

Influence Of Inlet Pressure, EGR, Combustion Phasing, Speed And Pilot Ratio On High Load Gasoline Partially Premixed Combustion.....	1896
<i>Vittorio Manente, Johansson Bengt, Tunestal Per, Cannella William</i>	
An Experimental Study On Heat Transfer Coefficient Of All Combustion Chamber Wall Surfaces In A Naturally Aspirated D.I. Diesel Engine.....	1926
<i>Yuta Aoki, Masahiko Emi, Shuji Kimura, Kenjiro Shimano, Yoshiteru Enomoto</i>	
Identification Of Phaze Changing Process Of Propanebutane Mixture In Evaporator Of A Car Engine Fuel System	1938
<i>Kneba Zbigniew, Taryma Stanislaw</i>	
Development Of A Novel Single-Mode, Steady-State Test Cycle For Light-Duty Diesel Engines	1944
<i>Jo-Han Ng, Hoon Kiat Ng, Suyin Gan</i>	
Simulation Of A Spark Ignition Engine With Cylinders Deactivation	1954
<i>Valerian Crotorescu, Andrei Maciac, Mircea Oprean, Cristian Andreeescu</i>	

A2-4: CONSUMPTION AND EMISSION REDUCTION:

EcoBoost : Downsized Gasoline DI Turbo Engines as the Backbone of Ford's CO₂ and Fuel Economy Product Strategy	1960
<i>E. Curtis, O. Kunde, T. McCarthy, P. Philips, A. Schamel, C. Weber, M. Wirth</i>	
Aftertreatment System Design For Euro VI Passenger Diesel	1973
<i>Wilfried Mueller, Paul Spurk, Stefan Franschek</i>	
Energy Efficiency Comparison Between Active And Passive Emission Control Systems Adopting Standard Emission Test Cycles.....	1981
<i>Angelo Algieri, Mario Amelio, Pietropaolo Morrone</i>	
Heavy Duty Liquified Natural Gas Engine Developments To Meet Future Emissions Requirements. Methodology And Real Application	1990
<i>Xavier Ribas</i>	
Stage III B / Tier 4I Exhaust Emission Control Technologies For Diesel Engines In Agricultural Applications.....	1996
<i>Manlio Mattei, Luca Crippa</i>	

A3-2: ALTERNATIVE DRIVELINES:

Anti-Jerk Control Strategy For Parallel Hybrid Electric Vehicles	2006
<i>Joonyoung Park, Taehoo Lee, Tae-Wook Park, Sangjoon Kim, Myungwon Lee</i>	
Fuel Economy And Energy Consumption Of Hybrid And Plugin Hybrid Cars In Nordic Climate Conditions	2014
<i>Juhani Laurikko, Ari-Pekka Pellikka</i>	
Energy And Fuel Saving Scenario Using Hydro-Pneumatic Energy Storage System In An Automotive Application	2024
<i>Daniele Di Rocco, Philipp Urch, Thomas Schaden, Engelbert Loibner</i>	
REGENEBD: A Cost-Effective Pneumatic Regenerative Stop-Start Hybrid System For Buses And Commercial Vehicles	2048
<i>Cho Yu Lee, Hua Zhao, Tom Ma, Jing Feng, Jie Jing, Zhigiang Lin</i>	
Optimised Air Conditioning Control for Hybrid Vehicles	2058
<i>Peter Miller</i>	
Customer Benefit Of HEV In Real Traffic	2064
<i>Marjam Eghtessad, Markus Fugel, Ferit Kucukay</i>	

B4-1: DEVELOPMENT OF VEHICLE PARTS AND SYSTEMS:

Development Of Fuel Consumption Reducing Control Algorithms During Acceleration And Deceleration For The Automotive Air Conditioning System With An External Variable Compressor.....	2074
<i>Jae Woong Kim, Choon Gyu Kwon, Young Rok Lee, Ki Lyong Jang, Chang Won Lee</i>	
Integration And Optimisation Of EV Powertrain And Cabin Climate Thermal Management Systems	2084
<i>Martin Jones, Anthony Baxendale, David Bridge, Chris Chatham, Ian Harrop</i>	
An Experimental Study Of Automotive Bushing For Torsional Mode	2094
<i>Beom Seong Lee, Jayone Lee</i>	

Possibilities Of Car Engine Preheating Using Heat Storage Element	2102
<i>Kneba Zbigniew</i>	
The Potential Of Parametric Design Methods In Automotive Door Development.....	2110
<i>Mario Hirz, Alexander Harrich, Johannes Mayr, Patrick Rossbacher, Alexander Haselwanter</i>	
Lightweight Structures For The 2012 CO₂ Challenge	2118
<i>Jo Elgood</i>	
The Development Of A Down-Scaled Over-Actuated Vehicle Equipped With Autonomous Corner Module Functionality	2127
<i>Johannes Edren, Mats Jonasson, Trigell Stensson Annika, Lars Drugge, Jenny Jerrelind</i>	

C1-1: ADVANCED ENGINEERING TECHNOLOGIES AND TOOLS:

Road Profile Measurements In Different Markets For The Comparison Of Operating Loads For Passenger Cars And Commercial Vehicles.....	2137
<i>Hermann Kollmer, Benedikt Weiler, Ferit Kucukay</i>	
A Study Of Vehicle Energy Analysis During Warming Up Process Using VHDL-AMS Multi -Domain Simulation	2147
<i>Yasunari Kido, Kimitoshi Tsuji, Takashi Abe, Junichi Ichihara</i>	
Development Of Measuring System Of Gravity Center In Unbalanced Models.....	2156
<i>Kwan Do Hur, Jae Hyun Kong, Ki Sung Kim, Sang Don Ye, See Young Chun</i>	
Development Of An Automated Torque Matching Tool.....	2162
<i>Thomas Stone, Robert Tafner, Stelios Karagiorgis, Kieran McAleer, Umut Genc, Matthias Wellers</i>	
Multi Scale Modelling As A Tool Increasing The FE Model Potential	2170
<i>Karel Benes, Miloslav Pasek</i>	
Application Of Correlation Techniques In Four-Poster Rig Durability Tests	2177
<i>Cristobal Garcia, Javier Aran, Juan J. Garcia, Ismael Fernandez, Ruiz Salvador</i>	

D1-1: MIXED TOPICS IN SAFETY:

Monitoring Accident Rate Trends In Spanish Roads By Means Of A Bayesian Approach - Based Model.....	2192
<i>Blanca Arenas Ramirez, Francisco Aparicio Izquierdo, Camino Gonzalez Fernandez</i>	
A Look At Real World Pedestrian Crashes In The U.S.....	2207
<i>Christine Burke, Tayseer A. Aldaghlas, Margaret M. Griffen, Anne G. Rizzo</i>	
Innovative Concepts For Smart Road Restraint Systems To Provide Greater Safety For Vulnerable Users - Smart Rrs	2217
<i>Jose Manuel Barrios, Rene Molina, Arturo Davila, Juan Jose Alba</i>	
Human State Estimation During Crashes.....	2226
<i>Willemsen Dehlia, Ewout Van Der Laan, Arjan Teerhuis</i>	
Road Accident Analysis In The Nizhny Novgorod Region (Russia) And Estimation Of Safety Improving Facilities.....	2241
<i>Sergey Bagichev, Yury Molev, Sergey Bikhtashev, Andrey Bogdan, Sergey Kostin</i>	
Rider's Behaviour Modelling In Motorcycle Dynamic Simulations.....	2248
<i>Machal Manka, David Giner Moreno, Kang Jian</i>	
Simulation Environment for the Development of Predictive Safety Systems	2258
<i>Tobias Dirndorfer, Erwin Roth, Kilian VonNeumann-Cosel, Christian Weiss, Alois Knoll</i>	
On Investigation Of Traffic Safety Based On Statistical Data Regarding Vehicle Type And Road Infrastructure	2266
<i>Timea Fulep, Laszlo Nadai, Andras Rovid</i>	

E1-4: INTELLIGENT VEHICLE SYSTEMS:

Modular Electric/Electronic Architectures for future driving dynamic systems	2274
<i>Andreas Frey, Detlef Konig</i>	
Automotive Failsafe System Design For Controller Integrity.....	2282
<i>Jinseo Park, Hong Il Suh</i>	
ESCI - The Integration Of The Imu(Inertial Measurement Unit) Into Esc(Electrical Stability Control)	2290
<i>Jeehoon Kim, Jonghun Docko, Paljoo Yoon, Chungchoo Chung</i>	

Practical Experiences Of An On-Board Technical Inspection Support System For Commercial Vehicles.....	2296
<i>Szalay Zsolt, Kanya Zoltan</i>	
Driver Reaction Time to Auditory Road Safety Alert: The Effect of Age-Related Deficits and Sound Parameters.....	2305
<i>Man Ho Kim, Joonwoo Son, Yongtae Lee</i>	

F2-2: TRUCKS:

Integrated Benefits Of Passive Safety In Heavy Goods Vehicles	2311
<i>Jurgen Gugler, Florian Feist, Walter Niewohner, Sven Faßbender, Michael Hamacher</i>	
Electro Mechanical Brake System On Heavy Vehicles.....	2322
<i>Fredrik Seglo, Jacob Svendienius</i>	
The Konvoi Project - Development And Investigation Of Truck Platoons On Highways.....	2331
<i>Stefan J. Deutschle, Gunter C. Keßler, Mathias Hakenberg, Dirk Abel</i>	
Active Global Chassis Control In Urban Heavy Vehicles For Safety.....	2341
<i>Yerlan Akhmetov, Didier Remond, Lionel Maiffredy, Michael Di Loreto, Wilfrid Marquis-Favre, Virginie Harth</i>	
The Globalization of a Vehicle Standard Describing Lashing Points and Partitioning Systems for Cargo Securing in Commercial Vans.....	2351
<i>Alexander Berg, Walter Sicks, Jean-Pierre Cheynet</i>	

A1-7: IC ENGINES, GOALS:

Development Of New Algorithm For Spark Advance Calculation For Gasoline Engine With Variable Valve Actuation.....	2374
<i>F. De Cristofaro, A. Riegel, A. Guzzo, I. Montalto, S. Bova, A. Casavola</i>	
Method For Transient Analysis Of Engine Oil Circuits Using Simulation.....	2383
<i>Hiroshi Takagishi, Hiroyuki Tanaka</i>	
Effects Of The Cluster Nozzles On The Engine Performance And Soot Formation In A Direct Injection Diesel Engine: Experiments And Numerical Simulations.....	2397
<i>Vivak Luckchoura, Christopher Kupiek, Bernhard Jochim, Woo Won Hyun, Norberts Peters</i>	
Optimization Of Cylinder Heads: Resolving Tmf/Hcf Conflicts	2407
<i>Taner Gocmez, Sven Lauer</i>	

A3-3: ALTERNATIVE DRIVELINES:

Current Status And Future Issues Of Fuel Cell Vehicle Development At Nissan	2417
<i>Takayuki Arai, Hiromasa Sakai, Keigo Ikezoe, Takashi Aoyama, Masanari Yanagisawa, Hiroyuki Kanesaka</i>	
Energy Efficient Operation Of In-Wheel Motors For 4 Wheel Driven Passenger Cars.....	2427
<i>Willberger Johann, Hirz Mario</i>	
An Iterative Approach Inspired By Hill-Climbing For Energy Management Of Hybrid Electric Vehicles.....	2437
<i>Sunil Adhikari, Saman Halgamuge, Suhinthan Maheswararajah, Harry Watson</i>	
Experimental And Numerical Studies For The Ejector Used To The Proton Exchange Membrane Fuel Cell.....	2447
<i>Ho Cheol Suh, Kyu Jun Kim, Sung Wook Jang, Kyung Suk Park</i>	

B4-2: DEVELOPMENT OF VEHICLE PARTS AND SYSTEMS:

Application Of Increased Power Density For Future Diesel Engines - A Requirement For Downsized Powertrains	2452
<i>Matthias Lampert, Andreas Janssen, Andreas Kolbeck, Christof Schernus, Reiner Wohlberg, Thomas Korfer</i>	
A Study On The Vehicle Dynamics Properties Using Active Roll Control Stabilizer Bar System	2472
<i>Kangwon Lee, Younwoo Kim, Jinhee Jang</i>	
“Tomorrow’s Car”: Deakin Universities New Cross Vehicle That Combines The Best Of 2 Worlds.....	2482
<i>Frank Will</i>	

Roller Gearing And Power Transmission Technology For Automotive Applications	2500
<i>Istvan Bogar, Pal Bogar</i>	
CVT Chain Modelling: A Continuous Model Vs. A Multibody Approach.....	2510
<i>Leonardo De Novellis, Giuseppe Carbone</i>	

C1-2: ADVANCED ENGINEERING TECHNOLOGIES AND TOOLS:

Virtual Vehicle Parameterization – Validated Simulationmodels For Efficient Engineering - An Integrated Approach To Vehicle Analysis; As Engineering Service That Is Provided On The Basis Of The Availability Of Validated Simulation Models.....	2519
<i>Sven Hille, Pascal Mast</i>	
Digital Automotive Development - Digital Prototypes As Significant Contributors For Todays Vehicle Development.....	2527
<i>Armin Muller</i>	
Reconstruction Of Tyre Characteristics Based On Vehicle Dynamics Measurements With A Race Car.....	2539
<i>Andreas Kerschbaumer, Christian Prettenthaler</i>	

D4-1: PASSIVE SAFETY ISSUES:

Benefit Of Adaptive Occupant Restraint Systems With Focus On The New Us-NCAP Rating Requirements For My 2011	2549
<i>Steffen Sohr, Axel Heym</i>	
Method For The Estimation Of The Deformation Frequency Of Passenger Cars With The German-In-Depth-Accident Study (Gidas).....	2560
<i>Florian Vogt, Soren Große, Lars Hannawald</i>	
Structural Optimization To Achieve Fleet Compatibility In Real Life Accident Environment.....	2567
<i>Yuxue Qin, Volker Schindler, Alexander Eisenach, Axel Hanschke</i>	
Multi-Objective Optimization Study Of A Parametric Vehicle Bumper Subsystem Subject To Uncertainty.....	2577
<i>Laszlo Farkas, Stijn Donders, Cedric Canadas, Danny Schildermans, David Moens</i>	
Development Of An Integrated Energy Absorber Of Tube Expansion Type For Frontal Crash.....	2588
<i>Lim Jihoo</i>	
Optimum SUV Bumper System Design Considering The Pedestrian Performance	2595
<i>Changdoo Jang, Dongkyou Park</i>	

E2-1: INTELLIGENT TRAFFIC SYSTEMS:

Efficient And Safe Non-Cooperative Algorithm For Moving Along The Given Route In City Traffic.....	2606
<i>Konstantin Savenkov, Gennady Telegin</i>	
The Driver As The Basis For Objectification Of DRV* Characteristics.....	2617
<i>Roman Henze, Janine Bergholz, Ferit Kucukay</i>	

VOLUME 4:

Driver Performance Evaluation Of Forward Collision Warning System Based On V2v Cooperative Communications.....	2629
<i>Maider Larburu, Lucia Isasi, Arkaitz Urquiza, Jesus Murgotio, Dionisio Del Pozo</i>	
Sensing Technology Tire System For Road Surface Condition Judgment	2639
<i>Hiroshi Morinaga, Yasushi Hanatsuka, Yasumichi Wakao</i>	
TeleFOT: Field Operational Tests For Higher Quality Driving.....	2647
<i>Petri Mononen, Serena Fruttaldo, Roberto Montanari</i>	
An Algorithm For Road Sign Recognition Using Levenshtein Distance	2650
<i>Arai Masatoshi, Shimizu Souich, Amano Hideharu, Ajioka Yoshiaki, Konno Daisuki, Nanba Tomomichi</i>	
Cooperative Vehicular Its Safety Tests In Proving Grounds	2658
<i>Carmelo Espana, Gloria Pastor, Oscar Munoz, Javier Gozalvez, Massimo Olivieri</i>	

Usage Of A Dynamic Driving Simulator For The Development Of Driver Assistance Systems	2668
<i>David Fernandez Sanchez, Francisco Pons Sanchez, Rosa Lorenzo Blanco, Ana Paul Tomillo</i>	

H2-1: EFFICIENT PRODUCTION AND OPERATION OF VEHICLES AND COMPONENTS:

Vehicle Condition Based Roadworthiness Performance Indicator	2677
<i>Cedomir Duboka</i>	
Next Generation Supply Chain Management Based On Mechatronics	2687
<i>Wolfgang Menzel, Gloria Pellischek, Rolf Becker, Tobias Buhler, Thomas Kopp, Ismail Poslu, Andre Doring, Joachim Lentes, Holger Eckstein</i>	
Internal Corrosion Resistance Improvement Of Automotive Brazed Heater Cores With An Internal Sacrificial Layer.....	2694
<i>Silva Philippe, Christian Casenave, Maryse Philippe, Christophe Chevallier</i>	
Modularization And Unification In Design And Manufacture Of Automobiles	2703
<i>Tagir Gadelshin, Denis Gadelshin</i>	

A1-8: IC ENGINES, GOALS AND DEVELOPMENT:

A Study On The Biodiesel Fuelled Engine Cold Start Characteristics.....	2711
<i>Rodica Niculescu, Adrian Clenci, Sergiu Stroe, Victor Iorga-Siman</i>	
Testing Of Internal Combustion-Linear Generator Integrated Power System.....	2717
<i>Shi Yan, Chang Sigin</i>	
The 1.8L Engine Of The New Toyota Prius.....	2725
<i>Gerald Killmann, Osamu Harada, Kenji Watanabe, Alex Desplenter</i>	

A3-4: ALTERNATIVE DRIVELINES:

Integrated Energy & Emission Management For Hybrid Electric Vehicles.....	2730
<i>J. T. B. A. Kessels, F. P. T. Willem, W. J. Schoot, P. P. J. Van den Bosch</i>	
Development Of HV Inverter Simulation System For Optimum Design Using DOE Methodology.....	2740
<i>Kaoru Torii, Ueta Takashi, Tomohiro Suguro</i>	
Investigation Into Application Of Low Or Nonintegrated Regenerative Braking Systems For Small Passenger Cars.....	2750
<i>Gary Waite</i>	
Development And Performance Evaluation Of A Novel Internal Combustion Linear Generator Integrated Power System	2760
<i>Zhaoping Xu, Sigin Chang</i>	

B4-3: DEVELOPMENT OF VEHICLE PARTS AND SYSTEMS:

Chassis Design Process Automation Using PIDO Technology	2767
<i>Unkoo Lee, Kyung-Jin Hong, Chungseob Song, Byung-Lyul Choi, Jong-Hyouk Kim, Dong-Hoon Choi</i>	
Subjective And Objective Evaluation Of The Sense Of Space For Vehicle Occupants	2777
<i>Pitarn Hiamtoe, Uwe Kohler</i>	
A Comparative Study On AUTOSAR Solution	2785
<i>Seunghyun Roh, Ingju Jang, Eunjin Park Lee, Arjjit Mandal</i>	

C1-3: ADVANCED ENGINEERING TECHNOLOGIES AND TOOLS:

Robustness Modelling Of Automotive Electrical Systems Of Systems.....	2791
<i>Ross McMurran, Peter R. Jones</i>	
Restructuring And Optimization Of Software Architectures For Longitudinal Driver Assistance Systems	2800
<i>Dirk Ahrens, Andreas Frey, Andreas Pfeiffer, Torsten Bertram</i>	

Aspects Concerning The Dynamic Modeling And Simulation For Predicting The Passenger Car's Performances	2808
<i>Catalin Victor Zaharia, Adrian Constantin Clenci, Ion Tabacu, Georges Descombes, Pierre Podevin</i>	
A Proposal of New Detection Method For Small Size Non-Contact Torque Sensor Using Coils And Demonstration Of Effectivness By Experiment.....	2815
<i>Takahiko Tsujisawa, Kazuhiro Yamakawa, Kazuyuki Abe</i>	

D4-2: PASSIVE SAFETY ISSUES:

New Developments In Anthropomorphic Test Devices (Crash Dummies)	2822
<i>Jac Wismans</i>	
Evaluation Of Crash Performance In Steel Sheet Parts Coupled With Fracture Prediction Of Spot Welded Joint	2829
<i>Hideki Ueda, Okamura Kazuo, Eisuke Nakayama, Hiroki Fujimoto, Tohru Okada, Masato Uchihara, Manabu Kukumoto</i>	
Quasi-Static Experimental Study On Energy Absorbing Characteristic Of Expansion Tube.....	2840
<i>Choi Won Monk, Kwon Tae Su, Jung Hyun Sung</i>	
Calculative Estimation Of Passive Safety Of The Truck's Cab.....	2847
<i>Anton Tumasov, Lev Orlov, Sergey Bagichev, Eugeny Naumov, Vasily Mankovsky</i>	

E2-2: INTELLIGENT TRAFFIC SYSTEMS:

Data Fusion Strategies For Next Generation Adas: Towards Full Collision Avoidance	2853
<i>Francisco Sanchez Pons, David Sanchez Fernandez, Marga Saez Tort, Pilar Gonzalez Garcia, Ana Belen Robleda Rodriguez</i>	
Image Based Visual Servoing For Lane Keeping Assistance	2863
<i>Manuel Kracht, Jorn Malzahn, Frank Hoffmann, Torsten Bertram</i>	
Intelligent Curve Warning Function In An Advance Rider Assistance System For Powered Two Wheel Vehicles	2873
<i>Francesco Biral, Enrico Bertolazzi, Mauro Da Lio, Roberto Lot, Roberto Sartori, Andrea Borin, Giuseppe Rizzi</i>	
Autonomous Driving For A Track Guided Electro-Vehicle; Path Planning And Path Control	2887
<i>Stephan Schmidt, Roland Kasper</i>	

H2-2: EFFICIENT PRODUCTION AND OPERATION OF VEHICLES AND COMPONENTS:

Relationship Between The Mechanical Properties Of 3xxx Aluminium Alloy Coil And Fin Shaping Process	2895
<i>Claire Demarcq, Christian Casenave</i>	
Simplified Rapid-Prototyping with Automation Technology.....	2903
<i>Volker Schuermann, Rafael Leidinger, Joerg F. Wollert</i>	
Surface Defects Occurring During Superfinishing Process Of Nodular Cast Iron Components.....	2911
<i>Imre Czinege, Tamas Reti, Ferencne Csizmazia</i>	
Efficient Material Management in Production and Operation of Vehicles and Components.....	2916
<i>Thomas Leitner, Andreas Schiffleitner, Clara Ramon</i>	

A1-9: IC ENGINES, GOALS AND DEVELOPMENT:

Mathematical Model For Simulation Of A Working Cycle Of Compression-Ignition Engine Based On Experimental Measurements	2924
<i>Jacek Nowakowski, Krzysztof Brzozowski</i>	
Analysis Of Friction Models For Dynamic Simulation Of The Piston – Rings – Liner System In Internal Combustion Engines	2932
<i>Tamas Morauszki, Mathias Roman Dreyer</i>	
Comparison And Application Of Different Phenomenological Combustion Models For Turbo-Charged Si-Engines	2942
<i>Adolf Nefischer, Jens Neumann, Andrei Stanciu, Andreas Wimmer</i>	

Numerical And Experimental Investigation Of The Intake System Of A High Performance Internal Combustion Engine	2952
<i>Angelo Algieri, Carmine De Bartolo, Domenico Mendicino, Alessandra Nigro</i>	

A3-5: ALTERNATIVE DRIVELINES:

Smart Booster Controller Design For Regenerative Braking System In Hybrid Vehicles	2962
<i>DonKun Kim, WanKyo Jung, ChangHoe Goo, PhilGu Kim, Hoon Yeo, TaeJung Yeo</i>	
A Study On Performance Evaluation And Analysis Of Powertrain / Battery Cooling System For HEV	2971
<i>Hoseong Lee, Jongphil Won, Chungwon Cho, Taekkyu Lim, Daewoong Lee, Daebok Kwon, Yongchan Kim</i>	
FEV Drivetrain Optimization Tool – Integrated Approach For Drivetrain Optimization	2980
<i>Jorg Seibel, Rolf Weinowski, Andreas Sehr</i>	
Hybrid System With Toroidal IVT	2993
<i>Takashi Imanishi, Toshiro Toyoda, Eiji Inoue</i>	

B2-1: NEW MATERIALS, CONCEPTS IN BODY DESIGN:

Metal Foam dePM System Development	3001
<i>Jeongmin Lee, Kakwon Sung, Kwonoh Oh, Manho Park</i>	
Development Of Ultra High-Strength Galvannealed Steel Sheets With Tensile Strength Of 1180	3010
<i>Nobuhiro Fujita, Kenichiro Matsumura, Toshiki Nonaka, Toshimasa Tomokiyo, Takashi Miyagi</i>	
Effective Application Of Ultra High Strength Steel To Body In White	3016
<i>Mori Takeo, Tsuchida Takuji</i>	
3D CAD Parametric Design Strategies With Interlinked CAE Reference Object Creation For The Overall Vehicle Layout Optimization In The Early Automotive Concept Phase	3025
<i>Patrick Rossbacher, Mario Hirz, Wilhelm Dietrich</i>	

B4-4: DEVELOPMENT OF VEHICLE PARTS AND SYSTEMS:

Validation – Central Activity To Ensure Individual Mobility	3032
<i>Albert Albers, Matthias Behrendt, Sascha Ott</i>	
Lightweight, High Performance Disc Brake Calipers	3042
<i>Marko Tirovic, Nicolas Sergent</i>	
Observer Based Closed Loop Control Of Electro-Pneumatic Gearbox Actuator	3051
<i>Barna Szimandl, Huba Nemeth</i>	
Modeling Concept For Dimensioning Of Wheel Brake Systems	3061
<i>Mathias Haag, Hermann Winner, Ulrich Ungethum, Dirk Simon, Jaroslav Sykora</i>	

C1-4: ADVANCED ENGINEERING TECHNOLOGIES AND TOOLS:

Improvement Of E/E Architecture Design Using Functional Approach.....	3071
<i>Benoit Chretien, Frederic Holzmann, Dominique Gruyer, Sebastien Glaser, Matthias Korte, Said Mammar</i>	
Augmented Reality Seating Buck – A Validated Data Based Tool To Assess Visibility Subjectively.....	3081
<i>Lars Woyna, Stefan Gloger, Ralph Bruder, Christopher Seib</i>	
Current Trends In Post-Processing Of FEA Results In The Automotive Industry	3091
<i>Vassilios Pavlidis, Dimitrios Siskos</i>	
Parametric Design Optimisation Of A Car Seat Actuator Assembly Using A Collaborative FEA Platform.....	3101
<i>Kajtaz Mladenko, Aleksandar Subic, Monir Takla</i>	

D4-3: PASSIVE SAFETY ISSUES:

“VZN” Damper Concept Application For Passive Security Increasing.....	3110
<i>Adrian-Ioan Niculescu, Antony Jankowsky, Janusz Gardulski, Tudor Sireteanu</i>	
Frontal Energy Absorption System Applied To A CRS	3121
<i>Diez D. Gallegos, F. Liesa Mestres</i>	

Perspectives And Limitations Of Passive Safety In The Light Of An Increasing Effectiveness Of Driver Assist Systems	3127
<i>Marcus Biewendt, Michael Zatloukal, Robert Zobel</i>	
Frontal Crash Protection Results Considering The Full Frontal And Offset Frontal Crash In KNCAP	3140
<i>Jae Moon Lim, Dong Jun Lee, Gyu Hyun Kim</i>	

E2-3: INTELLIGENT TRAFFIC SYSTEMS:

Vision-Sensor Fusion In Collision Avoidance And Lane Change Assist System	3148
<i>Wing-Chi Steven Lee, Chi-Kin Lawrence Poon, Chiu-Shing Anson NG</i>	
On The Use Of Vehicular Communications For Efficient Energy Management Of Hybrid Electric Vehicles	3157
<i>Giovanni Ciccarese, Teresa Donato, Pierluigi Marra, Damiano Pacella, Cosimo Palazzo</i>	
Autonomous Driving With Car-To-Car Communication	3167
<i>Tae-Kyung Moon, Hyuck-Min Na, Jun-Nam Oh, Pal-Joo Yoon</i>	

G1-1: VEHICLE STANDARDS, REGULATIONS, LEGISLATION:

Identification Of Real Vehicle Operating Conditions.....	3175
<i>Jacek Kropiwnicki</i>	
Labelling And Standards For Light Duty Vehicles In Brazil – Improving Energy Efficiency And Reducing CO₂.....	3185
<i>Gabriel Murgel Branco, Fabio Cardinale Branco, Alexandre Novgorodcev, Ricardo Martin, Claudio Guimaraes</i>	
Periodic Technical Inspection Of Vehicles, Latest Developments In The Inspection Of Brake Systems. Results Of The Cita Working Group 5 On Brake Testing.....	3200
<i>Ignacio Lafuente</i>	
Latest Developments On Homologation Systems In Asian Countries (Korea, China And India)	3208
<i>Lluis Sans, Hee Koo Lee, Kedar Kshirsagar, Steve Yun, Nickel Ni</i>	

B2-2: NEW MATERIALS, CONCEPTS IN BODY DESIGN:

Structural Design Method Of A Control Arm With Considering Of Strength	3220
<i>Jong-kyu Kim, Hwan-jung Son, Hyeong seok Lee, Young-Jun Kim, Sung-Hwan Kim, Young-Chul Park, Kwon-Hee Lee</i>	
A Parametric Structure For The Evaluation Of Vehicle Concepts At A Very Early Stage Of Concept Draft.....	3231
<i>Alexander Prinz, Thomas Gansicke</i>	
The Application Of Structural Optimization Technology To The Design Of Plastic Parts.....	3240
<i>Ayumi Sugiyama, Yoshio Sugimoto</i>	

C1-5: ADVANCED ENGINEERING TECHNOLOGIES AND TOOLS:

A Racing Car Setup Evaluation Support System Based On Nonlinear Model Predictive Control.....	3248
<i>Antonini Pierluigi, Luca Fulimeni, Sauro Longhi, Andrea Monteriu</i>	
An Experimental Evaluation Of The Thermal Effects On Engine Valve Model.....	3258
<i>Adrien Piton, David Chalet, Pascal Chesse</i>	
Development Of Virtual Sunroof Buffeting Test Process Using DFSS Approach.....	3267
<i>Seong Ryong Shin, Kang Duck Ih, Jihyuk Kim Cho, Sang Moo</i>	

D1-2: MIXED TOPICS IN SAFETY:

Safety Strategies For Small Cars.....	3276
<i>Thomas Schwarz, Ulrich Widmann, Martin Neff</i>	
Challenges In Design For Safety Of Small Cars.....	3291
<i>Marica Paurevic, Karl-Heinz Baumann, Michael Muckner</i>	

Polymeric-Based Solutions For Safety Improvement In Small Vehicles.....	3299
<i>Padraig Naughton, Alexander Droste</i>	

G1-2: VEHICLE STANDARDS, REGULATIONS, LEGISLATION:

A Joint Suppliers Approach For Standardized Adas Test Catalogues	3309
<i>Oliver Scherf, Stefan Bischoff, Christian Hermann, Hendrik Kurzawa, Uwe Kuhnau, Thomas Schuler</i>	
Technological Trends In The Standardisation Of Model-Based Software Development	3318
<i>Jens Zimmerman, Daniel Woste</i>	
LNG Applications And Standards Development In Europe	3328
<i>Jose Burgos</i>	

ENVIRONMENTALLY FRIENDLY VEHICLES:

Exhaust Emission Results From Light Duty Diesel In A Road Tests	3338
<i>Jerzy Merkisz, Jacek Pielecha, Wojciech Gis</i>	
Cylinder Surface Laser Treatment In Diesel Engines As A Way To Make Road Transport More Environmentally Friendly	3348
<i>J. Merkisz, M. Bajerlein, A. Susecki</i>	
Aero-Engine Emission Testing Under Real Operating Conditions Of A Small Aircraft.....	3354
<i>Jerzy Merkisz, Jaroslaw Markowski, Babiak Maciej</i>	
The Technical And Socio-Economic Feasibility Of Alternate Energy Vehicle Systems: Examination Of Past, Present & Future Considerations	3362
<i>Kenneth Szczalski, Lanny Mullins, Todd Szczalski, Mark Pozzi</i>	
Research Regarding The Development Of A Plug-In Hybrid Electric Vehicle.....	3371
<i>Danut Gabriel Marinescu, Stefan Tabacu</i>	
Research On The Diffusion Characteristics Of The Hydrogen Gas For The Hydrogen Fuel Cell Vehicle In The Closed Space.....	3381
<i>Hyungjin Chang, Gyu Hyun Kim, Geejung Yong, Jae Moon Lim</i>	
Periodically Regenerating Diesel Particulate Filter With Hydrogen Addition: Towards A Fuel Reformer – Diesel Engine Aftertreatment System.....	3387
<i>C. Yang, K. Theinnoi, S. Hemmings, A. Megaritis, A. Tsolakis, H. Zhao</i>	
Analysis Of The Exhaust Emissions And Performance Of A Modern Vehicle Fuelled With Petrol And Cng In Turn	3395
<i>Piotr Bielaczyc, Andrzej Szczothka, Michalina Wojnarowicz</i>	
The Effect Of Biodiesel Blends With Differing Rme Content On Exhaust Emissions From A Light Duty Vehicle With Diesel Engine Compared To Standard Diesel Fuel And Pure RME	3404
<i>Piotr Bielaczyc, Andrzej Szczothka, Gizynski Piotr, Bedyk Ireneusz</i>	
Discrete Vva-Based Model Of Single Cylinder HCCI Engine: Effects Of Transition In Engine Speed.....	3416
<i>Varun Tandra, Nilabh Srivastava, Ahmed Soliman</i>	

VEHICLE DESIGN AND DEVELOPMENT:

Fuel Spray Parameter Analysis For Different Common-Rail Injectors.....	3426
<i>Krzysztof Wislocki, Ireneusz Pielecha, Jakub Czajka, Dmitrij Maslenikov</i>	
A Study on the Development of Automotive Front Lower Arm by Using Hybrid Manufacturing Process	3434
<i>Sang-Woo So, Jae-Chul Kim, Hyun-Tae Hwang, Dong-Ok Kim, Jong-Hyun Lee</i>	
The Parametric Study Of The Development Of Magnesium Seat Frame For Passenger Vehicle By Design Of Experiments Method	3441
<i>Kim Kiseong, Han Wanhee, Hwang Beomjin, Youn Younghan</i>	
Vehicular Management System.....	3449
<i>Suk-Hyun Seo, Jin-Ho Kim, Sung-Ho Hwang, Key Ho Kwon, Jae Wook Jeon</i>	
An Evaluation Of The FlexRay-CAN Gateway-Embedded System In The Ev Test Bench	3459
<i>Suk-Hyun Seo, Yong-Han Jeon, Sung-Jin Cho, Sung-Ho Hwang, Key Ho Kwon, Jae Wook Jeon</i>	
Comparison Of Two Types Of OSEK Network Management	3467
<i>Suk-Hyun Seo, Jin-Ho Kim, Sung-Ho Hwang, Key Ho Kwon, Jae Wook Jeon</i>	

VOLUME 5:

TEST, SIMULATION AND CALCULATION METHODS OF VEHICLES AND COMPONENTS:

Design And Experimental Evaluation Of Predictive Engine Air-Ratio Control Based On Online Neural Network.....	3476
<i>Hang Cheong Wong, Pak Kin Wong</i>	
The Human Thermal Comfort Evaluation Inside The Passenger Compartment	3484
<i>Mariana Ivanescu, Catalin Neacsu, Stefan Tabacu, Ion Tabacu</i>	
Thermo-Oxidative Degradation Analysis Of A Carbon Black Compounded EPDM rubber Hose For Automotive Radiator.....	3497
<i>Seung-Bum Kwak, Nak-Sam Choi</i>	
On-Board Diagnostics Of Combustion In Diesel Engines Of Non-Road Vehicles With The Use Of JTFA Vibration Signal Analyses	3506
<i>Jerzy Merkisz, Marek Waligorski, Maciej Bajerlein</i>	
The Investigations Into Vehicle Exhaust Emissions With The Use Of PEMS.....	3517
<i>Wojciech Gis, Jerzy Merkisz, Jacek Pielecha</i>	
Evaluation of Quality of The System for Control Of Mixture Composition In Si Engine By The Method Of Dynamic Simulation.....	3526
<i>Józef Mita</i>	
Method And Tool Of Human Sensation Modeling For Comfort Evaluation Of Nvh Phenomenon On The Example Of Gear Rattle	3536
<i>Albert Albers, Sarawut Lerspalungsanti</i>	
Measurement and Analysis of FlexRay Synchronization Performance	3546
<i>Kim Jin Ho, Seo Suk-Hyun, Yoon Seung-Hyun, Kwon Key Ho, Jeon Jae Wook, Hwang Sung-Ho</i>	
Compensating Inconsistency of the Retransmission Data in CAN Network (Withdrawn)	3555
<i>Seung-Ki Min</i>	
Stationary And Simulating Researches With Input Sinus Signal On Turbine's Shaft Of Hydrokinetic Torque Converter Zm130	3556
<i>Zbigniew Pawelski, Marek Woźniak, Tomasz Palczynski</i>	
The Information Content Of The Automatic Gearboxes Of Buses Of The Vehicle During An Operation.....	3565
<i>Ferenc Szauter, Vince Nagy, Zoltan Varga</i>	

SAFETY ON ROADS:

Assignment Process Of The Emergency Services In The E-Call Project	3567
<i>D. Gallegos Diez, F. Liesa Mestres, M. Mateo Doll</i>	
Evaluation Of Systems For Active Vehicle Safety Regarding Their Influence On Safety Particularly For Senior Driver.....	3573
<i>Q. Huang, F. Christen, M. Haberstroh, M. Klingender</i>	
Methodology To Test The Steering System Of An.....	3586
<i>D. Garcia-Pozuelo, V. Diaz, M. J. L. Boada</i>	
Parameters That Influence The Measurement With A Sideslip Tester	3596
<i>Manuel Perez-Rey, Daniel Garcia-Pozuelo, Maria Jesus L. Boada, Vicente Diaz</i>	
Establishment Of Side Pole Impact Test Procedures In KNCAP.....	3605
<i>Jae Moon Lim, Hyungjin Chang, Gyu Hyun Kim, Taehan Song</i>	
Research On Incident Analysis Using Drive Recorder Part4: Analysis On Driving Behavior Based On Near-Miss Incident Data While Crossing Non-Signalized Intersection	3611
<i>Motoki Shino, Takuya Abiru, Minoru Kamata, Masao Nagai, Yohei Michitsuji, Katsumi Moro</i>	
Reconstruction Analysis Of Extraordinary Vehicle Accidents Utilizing 3-D Visual Effects	3621
<i>Seung-Bum Park, Inhuwan Han</i>	
Analysis Of Geometric Variables Of The Bumper In The Pedestrian Protection.....	3627
<i>D. Gallegos Diez, F. Liesa Mestres</i>	

INTELLIGENT SYSTEMS IN ROAD TRAFFIC

Classification Of Driving Skills Based On Machine Learning	3635
<i>Naiwala P. Chandrasiri, Kazunari Nawa, Ichiro Kageyama</i>	
A Study On The Motion Control of The 6x6 Electric Vehicle With Skid Steering Part 2: Autonomous Navigation	3645
<i>Dong-Hyung Kim, Chang-Jun Kim, Soon-Woong Hwang, Ashfaq Ali Mian, Young-Ryul Kim, Chang-Soo Han</i>	
Driver Specific ACC Speed Profile For Curved Roads	3655
<i>Dezhao Zhang, Qing Xiao, Meng Lu, Jianqiang Wang</i>	
Design Of A Reconfigurable Global Chassis Control	3665
<i>Peter Gaspar, Zoltan Szabo, Jozesef Bokor, Olivier Sename, Lue Dugard</i>	

BUSES, TRUCKS AND HEAVY VEHICLES:

Dimensional Analysis Of A Bus Structure.....	3672
<i>V. Diaz, A. Gauchia, E. Olmaeda, M. J. L. Boada, B. L. Boada</i>	
Concept Of A Lightweight Heavy Truck Frame For Increased Transportation Efficiency	3680
<i>Martin Winter, Klaus Puchner, Klaus Prenninger, Gregor Schwarz</i>	

EFFICIENT PRODUCTION AND OPERATION OF VEHICLES AND COMPONENTS:

The FlexRay Diagnosis System on the Basis of ARM	3685
<i>Seung-Hyun Yoon, Suk-Hyun Seo, Jin-Ho Kim, Key Ho Kwon, Jae Wook Jeon</i>	

A2: CONSUMPTION AND EMISSION REDUCTION:

Multiaxis All-Wheel Drive Hybrid Vehicle Mathematical Model And Simulation.....	3694
<i>Cheranov Svyatoslav</i>	
Spark-Ignition Stability of Natural-Gas Jets with Impingement on Cavity Wall	3702
<i>Senoo Takashi, Sasaki Masanori, Shioji Masahiro</i>	
Power Control Algorithm For A High Mobility Hybrid Electric Vehicle.....	3711
<i>Youngkwan Ko, Hyunsup Kim, Yusueuk Jung, Soonkyu Jeong, Hyengchel Lee</i>	
Study On Development Of Compressed Air Car For A Practical Use	3721
<i>Yuki Kato, Kiochi A. Hayashi, Eisuke Yamada</i>	
Increasing The Efficiency Of An Experimental Solar Energy Driven Vehicle.....	3731
<i>Illes Lorinzez, Istvan Szechenyi</i>	
Alternative Engines - Advantages and Drawbacks for the Environment	3739
<i>Marinescu Gabriel Catalin, Otata Victor Oana</i>	
Self-Reported Seat Discomfort Among Dutch Commercial Truck Drivers.....	3743
<i>CheeFai Tan, Matthias Rauterberg, Wei Chen</i>	
A Study On The Optimal Brake Force Distribution Of A High-Speed Railroad.....	3749
<i>Sungchul Kim, Kiyeol Jang, Jeeho Lee, Hyeongcheol Lee</i>	

A2: CONSUMPTION AND EMISSION REDUCTION:

Modeling The Combustion Of Light Alcohols In Si Engines: A Preliminary Study	3757
<i>Jeroen Vancoillie, Sebastian Verhelst</i>	
Sliding Mode Controller Design For Optimal Slip Control Of Electric Vehicles Based On Fuzzy Vehicle Velocity Estimation Logic.....	3769
<i>Nam Kanghyun, Hori Yoichi</i>	
Evaluation Of Electric Driveline System With Modelling And Simulation	3779
<i>Laszlo Farkas</i>	
Control-Oriented Modeling Of Three-Way Catalytic Converters Using Chemical Equilibrium	3786
<i>Pascal Kiwic, Christopher Onder, Lino Guzzella</i>	

B4: DEVELOPMENT OF VEHICLE PARTS AND SYSTEMS:

An Intelligent Wiring System Of The Electric Vehicle.....	3794
<i>Heikki Hakala</i>	
Surface Morphing Method For Manifold Shape Optimisation.....	3802
<i>Arpad Veress, Tibor Gallina, Attila Felfoldi</i>	
Integrated Design And Simulation Methods In Conceptual Suspension Development	3812
<i>Bohm David Ferenc, Hirz Mario</i>	
Intellige Automotive Lighting Distribution As A Comfort And Safety Feature? Innovations For Today A Tomorrow.....	3821
<i>Heiko Marko, Christoph Stiller, Christian Koelen</i>	
Systematic Height Control Of An Air Suspension System	3830
<i>Hyunsup Kim, Youngil Kim, Hyeongcheol Kim</i>	
Dual-Hybrid Lubrication System.....	3837
<i>Sanjaat Jain</i>	
Investigation Of Novel Linkage Mechanism For Antilock Effect In Cam Actuated Drum Brakes.....	3847
<i>Shashwat Kushwaha, Prateek Chavan, Mihir Saojl</i>	

B4: DEVELOPMENT OF VEHICLE PARTS AND SYSTEMS:

Easy Access And Manoeuvring Vehicle	3854
<i>Sanjaat Jain</i>	
Development And Production Of An Advanced Composite Monocoque Structure For A Solar Powered Race Vehicle	3861
<i>Diederik Van Tricht, Brecht Van Hooreweder, Guido Ceulemans</i>	
Optimization Of Sandwich Panel Structure And Lay-Up Regarding Hic Minimalization	3870
<i>Michal Vasicek</i>	
Car Design As A New Conceptual Solution And CFD-Analysis In Purpose Of Improving Aerodynamics	3877
<i>Darko Damjanovic, Drazan Kozak, Zeljko Ivandic, Mato Kokanovic</i>	
Development Of An Intelligent Air-Cushion System For A Swamp Tracked Vehicle.....	3886
<i>Altab Hossain, Ataur Rahman, A. K. M. Mohiuddin, Yulfian Aminanda, Muhibdin Arifin</i>	
Development Of A Monoblock Titanium Steering Wheel For A Solar Powered Race Vehicle Using.....	3895
<i>Thomas Gielis, Mario Fleurinck, Jos Bormans, Brecht Van Hooreweder</i>	

E1: INTELLIGENT VEHICLE SYSTEMS:

IYashi Arousal System For Driver Using Automatic Facial Expression Recognition	3905
<i>Toshiki Kambayashi, Luis A. Diago, Tetsuko Kitaoka, Ichiro Hagiwara</i>	
DS-UWB Packet Structure For The Hybrid Of Communication-Base-Ranging And Radar	3913
<i>Sumito Nishikawa, Ryuuji Kohno</i>	
Intelligent Vehicle Control Based On Predictive Urban Traffic Information	3921
<i>Philipp Schuricht, Bernard Baeker</i>	
Integrated Safety Speed Model For Curved Roads	3929
<i>Xiaolei Chen, Meng Lu, Dezhao Zhang, Ruijuan Chi, Jianqiang Wang</i>	
A New Guidance Method For The Collision Avoidance Of Intelligent Road Vehicles	3936
<i>Mohammad Behroozi, Behrooz Mashadi, Nima Najafi, Behzad Najafi, Samaneh Arabi</i>	
Mymosa - Motorcycle Accident Simulation In LMS Virtual.Lab	3944
<i>Leonard Ciubotaru, Nicola Cofelice, David Moreno Giner, Machal Manka, Jian Kang</i>	
Numerical Simulation Of A Motorcycle-Rider System With Laser Sensor For Collision Avoidance	3954
<i>T. Alessandro, K. Jian</i>	
Two Degree Of Freedom Yaw Rate Control Based On Cornering Stiffness Using Planetary Gear Steering System.....	3962
<i>Ryo Minaki, Yoichi Hori</i>	

C3: VEHICLE PERFORMANCE TESTS AND SIMULATION:

Effects Of Varying Moisture Content And Settlement On Internal Friction, Load Capacity And Cohesion In Loam Soil	3968
<i>Laszlo Mathe, Gyorgy Pillinger, Peter Kiss</i>	
A Physical 0D Diesel Combustion Model Using Tabulated Chemistry With Presumed Probability Density Function Approach: For Engine Pre-Mapping	3973
<i>Nicolas Bordet, Christian Caillol, Pascal Higelin</i>	
Modelling And Analysis Of The Electro-Hydraulic And Driveline Control Of A Dual Clutch Transmission	3984
<i>Rashad Mustafa, Tobias Kassel, Gunther Alvermann, Ferit Kucukay</i>	
Dynamic Analysis Of The Commercial Vehicles With Leaf Springs.....	3994
<i>D. S. Kang, C. K. Song, M. G. Kong, Y. I. Shin, J. K. Kim, S. H. Shin, B. K. Cho, J. W. Lee</i>	
Combined Method For The Simulation Of Gear Whine Effects	4002
<i>Gerrit Knabe, Ferit Kucukay</i>	
Self-Energizing Clutch Actuator System: Basic Concept And Design	4009
<i>Jinsung Kim, Seibum B. Choi</i>	
Redesign Of The Intake Cams Of A Formula Student Racing Car.....	4017
<i>Vass Sandor</i>	
A Numerical And Experimental Study Of The Factors That Influence Heat Partitioning In Disc Brakes	4025
<i>Andreas Loizou, Hong-Sheng Qi, Andrew J. Day</i>	
Development Of An AI-Based Model To Determine Vehicle Tire Design Configuration	4034
<i>Oluremi Olatunbosun, Xiaoguang Yang, Mohammad Behroozi, Daniel Garcia-Pozuelo</i>	

A1: IC ENGINES, GOALS AND DEVELOPMENT:

Effect Of Fuel Temperature On Spray Properties Using Local-Contact Microwave-Heating Injector	4042
<i>Thi Thu Huong Tran, Hiroshi Enomoto, Motoki Kushita, Takaaki Sakitsu</i>	
Hybrid Systems Controller Design Methodology.....	4049
<i>Michal Pluska, David Sinclair</i>	
Roads To Respect - Cyprus Case Study.....	4059
<i>Marios Philippou</i>	
Challenges Of The Product Management Of Military Vehicles	4068
<i>Tina Barth</i>	

ADDITIONAL PAPERS:

Effect Of Injector Spray Angle To The Performance Of A Compressed Natural Gas Direct Injection Engine	4074
<i>Rashid A. Aziz Firmansyah, Shahzad H. Raja</i>	
Heat Recovery System For Continuous Regeneration Of Diesel Particle Filter.....	4087
<i>Wladyslaw Mitianiec</i>	
Application Of Dioxane In Diesel Engine As Additive With Ethanol And As Alternate Fuel - A Comparative Analysis	4097
<i>Sundar Raj Chockalingam, S. Arul, S. Sendilvelan</i>	
Developed Technologies Of The New Rotary Engine With Modern Two-Stroke Cycle (Annular Rotary Engine).....	4111
<i>Abolfazl Khatib, Hussein Ghomashi</i>	
Vehicle Valve Regulated Lead Acid Battery Modeling And Fault Diagnosis	4124
<i>Nabil Hammad</i>	
Study Of The Automotive Wings With Coanda Effect.....	4134
<i>Angel Huminic, Gabriela Huminic</i>	
Vehicles Aerodynamics While Crossing Each Other On Road Based Computational Fluid Dynamics.....	4144
<i>Yihng-Chao Zhang, Zhe Zhang, Jie LI</i>	
Multipurpose Four-Axle Vehicle With Electric Transmission.....	4154
<i>Nikolay Kulakov, Syatoslav Cheranov</i>	
Isolating Hydraulic, Mechanical And Aerodynamic Noise Of Vehicle Air Condition Systems	4158
<i>Nabil Hammad</i>	

A Comparison Study Of The Energy Absorption Performance Of Square AA6061-T6 Aluminum Extrusions With Two Formats Of Discontinuities	4168
<i>Joy Pathak</i>	
Real-Time Modeling For Gear Change Control Strategy Research.....	4177
<i>Anatoly Filimovov, Victor Kusyak</i>	
Kart Steering System Optimizing And Simulation	4184
<i>Arghavan Alireza, Kheirkhahan Mohammadjavad, Hemmati Mehran</i>	
Input Torque Shaping For Driveline Nvh Improvement And Torque Profile Approximation Problem With Combustion Pressure.....	4191
<i>Kazuhide Togai, Kazuo Kido, Hiroki Yamaura</i>	
Off Road Mobility Performance Evaluation In ETAS	4200
<i>Michel Grima</i>	
Nonlinear Friction Compensation Using Dynamic Learning Recurrent Neural Network Control Friction Estimator	4209
<i>Yeo Dae Yeon, Han Seon Ik, Kim Sae Han, Kwon Soon Lee</i>	
Analysis And Simulation On Impact Collision Of Multipurpose Vehicle (MPV) AS NGV	4216
<i>Mohd Zaid Akop, Mohd Amirul Awang, Rafidah Hasan, Ridzuan Muhd, Modh Afzanizam Nurfaizey Abdul Hamid</i>	
Development Of The Control System Of A New Crash Energy Absorption Equipment Combines Active And Passive Safety	4217
<i>Libo Cao, Jiang Binhuai, Tang Mingfu, Bai Zhaonghao, Huan Chen</i>	
Impact Assessment Of Advanced Driver Assistance Systems Within The Large Scale Field Test “euroFOT”	4225
<i>Mohamed Benminoun</i>	
New Control Algorithms To Improve Yaw Stability Using Electric Power Steering (EPS) System.....	4233
<i>Sang-Jin Ko, Se-Wook Oh, Eun-Kyung Gu, Kwang-Soo Nam</i>	
A Haptic Pedal As A Suitable Alert For A Frontal Collision Warning System And A Complement For A Drowsy Detection System	4241
<i>Alan Montesi, Jordi Jornet, Marc Dominguis, Jordi Tenas, Helios De Rosario</i>	
Evolution Of Driver Car Injuries In Frontal Impacts Considering The Improvements Of Passive Safety Technologies	4250
<i>Maxime Labrousse, Thierry Hermitte, Nicolas Bertholon, Veronique Herve, Anne Guillaume</i>	
A Quick And Economic Methodology To Validate Thermoplastic Energy Absorbers For Vehicle Bumpers	4259
<i>Dinesh Mana, Dhanendra Nagwanshi, Somasekhar Bobba, Perter Haug</i>	
A Hybrid Solitary Beam To Meet New ‘Bumper Structural Test Protocols’ Of Rear	4268
<i>Dhanendra Nagwanshi, Peter Haug</i>	
ITS Test Bed: Approaching A Reference Architecture	4277
<i>Dirk Beckmann, Ulf Noyer, Frank Koster</i>	
Distributed Urban Road Traffic Control With Vehicle Priority Management	4285
<i>Tamas Tettamanti, Istvan Varga</i>	
Achieving Low Weight And Low Cost Body For A New Coach Type Using Simulation And Previous Lessons Learned	4293
<i>Ahmet Avci, Bertan Bayram, Cagri Kaya</i>	
Accessory Loads On A Parallel Electric Hybrid City Bus.....	4302
<i>Jeffrey Campbell, David Kittelson</i>	
Actual Powertrain Development Trends And Their Effects On Future Production Demands.....	4312
<i>Wolfgang Hatz, Thomas Faustmann, Wolfgang Demmelbauer-Ebner</i>	
Author Index	