

Programme of CAR2017



2017

www.car2017.ro

Patronage of **FISITA**
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SOCIETY OF AUTOMOTIVE ENGINEERS OF ROMANIA
SIAR
SOCIETATEA INGINERILOR DE AUTOMOBILE DIN ROMANIA
www.siar.ro

The International Congress of Automotive and Road Transport Engineering



www.upit.ro

University of Pitești, Romania
8-10 November 2017

Departamentul



Autovehicule și Transporturi



Poienari Fortress (Prince Dracula's home)



Vidraru Dam



Transfagarasan - „world's best road trip” according to Top Gear



University of Pitești is a state multi-disciplinary university, founded in 1962. It now has over 10.000 students and approximately 500 teaching and administrative staff. It consists of 6 different faculties offering Bachelor, Master and Doctor Diplomas (www.upit.ro). The areas in which our university is active and delivers services are: education & training; scientific & applicative research; guidance & counselling; professional orientation; international cooperation in different fields; publishing activities.



Dumitru CHIRLEȘAN
Rector

Departamentul



Autovehicule și Transporturi

Department Automobiles and Transport of our university is part of **Faculty of Mechanics and Technology** and was founded in 1969. Since then, it has been actively participating in the development of the Romanian technical higher education. Its prestige is owed to the almost 50-year-long teaching activity and scientific research of competent department staff who, together with its graduates, have managed to make the existence of such a department in University of Pitești well-known. Currently, the activity of the Department Automobiles and Transport is conducted on all the three levels of academic training (Bachelor or Licence, Master and Doctorate).

The primordial mission of the department is to offer high quality education with the purpose of developing the students' specific technical knowledge, intellectual capacities, and moral character, as essential premises for the creation of a professional elite. At the same time, the Department Automobiles and Transport takes the responsibility to conduct high-level scientific research in order to disseminate authentic engineering culture, as a condition for social and economic progress.

Today the ambition of the Department Automobiles and Transport is to continue its tradition of excellence in the Automotive and Transport Engineering field and to succeed in establishing itself as one of the leading Romanian academic department in the field of sustainable mobility.

University of Pitești



Ideii



Oameni



Timp



Țintă



www.siar.ro

The Society of Automotive Engineers of Romania (Societatea Inginerilor de Automobile din România) was founded in 1990 and is the professional organization of Automotive and Transport Engineers. SIAR is an active member of FISITA (International Federation of Automotive Engineers Societies).

SIAR motto

*„Cunoaștere și dezvoltare prin colaborare!”
„Knowledge and development through cooperation”*

VISION

*Assuring an institutional frame favorable to initiation and development of cooperation between specialists working in the field of Automotive and Transport Engineering.
Development through tripartite cooperation: State – Industry - Academia*

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www.fisita.com

FISITA (Fédération Internationale des Sociétés d'Ingénieurs des Techniques de l'Automobile) was founded in Paris in 1948 and is the umbrella organisation for the national automotive societies around the world - controlled by the engineering profession and supported by the global automotive industry.

FISITA motto

“Progressons en Commun – Together we Progress”

VISION

Bring together engineers from across the globe to share ideas and advance the technological development of the automobile. FISITA's goal is to provide a forum for dialogue amongst these engineers

FOREWORD

The Congress of Automotive and Road Transport Engineering (in short, CAR) is a traditional scientific event initiated by University of Pitești, Romania in 1978. CAR is at its 11th edition in 2017 and is part of the series of similar annual scientific events organized by Society of Automotive Engineers of Romania (SIAR) and various Romanian universities with interests in Automotive and Transport Engineering. Since its 7th edition from 1997, CAR gained the patronage of FISITA (Fédération Internationale des Sociétés d'Ingénieurs des Techniques de l'Automobile) and EAEC (European Automotive Engineers Cooperation).

Considering that now, car manufacturers are redefining themselves as mobility providers and adding the fact that currently, more than ever, there is an obvious need to strike a balance between natural increase of road mobility and environmental protection, SIAR's decision concerning the general theme of CAR2017 was ***Mobility Engineering and Environment***.

Moreover, the motto of the Congress (***Academia, Industry and Government: together for automotive and transport engineering development***) is an indication of SIAR's belief that there is a need for meetings and discussions about the current and future challenges of the automotive and transport world in order to find the best solutions. In other words, we are convinced that the challenges of the future can only be overcome if these tripartite discussions occur permanently.

The papers of CAR2017 were selected by the Scientific Committee amongst the almost 160 technical papers proposed to be presented at the Congress. The authors of these articles are experts from research, industry and universities. Their papers are covering the latest topics in the field of mobility engineering such as: fuel economy and environment, materials and technologies, automotive safety, traffic and road transport systems, advanced engineering methods, advanced powertrains and hybrid and electric drives.

Therefore, I hope these papers will generate fruitful discussions about a very exciting topic: the automotive and road transport engineering in the light of the future challenges.



*Adrian CLENCI,
Chairman of CAR2017,
Director of Department Automobiles and Transport – University of Pitești,
President of SIAR*



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SHORT HISTORY of CAR Congress

First of all, CAR is an acronym coming from the Romanian expression “**Congres de Autovehicule Rutiere**”, meaning Congress of Passenger Cars. In Romania, “**Autovehicule Rutiere**” is one of the most known academic specialization, attracting each year many students in the 12 universities dealing with Automotive Engineering.

CAR Congress is a scientific event initiated by University of Pitești in 1978. The city of Pitești is one of the main pillars of the national automotive industry, Dacia automotive plant created in 1966 being located at 15 km away from the city. Therefore, CAR Congress aimed and still aims to bring together specialists from academia and industry to present their achievements and establish opportunities for collaboration in the field of automotive and transport engineering. After the birth of SIAR (in 1990), CAR Congress became one of SIAR's scientific events.

Below, there is a brief statistic of the past CAR Congress.

CAR edition	Type of event	Number of participants	Number of papers	Patronage
1978, 6-8 June	National	83	49	-
1982, 14-16 October		121	91	-
1985, 17-19 October		124	102	-
1989, 26-28 October		131	118	-
1992, 5-7 November	International	178	127	Patronage of SIAR
1994 3-5 November		165	121	
1997, 6-8 November		189	129	Patronage of SIAR, FISITA and EAEC
2000, 26-28 October		218	136	
2005, 2-4 November		242	152	
2011, 2-4 November		278	170	
2017, 8-10 November		-	128	

As other SIAR scientific events, CAR Congress is an opportunity for delegates to:

- *update skills and knowledge by attending focused technical sessions*
- *gain insights into the automotive industry*
- *network with potential new partners, clients and suppliers*
- *view the latest technology products and services in the commercial exhibition*



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Radu DINESCU – General Secretary of UNTRR (National Union of Road Transporters from Romania)
Benone COSTEA – Director, Magic Engineering
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Dumitru CHIRLEȘAN – Rector of the University of Pitești

SCIENTIFIC and TECHNICAL COMMITTEE

President of the Scientific and Technical Committee:

Professor emeritus **Ion TABACU**, University of Pitești, Romania

Members:

Cristian ANDREESCU	University "Politehnica" of Bucharest - Romania Professor
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Corina SANDU	Virginia Tech, U.S.A. Professor

Tom SAVU	University "Politehnica" of Bucharest - Romania Professor
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Bogdan VARGA	Technical University of Cluj-Napoca - Romania Professor

ORGANIZING COMMITTEE

Congress Chairman

Adrian CLENCI	Director of Department Automobiles and Transport, University of Pitești, Romania and SIAR President
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Members

Minu MITREA	General Secretary of SIAR
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Alexandru BOROIU	Professor, University of Pitești, Department Automobiles and Transport
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Nadia BELU	Lecturer, University of Pitești, Department Manufacturing and Industrial Management
Ana GAVRILUȚĂ	Lecturer, University of Pitești, Department Manufacturing and Industrial Management

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The Organizing Committee would like to thank the following companies for their support:

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CONGRESS PROGRAMME at a GLANCE

TUESDAY, 7th of November

18h00 – Welcoming Cocktail (*University of Pitești, Research Center "Automotive Engineering", str. Doaga nr. 11*)

WEDNESDAY, 8th of November

 (*University of Pitești, Central building, str. Tg. din Vale nr. 1*)

07h45 – 09h00: Registration

09h15 – 10h00: Opening speeches (*Open Room from ground floor*)

- Chairman of the Congress and SIAR President – Adrian CLENCI
- Rector of University of Pitești – Dumitru CHIRLEȘAN
- FISITA's representative – Gunter HOHL
- Minister of Research and Innovation, Romanian Government – Lucian GEORGESCU
- General Manager of Groupe Renault Roumanie – Yves CARACATZANIS
- Director of AVL Romania – Stefan KANYA
- General Manager of FEV Romania – Rainer THIELE
- ACAROM President – Gabriel SICOE
- General Manager of RAR – Adrian DINCĂ
- General Secretary of UNTRR – Radu DINESCU
- MAGIC Engineering – Benone COSTEA

10h00 – 10h30: Coffee break

10h30 – 11h15: Plenary Session, 1st part (*Open Room from ground floor*)

- Nicolas SCHOTTEY, Deputy Program Director for Battery and Infrastructures for the Electric Vehicle, Renault
The future of electric vehicle is today
- Hubert FRIEDL, Product Manager Gasoline Engines at AVL List, Austria,
Trends in gasoline powertrain technology for high performance and low emission

11h15 – 11h30: Coffee break

11h30 – 12h15: Plenary Session, 2nd part (*Open Room from ground floor*)

- Cristoph MENNE, Director Vehicle Application, Diesel Powertrain – Europe, FEV Group, Germany
Clean air and high efficiency – the diesel engine of the upcoming decade
- Marcus BOEK, Horiba, Germany
The continuous rise of real driving emissions

12h30 – 14h30: Lunch (*Restaurant Hotel Victoria*)

15h00 – 18h00: Simultaneous activities - Oral presentations on sections (*Rooms 1-7 from first floor*)

17h45 – 19h45: SIAR Meeting + Meeting of the Academic Alliance for Automotive and Transport Engineering (ALIAT) (*Library Room*)

20h00: Dinner (*Restaurant Hotel Victoria*)

THURSDAY, 9th of November

 (*University of Pitești, Central building, str. Tg. din Vale nr. 1*)

08h00 – 11h45: SIAR Student National Contests:

Vehicle Dynamics (Room T309) & Automotive Computer Aided Design (Library Room)

08h30 – 09h30: Panel discussions#1, Hybrid Electric Vehicles & Battery Electric Vehicles (*Rectorate Room*)
by Dănuț Marinescu (UPIT) & Nicolas Schottey (Renault) & Francois Badin (IFP) & Stefan Kanya (AVL)

10h00 – 11h00: Panel discussions#2, Real Driving Emissions via Portable Emissions Measurement Systems
(*Rectorate Room*)
by Adrian Clenci (UPIT) & Bruno Tissier (Renault) & Hubert Friedl (AVL) & Marcus Boek (Horiba) & Christoph Menne (FEV)

12h00 – 14h00: Lunch (*Restaurant Hotel Victoria*)

14h30 – 17h30: Simultaneous activities - Oral presentations on sections
(*Rooms 1-7 from first floor*)

15h00 – 19h00: Meeting of the Romanian Consortium of Economic Engineering
(*Library Room*)

17h30 – 18h00: Presentation of USA system of education - Corina SANDU, Professor at VirginiaTech, USA (*Rectorate Room*)

18h00 – 18h30: Engine-in-the-loop testing. Simulation of real driving scenarios at the engine test bench – Stefan HERRMAN, Project Manager, FEV, Germany (*Rectorate Room*)

18h30 – 19h15: Awarding ceremony for the student contests & Congress Closing Ceremony (*Rectorate Room*)

20h00: Congress Gala Dinner (*Restaurant Hotel Victoria*)

FRIDAY, 10th of November

08h30 – 14h30: Simultaneous activities (*based on inscriptions*)

Technical visits (*lunch included*)

- Renault Technologie Roumanie, Centre Technique de Titu (1 group, 30 persons)

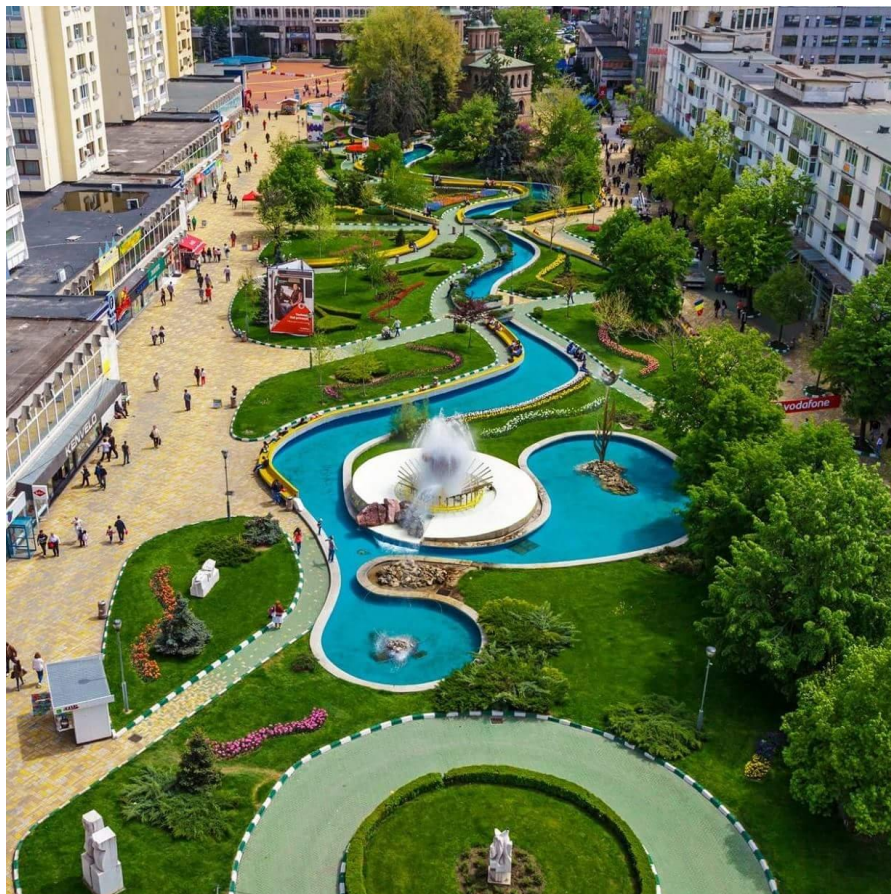
Touristic programme (*after the visit of Renault Technologie Roumanie*)

- Visit of Villa Florica, completed by a local wine tasting in its wine cellar (<http://culturabratianu.ro/en>).



MOTTO

***Academia, Industry and Government.
Together for automotive engineering development***



CONGRESS PROGRAMME – Oral Presentations

WEDNESDAY, 8th of NOVEMBER

Accident research and analysis. Active and passive safety. Vehicle dynamics

15h00 – 16h30, Room 1

CHAIRPERSONS: Adrian Șoica and Adrian Todoruț

CAR 2017_001	Vehicle-pedestrian collisions – Aspects regarding pedestrian kinematics, dynamics and biomechanics <i>Liviu Petrescu, Alexandru Petrescu</i>
CAR 2017_002	Continuous monitoring the vehicle dynamics and driver behavior, using navigation systems <i>George Ene</i>
CAR 2017_003	Mathematical model for studying cyclist kinematics in vehicle-bicycle frontal collisions <i>Ovidiu Andrei Condrea, Anghel Chiru, Rareș Lucian Chiriac, Sorin Vlase</i>
CAR 2017_004	Study regarding seat's rigidity during rear end collisions using a MADYMO occupant model <i>Alexandru Ionuț Radu, Corneliu Cofaru, Bogdan Tolea, Mihaela Popescu</i>
CAR 2017_005	Passenger head in impact with frontal airbag in OOP postures <i>Adrian Ovidiu Șoica, George Radu Togănel</i>

WEDNESDAY, 8th of NOVEMBER

Accident research and analysis. Active and passive safety. Vehicle dynamics

15h00 – 16h30, Room 2

CHAIRPERSONS: Nicolae Ispas and Gabriel Anghelache

CAR 2017_006	Evaluation of the tire pressure influence on the lateral forces that occur between tire and road <i>Nicolae Cordos, Adrian Todoruț, Istvan Barabas</i>
CAR 2017_007	Analysis of car's frontal collision against pole <i>Nicolae Ispas, Mircea Nastasoiu</i>
CAR 2017_008	Simulation of the right-angle car collision based on identified parameters <i>Robert Kostek, Piotr Aleksandrowicz</i>
CAR 2017_009	The measurement of dynamic radii for passenger car tyre <i>Gabriel Anghelache, Raluca Moisescu</i>
CAR 2017_010	Investigation of the influence of vertical force on the contact between truck tyre and road using finite element analyses <i>Raluca Moisescu, Gabriel Anghelache</i>

WEDNESDAY, 8th of NOVEMBER

Advanced engineering methods

15h00 – 16h30, Room 3

CHAIRPERSONS: Corina Sandu and Doru Stănescu

CAR 2017_011	Fatigue Analysis of Rotating Parts. A Case Study for a Belt Driven Pulley <i>Ionela Alina Sandu, Ștefan Tabacu, Cătălin Ducu</i>
CAR 2017_012	Vibration study of a vehicle suspension assembly with the finite element method <i>Gabriel Cătălin Marinescu, Ștefan Cristian Castravete, Nicolae Dumitru</i>
CAR 2017_013	The evaluation of the overall thermal comfort inside a vehicle <i>Cătălin Neacșu, Ion Tabacu, Mariana Ivănescu, Ionel Vieru</i>
CAR 2017_014	Model for the study of the active suspensions <i>Sorin Marcu, Dinel Popa, Doru Stanescu, Nicolae Pandrea</i>
CAR 2017_015	Advanced engineering methods in design and education <i>Krasimir Kamenov, Antoaneta Dobрева, Vyarka Ronkova</i>
CAR 2017_016	Robust Design Optimization and Optimal Uncertainty Apportionment for Nonlinear Vehicle Systems <i>Corina Sandu</i>

WEDNESDAY, 8th of NOVEMBER

Advanced transport systems and road traffic

15h00 – 16h30, Room 4

CHAIRPERSONS: Vasile Dragu and Laurențiu Răcilă

CAR 2017_017	The transport forecast – an important stage of transport management <i>Vasile Dragu, Oana Dinu, Cristina Oprea, Eugenia Alina Roman</i>
CAR 2017_018	Smart transportation CO2 emission reduction strategies <i>Stelian Țărulescu, Radu Țărulescu, Adrian Ovidiu Șoica, Cristian Ioan Leahu</i>
CAR 2017_019	Solutions to improve road circulation in the Pitesti city based on analysis-diagnostics of road traffic <i>Adrian Vîlcan, Elena Neagu, Helene Șuster-Bădărău, Andrei Alexandru Boroiu</i>
CAR 2017_020	Computing programs for determining traffic flows from roundabouts <i>Andrei Alexandru Boroiu, Ion Tabacu, Alexandru Ene, Elena Neagu, Alexandru Boroiu</i>
CAR 2017_021	Mathematical method for studying passenger flows in Craiova Municipality public transport system <i>Matei Lucian, Racilă Mihaela, Oprica Alexandru, Dumitru Neagoe, Dumitru Ilie, Racilă Laurențiu</i>

WEDNESDAY, 8th of NOVEMBER

Internal combustion engines

15h00 – 16h30, Room 5

CHAIRPERSONS: Michael Deligant and Nicolae Vlad Burnete

CAR 2017_022	Influences of diesel pilot injection on ethanol autoignition - a numerical analysis <i>Nicolae Vlad Burnete, Nicolae Burnete, Bogdan Jurchis, Calin Iclodean</i>
CAR 2017_023	Development of a test method for distillation of diesel-biodiesel-alcohols mixtures at reduced pressure <i>Rodica Niculescu, Ion Iosub, Adrian Clenci, Cătălin Zaharia, Victor Iorga-Simăn</i>
CAR 2017_024	Key fuel properties and engine performances of diesel-ethanol blends, using tetrahydrofuran as surfactant additive <i>Andreia Molea, P Visuian, Istvan Barabas, R C Suciu, Nicolae Vlad Burnete</i>
CAR 2017_025	Experimental study on the distillation capacity of alcohol-gasoline blends <i>Cornelia Stan, Cristian Andreescu, Alexandru Dobre, Daniel Iozsa</i>
CAR 2017_026	Research on cylinder processes of gasoline homogenous charge compression ignition (HCCI) engine <i>Corneliu Cofaru</i>

WEDNESDAY, 8th of NOVEMBER

Internal combustion engines

15h00 – 16h30, Room 6

CHAIRPERSONS: Plamen Punov and Dănuț Grosu

CAR 2017_027	Carbon dioxide control technologies for diesel engines <i>Stelian Țărulescu, Radu Țărulescu, Cristian Ioan Leahu</i>
CAR 2017_028	Study on the combustion process in a modern diesel engine controlled by pre-injection strategy <i>Plamen Punov, N Milkov, Christelle Perilhon, Pierre Podevin, T Evtimov</i>
CAR 2017_029	Statistical models of petrol engines vehicles dynamics <i>Constantin Ovidiu Ilie, Marin Marinescu, Octavian Alexa, Radu Vilău, Dănuț Grosu</i>
CAR 2017_030	Biofuel effect on flame propagation and soot formation in a DISI engine <i>Adrian Irimescu, Simona Merola, S Di Iorio, B M Vaglieco</i>
CAR 2017_031	Analysis of performance and emissions of diesel engine using sunflower biodiesel <i>Dragoș Tutunea, Ilie Dumitru</i>

WEDNESDAY, 8th of NOVEMBER

Advanced engineering methods

15h00 – 17h00, Room 7

CHAIRPERSONS: Antoaneta Dobрева and Bogdan Varga

CAR 2017_032	Contributions in developing advanced engineering methods for researching the N.V.H. aspects in Porsche Cayman operation conditions at Technical University from Cluj-Napoca <i>Doru L. Baldean, Bogdan Varga, Dan Moldovanu, Levente Kocsis, Adela Borzan</i>
CAR 2017_033	Research using advanced engineering methods concerning automotive waste disposal in road traffic and transport specialized unit from Cluj-Napoca <i>Adela Ioana Borzan, Doru Laurean Baldean</i>
CAR 2017_034	Considerations on adapting the new WLTC test cycle for a conventional powertrain to a computerized simulation using AVL Cruise software <i>Adrian Sibiceanu, Adrian Iorga, Viorel Nicolae, Dănuț Marinescu, Constantin Cioroianu</i>
CAR 2017_035	Research on some auxiliary mechanisms used in passenger cars <i>Daniela Antonescu, Daniel Iozsa, Ovidiu Antonescu, Gheorghe Frățilă</i>
CAR 2017_036	Thermal and fluid simulation of the environment under the dashboard, compared with measurement data <i>Cristian Sorin Popescu, Gabriel Mihai Sîrbu, Ionuț Cristian Niță</i>
CAR 2017_037	Finite elements contact modelling of planetary gear trains <i>Svetlin Stoyanov, Vasko Dobrev, Antoaneta Dobрева</i>

WEDNESDAY, 8th of NOVEMBER

Accident research and analysis. Active and passive safety. Vehicle dynamics

16h30 – 18h00, Room 1

CHAIRPERSONS: Wolfgang Hirschberg and Corina Sandu

CAR 2017_038	Indirect Tire Monitoring System - Machine Learning Approach <i>Oskar Alexander Svensson, Simon Gunnar Alexander Thelin</i>
CAR 2017_039	Solutions for acceleration measurement in vehicle crash tests <i>Dragos Sorin Dima, Dinu Covaciu</i>
CAR 2017_040	Simulation of car collision with an impact block <i>Piotr Aleksandrowicz, Robert Kostek</i>
CAR 2017_041	Experimental validation of various temperature models for semi-physical tire model approaches <i>Andreas Hackl, Christoph Scherndl, Wolfgang Hirschberg, Cornelia Lex</i>
CAR 2017_042	Pedal force determination respect to ride comfort <i>Slavica Macuzic, Jovanka Lukic, Jasna Glisovic, Danijela Miloradovic</i>
CAR 2017_043	Real-Time Parameter Estimation for Vehicle Systems <i>Corina Sandu</i>

WEDNESDAY, 8th of NOVEMBER

Advanced engineering methods

16h30 – 18h00, Room 2

CHAIRPERSONS: Radu Vilău and Daniel Iozsa

CAR 2017_044	Development of a measuring system for the analysis of vibrations sent from engine to passenger seat <i>Daniela Voicu, Marin Truță, L Barothi, R Stoica, G I Dorobantu</i>
CAR 2017_045	Downforce variation dependence of angle of incidence modification for the rear wing of high speed vehicles <i>Radu Țărulescu, Stelian Țărulescu, Cristian Ioan Leahu</i>
CAR 2017_046	Brake disc modal behavior <i>Anca Alexandra Iordache, Gabriel Anghelache, Ralca Moisescu</i>
CAR 2017_047	The study of spectral analysis to random vibrations for nonlinear oscillators <i>Petre Stan, Marinică Stan</i>
CAR 2017_048	Research on geometric and kinematic analyses of some auxiliary mechanisms used on urban buses <i>Daniela Antonescu, Daniel Iozsa, Ovidiu Antonescu, Gheorghe Frățilă</i>
CAR 2017_049	Algorithm and numerical calculation of undetermined static reactions to the plan articulated quadrilateral mechanism with straight bars <i>Jan Cristian Grigore, Nicolae Pandrea</i>

WEDNESDAY, 8th of NOVEMBER

Advanced materials, manufacturing technologies and logistics

16h30 – 18h00, Room 3

CHAIRPERSONS: Ionel Barbu and Eduard Nițu

CAR 2017_050	Experimental investigations of tungsten inert gas assisted friction stir welding of pure copper plates <i>Adrian Marius Constantin, Ana Boșneag, Eduard Nițu, Monica Iordache</i>
CAR 2017_051	Method of optimizing the construction of machining, assembly and control devices <i>Monica Iordache, Aurel Costea, Eduard Laurentiu Nitu, Alin Daniel Rizea, Alexandru Baba</i>
CAR 2017_052	Design and analysis of a fused deposition modelling manufactured part <i>Claudiu Diaconescu, Stefan Tabacu, Alexandru Oltean</i>
CAR 2017_053	Friction Stir Welding of three dissimilar aluminium alloy used in aeronautics industry <i>Ana Boșneag, M A Constantin, Eduard Nitu, Monica Iordache</i>
CAR 2017_054	Solution for eliminating defects caused by improper operation starting execution <i>Ancuța Bălțeanu</i>

WEDNESDAY, 8th of NOVEMBER

Internal combustion engines

16h30 – 18h00, Room 4

CHAIRPERSONS: Anghel Chiru and Nicolae Burnete

CAR 2017_055	Study of emissions for a compression ignition engine fueled with a mix of DME and diesel <i>Bogdan Jurchis, Nicolae Burnete, Calin Doru Iclodean, Nicolae Vlad Burnete</i>
CAR 2017_056	Evolution of the pressure wave supercharger concept <i>Iuliana Costiuc, Anghel Chiru</i>
CAR 2017_057	Injection system used into SI engines for complete combustion and reduction of exhaust emissions in the case of alcohol and petrol alcohol mixtures feed <i>Nicolae Ispas, Corneliu Cofaru, Mihai Aleonte</i>
CAR 2017_058	The comparative study of vehicles engine in different functioning situations <i>Marin Nicolau, Constantin Pantece, Gabriel I. Dorobanțu, Virgilius J. Radulescu, Ion Copae</i>
CAR 2017_059	New turbo compound systems in automotive industry for internal combustion engine to recover energy <i>Rareș Chiriac, Anghel Chiru, Ovidiu Condrea</i>

WEDNESDAY, 8th of NOVEMBER

Internal combustion engines

16h30 – 18h00, Room 5

CHAIRPERSONS: Edward Rakoși and Pierre Podevin

CAR 2017_060	Elements of cam's synthesis for a distribution mechanism for the Miller-Atkinson cycle <i>Ionuț Dragomir, Bogdan Mănescu, Nicolae Stănescu, Nicolae Pandrea, Adrian Clenci, Dinel Popa</i>
CAR 2017_061	Aspects in the synthesis of a variable compression ratio mechanism <i>Bogdan Mănescu, Ionuț Dragomir, Nicolae Stănescu, Nicolae Pandrea, Adrian Clenci, Dinel Popa</i>
CAR 2017_062	Contribution of developing advanced engineering methods in interdisciplinary studying the piston rings from 1.6 spark ignited Ford engine <i>Cherecheș Ioan Aurel, Adela Ioana Borzan, Doru Laurean Baldean</i>
CAR 2017_063	Theoretical model for determination of the spark ignition engine thermo-gasodynamic parameters on various functional conditions <i>Vlad Alexandru Vornicu, Tudor Ulian, Edward Rakosi, Gh. Manolache, Lidia Gaiginschi</i>
CAR 2017_064	The physically-mathematically model for studying the thermal regime of the spark ignition engine concerning the filling coefficient <i>Tudor Ulian, Vlad Vornicu, Edward Rakoși, Sorinel Talif, Iulian Agape</i>

WEDNESDAY, 8th of NOVEMBER

Vehicle electronics and software

16h30 – 18h00, Room 6

CHAIRPERSONS: Istvan Barabas and Silviu Ioniță

CAR 2017_065	Autonomous vehicles: from paradigms to technology	Silviu Ioniță
CAR 2017_066	Current challenges in autonomous driving	Istvan Barabas, Adrian Todoruț, Nicolae Cordoș, A Molea
CAR 2017_067	Ad-hoc networks for the autonomous car	Ron Davidescu, Eugen Negrus
CAR 2017_068	Real time monitoring system used in route planning for the electric vehicle	Laurențiu Mihai Ionescu, Alin Mazăre, Gheorghe Șerban, Silviu Ioniță
CAR 2017_069	Virtual engine management simulator for educational purposes	Radu Drosescu
CAR 2017_070	Driver drowsiness detection using ANN image processing	Tiberiu Vesselenyi, Sorin Moca, Alexandru Rus, Tudor Adrian Mitran, Bogdan Tătaru

THURSDAY, 9th of NOVEMBER

Accident research and analysis. Active and passive safety. Vehicle dynamics

14h30 – 16h00, Room 1

CHAIRPERSONS: Lidia Gaiginschi and Oskar Svensson

CAR 2017_071	Upon the reconstruction of accidents triggered by tire explosion. Analytical model and case study	Lidia Gaiginschi, Iulian Agape, Sorinel Talif
CAR 2017_072	Dynamic models to analyze the influence of the seat belt in a frontal collision	Oana Victoria Oță, Nicolae Dumitru, Ilie Dumitru
CAR 2017_073	Experimental research on pedestrian lower leg impact	Bogdan Alexandru Constantin, Daniel Iozsa, Cornelia Stan
CAR 2017_074	Numerical solution of the process of hydroplaning at wheels with envelope	Marinică Stan, Petre Stan
CAR 2017_075	Application of advanced engineering methods in studying a road traffic event between a 12-wheeler truck and a small tourism in a local junction from Cluj-Napoca	Adela Ioana Borzan, Doru Laurean Baldean

THURSDAY, 9th of NOVEMBER
Advanced engineering methods

14h30 – 16h00, Room 2

CHAIRPERSONS: Georgio Pulvirenti and Georgios Papaioannou

CAR 2017_076	Influence of housing wall compliance on shock absorbers in the context of vehicle dynamics <i>Georgio Pulvirenti, Cassio Faria</i>
CAR 2017_077	Study on the influence of the convoy rolling over aerodynamic resistance <i>Daniel Iozsa, Cornelia Stan, Laurentiu Ilea</i>
CAR 2017_078	Research on optimization of test cycles for comfort to the special vehicles <i>Marian Mitroi, Anghel Chiru</i>
CAR 2017_079	An approach for multiobjective optimization of vehicle suspension systems <i>Dimitrios Koulocheris, Georgios Papaioannou, Dimitrios Christodoulou</i>
CAR 2017_080	Studies and research regarding optimal cargo load of a transport van using carmaker software <i>Dan Moldovanu, Florin Mariasiu</i>
CAR 2017_081	The simulation of the dynamic behaviour for an elastic mechanical transmission of passenger car <i>Alexandru Dobre</i>

THURSDAY, 9th of NOVEMBER

Advanced materials, manufacturing technologies and logistics

14h30 – 16h00, Room 3

CHAIRPERSONS: Daniel Anghel and Claudiu Diaconescu

CAR 2017_082	Wheel liner design for improved sound and structural performances <i>Alexandru Oltean, Claudiu Diaconescu, Ștefan Tabacu</i>
CAR 2017_083	A neural networks application for the study of the influence of transport conditions on the working performance <i>Daniel-Constantin Anghel, A Ene, Cosmin Stirbu, Gina Sicoe</i>
CAR 2017_084	The potential of natural fibers for automotive sector – review <i>Magdalena Simona Fogorasi, Ionel Barbu</i>
CAR 2017_085	Improvement of the customer satisfaction through Quality Assurance Matrix and QC-Story methods: A case study from automotive industry <i>Gina Sicoe, Nadia Belu, Nicoleta Rachieru, Viorel Nicolae</i>
CAR 2017_086	The influence of the technological deviations over the vibration inherent frequencies at bending from the three-shafts transmission <i>Ion Bulac</i>

THURSDAY, 9th of NOVEMBER

Internal combustion engines

14h30 – 16h00, Room 4

CHAIRPERSONS: Cristian Andreescu and Radu Chiriac

CAR 2017_087	A comparative study of cycle variability of laser plug ignition vs classical spark plug ignition in combustion engines <i>George Bogdan Done</i>
CAR 2017_088	LPG as a fuel for diesel engines - experimental investigations <i>Nikolaos Cristian Nuțu, Constantin Pană, Nicolae Negurescu, Alex Cernat, Ionel Mirica</i>
CAR 2017_089	Experimental and numerical assessment of ignition delay period for pure diesel and biodiesel B20 <i>Mohanad Aldhaidhawi, Marek Brabec, Radu Chiriac, Viorel Badescu, Lucian Miron</i>
CAR 2017_090	On the assessment of performance and emissions characteristics of a SI engine provided with a laser ignition system <i>Adrian Birtaş, Nicolae Boicea, F Draghici, Radu Chiriac, G Croitoru, M Dincă, Traian Dascalu, Nicolae Pavel</i>
CAR 2017_091	Comparative analysis by simulation for behavior of a spark-ignition engine fueled with gasoline and LPG in the transient regimes <i>Valentin Nișulescu, Florian Ivan, Daniel Iozsa, Gheorghe Bancă</i>

THURSDAY, 9th of NOVEMBER

Internal Combustion Engines

14h30 – 16h00, Room 5

CHAIRPERSONS: Cornel Cofaru and Dragoș Tutunea

CAR 2017_092	The calculus of the technical-economic parameters of a SI direct injection engine <i>Tudor Adrian Mitran, Vasile Blaga, Horia Beleş, George Dragomir</i>
CAR 2017_093	A study upon medium displacement Diesel Engine failure <i>Iulian Agape, Lidia Gaiginschi, Sorinel Talif</i>
CAR 2017_094	Compression tests methods on car engines <i>Marius Florin Toma, Dan Alexandru Micu, Cristian Andreescu, C Iota</i>
CAR 2017_095	Emissions characteristic of diesel engine fueled by biodiesel at partial load <i>Bogdan Cornel Benea</i>
CAR 2017_096	Experimental study on the effect of adding bioethanol in spark ignition engine <i>Dragos Tutunea, Ilie Dumitru</i>

THURSDAY, 9th of NOVEMBER

Hybrid and electric vehicles

14h30 – 16h00, Room 6

CHAIRPERSONS: Mircea Oprean and Ion Preda

CAR 2017_097	A comparative study of planetary mechanisms usable for power sources coupling <i>Irina Tudor, Dinel Popa, Doru Stanescu</i>
CAR 2017_098	Determination of the needed power of an electric motor on the basis of acceleration time of the electric car <i>M Sapundzhiev, I Evtimov, Rosen Ivanov</i>
CAR 2017_099	Design-parameters setup for Power-Split Dual-Regime IVT <i>Ion Preda, Gheorghe Ciolan, Dinu Covaciu</i>
CAR 2017_100	Considerations concerning the power loops within the all-wheel driven transmissions of the automobile <i>Marin Truță, B Laszlo, D Voicu, R Stoica, Valentin Vînturiș</i>

THURSDAY, 9th of NOVEMBER

Accident research and analysis. Active and passive safety. Vehicle dynamics

16h00 – 17h30, Room 1

CHAIRPERSONS: Loreta Simniceanu and Horia Beleş

CAR 2017_101	A late and failure of airbag deployment case study for drivers of passenger cars in rear-end collisions <i>George Radu Toganel, Adrian Ovidiu Șoica</i>
CAR 2017_102	Most common road safety engineering deficiencies in South Eastern Europe as a part of safe system approach <i>D Jovanov, H J Vollpracht, Horia Beles, Virgil Popa, Bogdan A Tolea</i>
CAR 2017_103	A comparison of optimal semi-active suspension systems regarding vehicle ride comfort <i>Dimitrios Koulocheris, Georgios Papaioannou, Emmanouil Chrysos</i>
CAR 2017_104	Nonlinear differential system applied of a mechanical plan model of the automotive used for the nonlinear stability analysis <i>Loreta Simniceanu, Mihaela Bogdan, Victor Oțăt, Mario Trotea</i>
CAR 2017_105	Analyses and statistics on the frequency and the incidence of traffic accidents within Dolj County <i>Oana Victoria Oțăt, Gabriel Marinescu, Victor Oțăt</i>

THURSDAY, 9th of NOVEMBER

Advanced materials, manufacturing technologies and logistics

16h00 – 17h30, Room 2

CHAIRPERSONS: Ali El-Hafidi and Gabriel Cristea

CAR 2017_106	A comparative critical study between FMEA and FTA risk analysis methods <i>Gabriel C. Cristea, Dan Mihai Constantinescu</i>
CAR 2017_107	Optimizing the construction of devices to control inaccessible surfaces - case study <i>Eduard Laurentiu Nitu, A Costea, Monica Iordache, Alin Rizea, A L Baba</i>
CAR 2017_108	Experimental and theoretical study of friction torque from radial ball bearings <i>Ionuț Geonea, Nicolae Dumitru, Ilie Dumitru</i>
CAR 2017_109	Characterization of the dynamic behaviour of flax fibre reinforced composites using vibration measurements <i>Ali El-Hafidi, Papa Birame Gning, Benoit Pieze, Stéphane Fontaine</i>
CAR 2017_110	Analysis of Kanban, Conwip, Base on stock methods influences on the production system performance <i>Ana Gavriluță, Alin Gavriluță</i>

THURSDAY, 9th of NOVEMBER

Advanced transport systems and road traffic

16h00 – 17h30, Room 3

CHAIRPERSONS: Laurențiu Manea and Alexandru BoroIU

CAR 2017_111	Solutions to Improve Person Transport System in the Pitesti City by Analyzing Public Transport vs. Private Transport <i>Mihaela Istrate, Alexandru BoroIU, Viorel Nicolae, Ionel Vieru</i>
CAR 2017_112	Proposal for the use of a new parameter in the composite road traffic model <i>Alexandru BoroIU, Ion Tabacu, Andrei Alexandru BoroIU, Elena Neagu, Ionel Vieru</i>
CAR 2017_113	Comparative analysis of the performance of one-way and two-way urban road networks <i>Carmen Gheorghe</i>
CAR 2017_114	Road traffic noise pollution analysis for Cernavoda city <i>Laurențiu Manea, Adriana Manea, Daniela Florea, Stelian Țărulescu</i>
CAR 2017_115	Mathematical method for studying passenger flows in Craiova Municipality public transport system <i>Matei Lucian, Racilă Mihaela, Oprica Alexandru, Dumitru Neagoe, Dumitru Ilie, Racilă Laurențiu</i>

THURSDAY, 9th of NOVEMBER

Internal combustion engines

16h00 – 17h30, Room 4

CHAIRPERSONS: Hubert Friedl and Amélie Danlos

CAR 2017_116	Assessment of real driving emissions via portable emission measurement system <i>Adrian Clenci, Viorel Sălan, Victor Iorga-Simăn, Cătălin Zaharia, Rodica Niculescu</i>
CAR 2017_117	Spark discharge and flame inception analysis through spectroscopy in a DISI engine fuelled with gasoline and butanol <i>Adrian Irimescu, Simona Merola</i>
CAR 2017_118	Evaluation of performance and emissions characteristics of methanol blend (gasohol) in a naturally aspirated spark ignition engine <i>Alexandru Mihai Dima, Ilie Dumitru, Dragoș Tutunea</i>
CAR 2017_119	The study of the energetic performance in test cycles <i>Cristian Rentea, Alexandra Tuca, Mircea Oprean, Marius Bățăuș</i>
CAR 2017_120	Surge detection on an automotive turbocharger during transient phases <i>Michael Deligant, Amélie Danlos, Pierre Podevin, Adrian Clenci, Stéphane Guilain</i>

THURSDAY, 9th of NOVEMBER

Hybrid and electric vehicles

16h00 – 17h30, Room 5

CHAIRPERSONS: Francois Badin and Valentin Vînturiș

CAR 2017_121	Comparison of different battery types for electric vehicles <i>Calin Doru Iclodean, Bogdan Ovidiu Varga, Nicolae Burnete, Denisa Cimerdean, B. Jurchis</i>
CAR 2017_122	Analysis of the economic and ecological performances in the transient regimes of the European driving cycle for a midsize SUV equipped with a DHEP, using the simulation platforms <i>Gheorghe Bancă, Florian Ivan, Daniel Iozsa, Valentin Nișulescu</i>
CAR 2017_123	Simulation of an electric vehicle model on the new WLTC test cycle using AVL CRUISE software <i>Constantin Cioroianu, Dănuț Marinescu, Adrian Iorga, Adrian R. Sibiceanu</i>
CAR 2017_124	Dynamic behavior of the mechanical systems from the structure of a hybrid automobile <i>Dinel Popa, Irina Tudor, Doru Stănescu</i>

THURSDAY, 9th of NOVEMBER

Heavy and special vehicles

16h00 - 17h30, Room 6

CHAIRPERSONS: Mircea Năstăsoiu and Ion Lespezeanu

CAR 2017_125	The influence of the suspension upon the axle weight distribution for heavy trucks <i>Bogdan Tolea, Alexandru Ionut Radu, Dragoş Sorin Dima, Horia Beleş</i>
CAR 2017_126	Theoretical and experimental considerations regarding to functioning of a combat vehicle shutter's hydraulic actuation system <i>Ion Lespezeanu, Laszlo Barothi, Radu Vilău</i>
CAR 2017_127	The collection and acquisition systems dynamic parameters of special vehicles in special conditions of travel <i>Marian Mitroi, Camil Tudor</i>
CAR 2017_128	Dynamics of the walking machines <i>Dinel Popa, Doru Stănescu, Claudia Mari Popa</i>
CAR 2017_129	Determining the theoretical drawbar performance characteristics, considering the variation of tractor wheels radii during operation <i>Mircea Năstăsoiu, Nicolae Ispas</i>



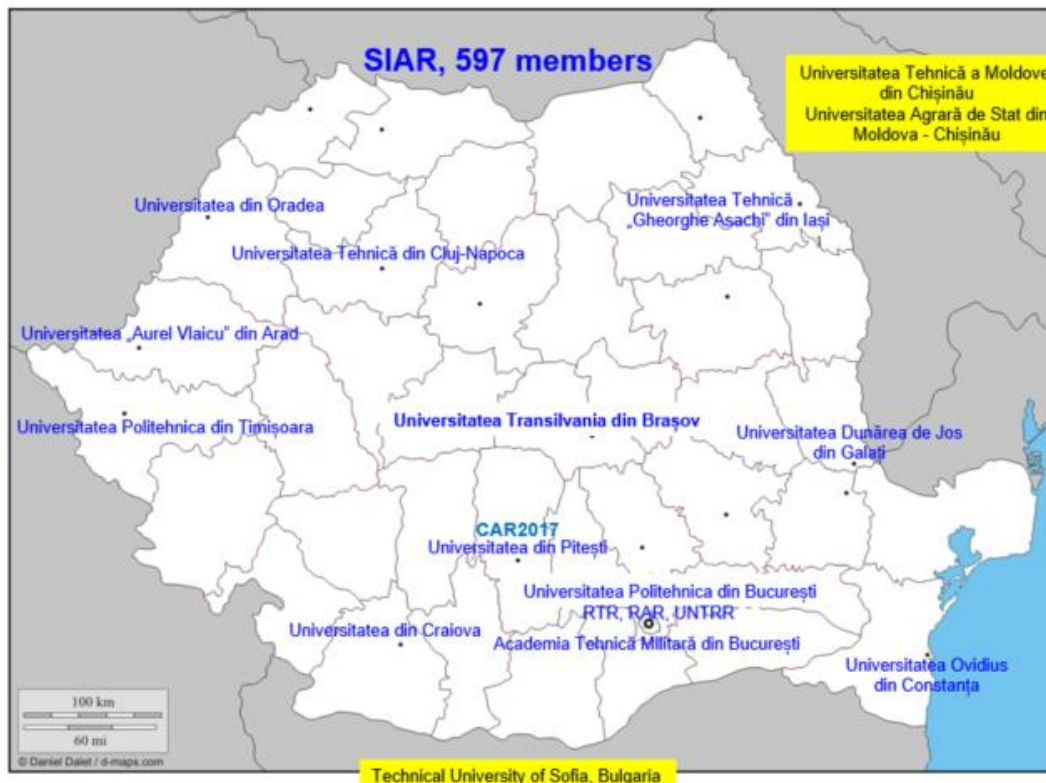
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