The International Congress of AUTOMOTIVE AND TRANSPORT ENGINEERING CONAT 2016

FINAL PROGRAMME

October 26-29, 2016 BRASOV ROMANIA

BRASOV

2016

Welcome to CONAT 2016, Braşov!

CONAT History

The CONAT International Congress is a traditional scientific event initiated by TRANSILVANIA University since 1965.

At the previous 11 editions of the Congress, valuable scientific papers were presented, by teaching staff of the technical universities, as well as by specialists working in the design and research departments, manufacturing companies or in the operation division of automotive transport companies. A short review of the previous edition is listed below:

- XI-th edition: 2010, October 20 - 22, 216 papers, 273 participants from 19 countries
- X-th edition: 2004, October 20 - 22, 208 papers, 375 participants from 15 countries
- IX-th edition: 1999, November, 189 papers, 155 participants from 11 countries.
- VIII-th edition: 1996, November 13 - 15, 290 papers, 418 participants, 64 institutions from 7 countries.
- VII-th edition: 1993, Mars 18 - 20, 197 papers, 358 participants, 42 institutions from 8 countries.
- VI-th edition: 1988, November 25 - 26, 222 papers, 344 participants, 50 institutions.
- V-th edition: 1985, November 21 - 22, 261 papers, 410 participants, 61 institutions.
- IV-th edition: 1982, November 19 - 20, 182 papers, 244 participants, 23 institutions.
- III-rd edition: 1980, November 28 - 29, 121 papers, 184 participants, 23 institutions.
- II-nd edition: 1976, November 26 - 27, 101 papers, 131 participants, 20 institutions.
- I-st edition: 1965, December 16 - 18, 56 papers, 103 participants, 17 manufacturing and research institutes and universities.

Welcome Message

President of the Scientific and Technical Committee
Professor Anghel CHIRU

President of the Organising Committee
Professor. Nicolae ISPAS

The International Congress CONAT aims to bring to the attention of researchers and automobile manufacturers the outstanding results in research and innovation achieved and confirmed in the context of the requirements imposed by the XXI century standards. Innovations carried out by specialists and academics within the research or production centers seek out for solutions to a number of major issues regarding: the security of supply and diversity of energy sources, improving the energy efficiency, reducing of CO2 emissions and pollutants, optimizing the raw materials management, stimulating the use of biomass for producing alternative fuels, developing the chemistry of bio-resources, vehicles hybridization and electrification, energy storage, boosting the high efficiency engines' development, rising the effectiveness of processes and manufacturing technologies and installation, implementing the classic materials together with new materials, plastics, ceramics, elastic materials and composites, optimizing traffic and transportation together with modernizing transport logistics, etc.

The presentations and meetings during the congress are meant to provide a general exchange of views about future programs of research, training of specialists into partnerships university- industry, adapting specializations and qualifications to the needs of today's economy, as well as engineering and design development, knowledge transfer, simulation, creation and innovation.

By its topics, scope, scientific level of the communications, commitment and involvement of companies producing cars, equipments and components provided into the congress, the academic exigencies manifested towards the act of research and innovation, the Congress CONAT 2016 intends to be a reference in the field for FISITA, SAE, EAEC and SIAR.

President of the Scientific and Technical Committee

Professor Anghel CHIRU

President of the Organising Committee

Professor. Nicolae ISPAS

FISITA Member Societies - Europe

Austria Österreichischer Ingenieur-und Architektenverein (ÖIAV)

Austria Österreichischer Verein für Kraftfahrzeugtechnik (ÖVK)

Belarus Academic Automotive Association (AAA)

Belgium Union Belge des Ingenieurs de L'Automobile (UBIA)

Croatia Hrvatsko Drustvo za Motore i Vozila (HDMV)

Czech Republic Ceská Automobilova Spolecnost (CAS)

Finland Suomen Autoteknillinen Liitto r.y. (SATL)

France Société des Ingénieurs de L'Automobile (SIA)

Germany Verein Deutscher Ingenieure e.V. (VDI e.V.)

Hungary Gepipari Tudomanyos Egyesulet (GTE)

Israel Israel Society of Mechanical Engineers - Automotive Section (ISME-AS)

Italy Associazione Tecnica Dell'Automobile (ATA)

Latvia Latvia Association of Automobile Engineers (LAIA)

Lithuania Lietuvos Automobiliu In□inieriu Sajunga (LAIS)

Netherlands KIVI - AD (KIVI)

Poland Stowarzyszenie Inzynierow I Technikow Mechaników Polskich (SIMP)

Romania Societatea Inginerilor de Automobile din Romania (SIAR)

Russia Association of Automotive Engineers (AAE)

Serbia Jugoslovensko Drustvo za Motore i Vozila (JUMV)

Slovakia Spolok Automobilovych Inzinierov a Technikov Slovenska (SAITS)

Slovenia Association of Mechanical Engineers and Technicians Automotive Group, Slovenia (AMETS-AG)

Spain Sociedad de Técnicos de Automoción (STA)

Sweden Swedish Vehicular Engineering Association (SVEA)

Switzerland Society of Automotive Engineers Switzerland (SAE Switzerland)

United Kingdom Institution of Mechanical Engineers - Automobile Division (IMechE)

Welcome Message

Dear SIAR members and participants at the CONAT 2016 Congress in Brasov.

On behalf of SAE International, I am proud to welcome you at the 2016 CONAT. We are proud to be a partner with SIAR and FISITA because we understand the value of such events. SAE International established two joint sections with SIAR in Bucharest and Brasov in mid Nineties. I hope we will be able to revive our old connections once again for our mutual benefit.

SAE recognizes the important role that mobility engineers play in our world. That's why we have created a system of products and services that emphasize learning and help train people throughout their careers. All of these efforts are with the singular goal to help professionals meet the needs and challenges of the mobility engineering industry.

Such a mindset is one that we take seriously at SAE International. We want to be part of the "solutions" process. And, we want to help make your professional lives a little easier by providing the technical information and tools that you need to excel.

I want to acknowledge the hard work of all involved for helping to make the event a reality.

In particular, I want to recognize and congratulate the contributing members of SIAR, all volunteers, sponsors, and all those engineers who are participating in this event.

I hope that everyone enjoys their time at the Congress and find the event to be rewarding both professionally and personally.

Executive Advisor – Global SAE International

Vice President – Americas (FISITA)

Murli M. Iyer

Congress Honorary Committee

Ioan ABRUDAN	**Rector of Transilvania University of Brasov**
Rafael BORONAT MARTINEZ	EAEC President
Adrian CLENCI	SIAR President
Peter GUTZMER	Deputy CEO and Chief Technology Officer, Schaeffler AG
Günther HOHL	Former EAEC President
Jan LEURIDAN	CEO, Siemens Industry Software
Helmut LIST	CEO, AVL Graz
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Chris MASON	FISITA's CEO
Eugen NEGRUS	Former SIAR President
Peter PLEUS	CEO, Automotive, Schaeffler AG
Cornel STAN	West Saxon University of Zwickau

Organizing Team

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President of the Organizing Committee

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President of Scientific & Technical Committee

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Professor **Adrian SOICA**, Transilvania University of Brasov, Romania

Congress Secretariat

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Professor **Natalia FILIP**, Transilvania University of Brasov, Romania
Lecturer **Sebastian RADU**, Transilvania University of Brasov, Romania
Lecturer **Radu TARULESCU**, Transilvania University of Brasov, Romania
Lecturer **Stelian TARULESCU**, Transilvania University of Brasov, Romania
Lecturer **Janos TIMAR**, Transilvania University of Brasov, Romania
Mrs **Felicia CAZAN**, Transilvania University of Brasov, Romania

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Professor **Csaba ANTONYA**, Transilvania University of Brasov, Romania
Professor **Gheorghe CIOLAN**, Transilvania University of Brasov, Romania
Professor **Corneliu COFARU**, Transilvania University of Brasov, Romania
Professor **Ovidiu CAMPIAN**, Transilvania University of Brasov, Romania
Professor **Gheorghe MOGAN**, Transilvania University of Brasov, Romania
Professor **Mircea NASTASOIU**, Transilvania University of Brasov, Romania
Professor **Gheorghe Alexandru RADU**, Transilvania University of Brasov, Romania
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Lecturer **Mihai DOGARIU**, Transilvania University of Brasov, Romania
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Mr. **Bogdan TOLEA**, Transilvania University of Brasov, Romania
Mr. **Daniel VOINEA**, Transilvania University of Brasov, Romania

Students Commitee Members

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Assoc. Prof. **Silviu BUTNARIU**, Transilvania University of Brasov, Romania
Lecturer **Florin Stelian GARBACIA**, Transilvania University of Brasov, Romania

Logistics & Organisation

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Professor **Valeriu ENACHE**, Transilvania University of Brasov, Romania
Professor **Ioan Calin ROSCA**, Transilvania University of Brasov, Romania
Dr. **Dragos Sorin DIMA**, Transilvania University of Brasov, Romania

Scientific and Technical Committee

President of the Scientific and Technical Committee:

Professor **Anghel CHIRU**
Transilvania University of Brasov, Romania
Director of the Research Department High-Tech Products for Automobiles

Section 1. Innovative Solutions for Automotive Vehicles

Professor **Michael BUTSCH**
University of Applied Sciences
Konstanz, Germany

Professor **Gheorghe-Alexandru RADU**
Transilvania University of Brasov, Romania
Member of the Romanian Academy of Technical Sciences

Professor **Cornel STAN**
Dr.h.c., Habil, Director FTZ- Research and Technology Association
West Saxon University of Zwickau, Germany

Section 2. Automotive Vehicles and Environment

Professor **Giovanni CIPOLLA**
Politecnico di Torino, Italy

Professor **Corneliu COFARU**
Transilvania University of Brasov, Romania

Professor **Adolfo SENATORE**
Federico II University of Naples, Italy

Professor **Roger SIERENS**
Ghent University, Belgium

Professor **Ion VISA**
Transilvania University of Brasov, Romania

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Professor **Kwang Min CHUN**
Yonsei University, Korea

Professor **Nicolae FILIP**
Technical University of Cluj-Napoca, Romania

Professor **Daniela FLOREA**
Transilvania University of Brasov, Romania

Professor **Abdellatif MIRAOUI**
Universite de Technologie de Belfort-Montbeliard, France
Cadi Ayyad University, Morocco

Professor **Serban RAICU**
University Politehnica Bucharest, Romania

Section 4. Advanced Engineering Methods

Dr. **Michael ELICKER**
Schaeffler Technologies AG & Co. KG, Germany

Eduard GOLOVATAI-SCHMIDT
Schaeffler Technologies AG & Co. KG, Germany

Dr. **Jan LEURIDAN**
Siemens Industry Software, Belgium

Professor **Ion PREDA**
Transilvania University of Brasov, Romania

Professor **Corina SANDU**
Virginia Tech, USA

Professor **Ion TABACU**
University of Pitesti, Romania

Section 5. Heavy and Special Vehicles

Professor **Cristian ANDREESCU**
University Politehnica Bucharest, Romania

Professor **Peter KUCHAR**
University of Applied Science Konstanz, Germany

Professor **Mircea NASTASOIU**
Transilvania University of Brasov, Romania

Professor **Nicolae VASILIU**
University Politehnica Bucharest, Romania

Section 6. New Materials, Manufacturing Technologies and Logistics

Professor **Paul GUEMPEL**
University of Applied Science Konstanz, Germany

Professor **Gheorghe MOGAN**
Transilvania University of Brasov, Romania

Professor **Hariton POPARAD**
Transilvania University of Brasov, Romania

Professor **Adrian RIENAECKER**
University of Kassel, Germany

Section 7. Accident Research and Analysis

Professor **Nicolae ISPAS**
Transilvania University of Brasov, Romania

Professor **Eugen Mihai NEGRUS**
University Politehnica Bucharest, Romania

Professor **Jan UNARSKI**
Institute of Forensic Research Krakow, Poland

Congress Programme

Date / Time	Scheduled activities			Location
Tuesday 25 October				
17:00 - 19:00	Registration			Transilvania University, Conference Center
19:00 - 22:00		Welcome Reception		
Wednesday 26 October				
08:00	Registration			Transilvania University, Conference Center
09:00 - 10:30		Opening Ceremony		
10:30 - 11:00	Registration	Coffee Break		
11:00 - 13:00		Plenary Session *Peter PLEUS (Schaeffler AG, Germany), Corina SANDU (Virginia Tech, USA), Pascal CANDAU (Renault Technologie Roumanie), Gerolf STROHMEIER (AVL List GmbH, Austria)*		
13:00 - 14:30		Lunch Break		Aro-Palace Hotel
14:30 - 16:30		Workshop - Collaboration in the Horizontal Automotive Industry *Chairman: Peter PLEUS (Schaeffler AG, Germany)*		Transilvania University, Conference Center
16:30 - 17:00		Coffee Break		
17:00 - 19:00		Technical Sessions	**17:00 - 17:30** - Presentation of the Portable Emissions Measuring System (PEMS), HORIBA OBS-ONE	
19:00 - ...		Schaeffler Evening		

Thursday 27 October

09:00 - 11:00	Registration	Technical Sessions	Company Presentations **Renault Romania** (meeting with students)	Transilvania University, Conference Center
11:00 - 11:30		Coffee Break		
11:30 - 13:00		Technical Sessions	Company Presentations 11:30 - **Beta CAE** 12:15 - **INAS SA** (CAD/CAM/CAE/PLM solutions for Universities and Research Institutes)	
13:00 - 14:30		Lunch Break		Aro-Palace Hotel
14:30 - 16:30		Technical Sessions	Students Session	Transilvania University, Conference Center
16:30 - 16:45		Coffee Break		
16:45 - 18:15		Technical Sessions	Students Session	
18:30 - 19:00		Organ Concert		Black Church
20:00 - 23:00		Gala Dinner		Aro-Palace Hotel

Friday 28 October

09:00 - ...		Technical Visits	
09:30 - 11:30	Technical Sessions		Transilvania University, Conference Center
11:30 - 12:00	Coffee Break		
12:00 - 13:00	Plenary Session *Cornel Stan (West Saxon University of Zwickau, Germany)*		
13:00 - 14:00	Closing Ceremony		

Keynote Speakers

Mr. Pascal Candau

General Manager, Renault Technologie Roumanie

Presentation: Worldwide Diversity Management of "Global Access" Vehicle Range of Renault/Dacia's Engineering by Using a Modern PLM System

Professor Dr. Peter Pleus

CEO Automotive, Schaeffler AG, Germany

Presentation: Mobility for Tomorrow

Ms. Corina Sandu

Professor, Virginia Tech, USA

Presentation: Performance Evaluation and Modeling of Pneumatic Tires on Soft Soil and Icy Roads

Mr. Gerolf Strohmeier

Managing Director Affiliate Group AVL List GmbH, Instrumentation & Test Systems, Graz, Austria

Presentation: New EU Real Driving Emission Legislation (RDE) – The Big Challenge

Professor Cornel Stan

Dr.h.c., Habil, Director of the FTZ - Research and Technology Association at the West Saxon University of Zwickau, Germany

Presentation: Auto-Mobility of the Future – Development of Functions and Techniques

Workshop Speakers

Moderator: **Professor Dr. Peter Pleus**
CEO Automotive, Schaeffler AG, Germany

Mr. **Flavio ALMEIDA**
Renault Technologie Roumanie

Collaboration in the Horizontal Automotive Industry: Renault Group vision

Dr. **Gerhard MAAS**
Executive Vice President / Head of International Operations
of IAV Group, Germany

Future Aspects on Collaboration in the Horizontal Automotive Industry

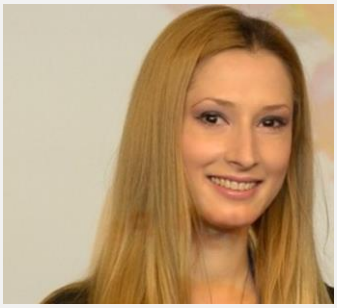
Dr. **Kay LINDEMANN**
Managing Director, VDA, Germany

The German Association of the Automotive Industry (VDA)

Dr. **Constantin STROE**
President of Car Manufacturers Association
in Romania (ACAROM), Romania

Professor **Cornel STAN**
Dr.h.c., Habil, Director of the FTZ - Research and Technology
Association at the West Saxon University of Zwickau, Germany

Collaboration in the Horizontal Automotive Industry: Vision of a University
Research Centre



Ioana TÎRCOMNICU-UNGA
Deputy General Manager - Sales and Marketing,
INAS SA Craiova, Romania

Dr. **Christoph KLOTZ**
HORIBA Europe GmbH, Romania

HORIBAs approach to Real Driving Emissions

Technical Sessions

Wednesday 26 October
17:00 -19:00

Room 1

Session 1.1
Chairmen: Mircea Oprean, B.E. Badescu

Paper ID	Title / Authors
560	STUDY ON A STRATIFIED CHARGE SPARK IGNITION AUTOMOTIVE... *Rakosi, Talif, Manolache, Sachelarie*
681	CHASSIS OPPORTUNITIES FOR THE FUTURE – UNIQUE ACTUATORS... *Kraus, Hochmuth, Krehmer, Baeuml,...*
576	CONTRIBUTIONS IN EXPERIMENTAL RESEARCH CONCERNING DIESEL... *Baldean, Crisan, Borzan*
580	EXPERIMENTAL RESEARCH REGARDING THE POSSIBILITY OF... *Baldean, Burnete, Moldovanu, Gaspar,...*
583	RESEARCHES ON COOLING AIR FLOW CONTROL DEVICES USING ON... *Dascalescu, Receanu, Dimitriu, Vornicu-Albu*
683	DIAGNOSING THE OPERATION OF A LOCOMOTIVE DIESEL ENGINE... *Zaharia, Niculescu, Iorga, Ducu,...*

Room 2

Session 2.1
Chairmen: Gheorghe Al. Radu, Florian Ivan

Paper ID	Title / Authors
732	RESEARCH ON GASOLINE HOMOGENOUS CHARGE COMPRESSION... *Cofaru*
465	STUDY OF THE DIESEL ENGINE CYCLE VARIABILITY AT LPG FUELLING *Nemoianu, Cernat, Pana, Negurescu, Nutu*
472	ASPECTS OF EXPERIMENTAL RESEARCH ON HYDROGEN FUELLED... *Mirica, Cernat, Pana, Negurescu, Nutu*
661	MISSION CO2-REDUCTION *Seebacher*
543	THE EFFECTS OF A DIESEL-ETHANOL BLEND WITHOUT ADDITIVES... *Burnete, Iclodean, Popescu, Filip*
548	MODEL FOR PREDICTING THE PERFORMANCE AND EXHAUST GAS... *Aldhaidhawi, Badescu, Chiriac*

Room 3

Session 4.1
Chairmen: Corina Sandu, Dan Centea

Paper ID	Title / Authors
579	ANALYSIS OF THE INFLUENCE OF THE DRIVE FORCE DISTRIBUTION... *Renski*
482	FUNCTIONAL DESCRIPTION OF HYBRID TRANSMISSIONS AND... *Vornehm*
619	EVALUATION OF THE BEHAVIOR IN CORNERING FOR DIFFERENT... *Cordos, Todorut, Barabas, Muresan*
641	STRUCTURAL DYNAMIC APPLICATIONS USING PRINCIPAL... *Niculescu, Irimia, Rosca, Grovu, Guiman*
678	COLLABORATIVE DESIGN AND USE OF INTERACTIVE SIMULATIONS... *Mehrtash, Centea*
600	ABOUT THE STEERING KINEMATICS OF THE ROAD TRAINS *Preda, Covaciu*

Room 4

Session 3.1
Chairmen: Alexandru Boroiu, Csaba Antonya

Paper ID	Title / Authors
688	SMART SOLAR ELECTRIC TRICYCLE *Dahbi, Doubabi, Rachid*
486	DEVELOPMENT OF AN ADVANCED DRIVER ASSISTANCE SYSTEM... *Pantea, Girbacia, Girbacia*
586	PROGRAMMING AN AUTONOMOUS MINI-VEHICLE IN NARROW... *Giurgiu, Girbacia, Mogan*
462	ABOUT UNCONTROLLABLE REACTIONS OF THE DRIVER DUE TO SKIN... *Bogdan, Butnariu*
479	A METHOD FOR TRANSFORMING ELECTRIC VEHICLES TO BECOME... *Kocsis, Schultz, Zoellner, Mogan*
604	ASYMMETRIC ENCRYPTION FOR THE AUTONOMOUS VEHICLE *Davidescu, Negrus*

Technical Sessions

Thursday 27 October
9:00 -11:00

Room 1

Session 1.2
Chairmen: Cristian Andreescu, Adrian Clenci

Paper ID	Title / Authors
682	BALANCING OF A SINGLE STAGE RECIPROCATING COMPRESSOR... *Groza, Rosca, Radu*
590	MODELING THE ENERGY EVALUATION FOR AN ELECTRIC MACHINE *Croitorescu, Manta, Oprean*
708	THE CALCULATION ALGORITHM FOR THE DETERMINATION OF THE... *Mitran, Blaga, Moca, Dragomir, Fodor*
519	DEVELOPMENT OF A SEAT HEATING SYSTEM WITH FAR-INFRARED... *Ivanescu, Vieru, Neacsu, Serban, Tabacu*
697	STUDY ON THE SLIDING CONTACT BETWEEN... Abaitancei, Radu, Irimia, Grovu
698	MULTI-DOMAIN AND MULTI-BODY ANALYSIS OF A HYDROSTATIC... *Abaitancei, Radu, Tohoneanu, Husar*

Room 2

Session 2.2
Chairmen: Constantin Pana, Stelian Târulescu

Paper ID	Title / Authors
489	EXPERIMENTAL RESEARCH CONCERNING THE INFLUENCE OF THE... *Moldoveanu, Tang, Arama*
597	MODELING OF PERFORMANCES OF A VEHICLE EQUIPPED WITH... *Nisulescu, Ivan, Fratila, Banca*
598	MODELING THE PERFORMANCES OF A VEHICLE PROVIDED WITH A... *Banca, Ivan, Fratila, Nisulescu*
542	DIRECT INJECTION OF DIESEL AND ETHANOL IN A DIESEL... *Burnete, Iclodean, Moldovanu, Filip*
527	RESEARCHES ON COMBUSTION QUALITY FOR A SINGLE CYLINDER... *Tarulescu, Tarulescu*
639	CONSIDERATION ON THE IMPLICATIONS OF THE WLTC -... *Sibiceanu, Nicolae, Ivan, Iorga*

Room 3

Session 4.2
Chairmen: Ion Tabacu, Mario Trotea

Paper ID	Title / Authors
509	PRESENTATION OF TESTS WITH A DYNAMOMETER RELATED TO THE... *Butsch, Rescigno*
522	VALIDATION PROCEDURE FOR WORLDWIDE HARMONIZED LIGHT... *Varga, Burnete, Iclodean*
695	A DEVELOPMENT OF THE VALIDATION SYSTEM OF INDIRECT TPMS *Na, Shin, Lee, Lim*
501	WEIGHT OPTIMIZATION OF EXISTING TRANSMISSION HOUSING FOR... *Suresh Kumar, Kumar Singh*
642	SIMULATION ENVIRONMENT FOR FATIGUE ANALYSIS OF CAR WHEEL... *Grovu, Irimia, Rosca, Husar, Guiman*
499	NEW APPROACHES IN DESIGNING A RACE CAR CHASSIS FOR AN... *Furnea, Butnariu*

Room 4

Session 6.1
Chairmen: Willi Gruender, Gheorghe Mogan

Paper ID	Title / Authors
526	TECHNOLOGY TRENDS IN THE AUTOMOTIVE... *Paetzold*
524	VIBRATIONS DURING CENTERLESS GRINDING *Otto*
689	ADVANCED AUTOMOTIVE ASSEMBLY LINE TRENDS AS TOOLS IN... *Poparad*
655	DESIGN AND DEVELOPMENT OF CHASSIS ALONG WITH NOVEL UNDER... *Shah, Arora*
473	CLEANING METHODS FOR FLUX POLLUTION MEASUREMENT IN... *Bourgeais, Demarcq*
566	KEY CHARACTERISTICS OF THE WORLD CLASS MANUFACTURING... *Stirbu, Stirbu, Belu, Nicolae*

Room 5

Exhibitor/Sponsor Presentations

Technical Sessions

Thursday 27 October
11:30 -13:00

Room 1

Session 7.1
Chairmen: Eugen M. Negrus, V. Salan

Paper ID	Title / Authors
657	CARS CRASHES WITH CARS OF SAME OR DIFFERENT GENERATION –... *Ispas, Nastasoiu*
650	ESTIMATING THE COSTS CAUSED BY ROAD TRAFFIC ACCIDENTS IN... *Drosu, Cofaru*
700	VEHICLE DRIVER DROWSINESS MONITORING AND WARNING SYSTEM *Vesselenyi, Rus, Mitran, Tataru,...*
635	RESEARCH REGARDING THE INFLUENCE OF VEHICLE'S SAFETY... *Radu, Cofaru, Tolea, Trusca, Toganel*
570	STUDY REGARDING THE VISIBILITY GEOMETRY IN VEHICLES REAR... *Radu, Cofaru, Trusca, Tolea*

Room 2

Session 2.3
Chairmen: Anton Brunner, Nicolae Negurescu

Paper ID	Title / Authors
610	ENERGY-BASED APPROACH TO MODEL A HYBRID ELECTRIC VEHICLE... *Salloum, Francis, Mansour*
572	VALIDATION OF A HUMAN-AND-HARDWARE-IN-THE-LOOP... *Stoica, Bataus, Oprean*
521	DYNAMIC CONTROL OF AN ELECTRIC VEHICLE WITH TRACTION... *Georgescu*
707	A PROPULSION SYSTEM FOR MEANS OF TRANSPORT WITH... *Mitran, Chioreanu, Chioreanu, Rus, Beles*
608	CONTACTLESS BATTERY CHARGING FOR EV/HEV *Marinescu, Vintila, Marinescu*

Room 3

Session 4.3
Chairmen: Edward Rakosi, Istvan Barabas

Paper ID	Title / Authors
488	REINVESTIGATION OF THE ELECTROMAGNETIC VALVE TRAIN (EMVT)... *Trebehs, Groza*
734	GEOMETRIC CONSTRAINTS AT THE VALVE ACTUATION MECHANISM... *Stanescu, Dragomir, Pandrea, Clenci,...*
567	STUDIES REGARDING THE INFLUENCE OF THE SQUISH IN-CYLINDER... *Moldovanu, Borzan*
498	COMPARATIVE STUDY ON THE PERFORMANCES OF THE ONE-WAY... *Lazar, Chiru, Dogariu*
599	STUDY ON MIXTURE FORMATION AT AN EXPERIMENTAL SPARK... *Dogariu, Chiru, Tarulescu, Lazar, Stancu*
497	ASPECTS CONCERNING MODELING OF COMBUSTION FOR ... *Dogariu, Chiru, Tarulescu, Lazar*

Room 4

Session 3.2
Chairmen: Nicolae Filip, Daniela Florea

Paper ID	Title / Authors
728	COOPERATIVE SMART INTERSECTION AS AN ENABLER OF ADVANCED... *Coconea, Alcaraz, de Andrade*
716	BUS ROUTING SAFETY FOR THE TRANSPORTATION OF CHILDREN TO... *Chalkia, Grau, Bekiaris,...*
721	MATHEMATICAL ALGORITHM TOTAL TRAFFIC LIGHTS CYCLE... *Matei, Dumitru, Racila*
665	IMPROVING THE ROAD TRAFFIC REGULATION IN THE AREA OF... *Neagu, Boroiu, Vieru, Boroiu*
723	SKILLS AND COMPETENCES DEVELOPMENT FOR THE PROFESSIONALS... *Loukea, Bekiaris, Panou, Goger, Adesiyun*

Room 5

Exhibitor/Sponsor Presentations

Technical Sessions

Thursday 27 October
14:30 -16:30

Room 1

Session 7.2

Chairmen: Adrian Sachelarie, Dragos Dima

Paper ID	Title / Authors
467	IS THE VIRTUAL HOMOLOGATION FOR PEDESTRIAN PROTECTION... *Santos Cuadros, Alvarez Caldas, San...*
474	COMPARATIVE ANALYSIS OF KINEMATICS AND DYNAMICS... *Petrescu, Petrescu*
699	PEDESTRIAN DYNAMICS DURING THE CONTACT PHASE WITH THE... *Soica*
632	THE ASSESSMENT OF THE HEAD INJURY OF A PEDESTRIAN IN... *Tolea, Tarulescu, Trusca, Toganel, Radu*
727	STUDIES ABOUT THE BEHAVIOR OF A CAR... *Constantin, Iozsa, Fratila*

Room 2

Session 2.4

Chairmen: Corneliu Cofaru, Laurentiu Manea

Paper ID	Title / Authors
538	ELECTRONIC CONTROL SYSTEMS OF E-SMART VEHICLE *Tarulescu, Tarulescu*
539	BATTERY MANAGEMENT SYSTEM OF E-SMART VEHICLE *Tarulescu, Tarulescu*
612	THE INFLUENCE OF BIODIESEL ON ENGINE COMBUSTION AND CO2... *Benea*
741	PERFORMANCES OF ENGINES FUELED WITH BIODIESEL OF RAPESEED... *Um Min Allah, Bica, Tutunea, Dima*
585	STUDY OF SOME TRIBOLOGICAL ASPECTS OF THE CHARGING SYSTEM... *Kocsis, Balcau, Cazila*
540	INFLUENCE OF SPEED AND GEOMETRY ON... *Papuc, Velicu, Brands, Schlerege*

Room 3

Session 4.4

Chairmen: Ioan Teleaga, Michael Butsch

Paper ID	Title / Authors
461	NOVEL SIMULATION METHODOLOGY FOR THE ESTIMATION OF THE... *Ciobanas*
667	NUMERICAL AND EXPERIMENTAL INVESTIGATIONS OF A TWIN SHEET... *Tabacu, Diaconescu, Oltean*

574	EXPANDED POLYPROPYLENE FINITE ELEMENT ANALYSIS IN... *Schwarz, Runcianu, Gebhardt*
506	COMPARATIVE STUDY ON THE PERFORMANCES OF AERODYNAMIC... *Huminic, Huminic, Carauleanu, Ciolofan*
680	THE STUDY OF THE AERODYNAMIC BEHAVIOR... *Cioroianu, Tabacu, Iorga*
532	ESTABLISHING THE 3D PROFILE OF VEHICLE CAR BODY ELEMENTS... *Tudor, Radu, Manea*

Room 4

Session 3.3

Chairmen: Elena Neagu, Ilie Dumitru

Paper ID	Title / Authors
460	ANALYSIS OF THE INFLUENCE OF ONE-WAY STREETS ON THE URBAN... *Florea, Covaciu, Timar*
659	TRAFFIC OPTIMIZATION IN URBAN AREA - ROUNDABOUT VERSUS... *Filip, Golgot*
592	STUDY ON THE INFLUENCE OF INTERSECTIONS WITH FOREST ROADS... *Bratu, Covaciu*
528	URBAN TRANSPORTATION SOLUTIONS FOR THE CO2 EMISSIONS... *Tarulescu, Tarulescu*
581	STUDY REGARDING INDICATORS OF AIR POLLUTION CAUSED BY... *Chereches*

Room 5

Students Presentations

Chairmen: Hanna Peter-Regar, Silviu Butnariu

Paper ID	Title / Authors
601	PHASE FIELD SIMULATION OF NORMAL GRAIN GROWTH *Dimokrati, Benyoucef*
603	PHASE FIELD MODELING OF THE MICROSTRUCTURE EVOLUTION IN... *Boualy, Mharzi, Benyoucef, Le Bouar*
544	WINDING TECHNOLOGY FOR CARBON FIBER LINERS *Tamasan, Carabulea, Rad, Chiru*
546	RECYCLED CARBON FIBRE MANUFACTURING TECHNOLOGIES FOR... *Carabulea, Tamasan, Rad, Chiru*
737	THE MECATHRONIC CONTROL SYSTEM OF VEHICLE'S PNEUMATIC... *Serban, Manea, Manea*

Technical Sessions

Thursday 27 October
16:45 -18:15

Room 1

Session 7.3
Chairmen: Stefan Tabacu, Adrian Sachelarie

Paper ID	Title / Authors
456	CRASH TESTS DATA ACQUISITION AND PROCESSING *Covaciu, Dima*
471	ASPECTS REGARDING THE ANALYSIS AND RECONSTRUCTION OF CAR... *Stoica, Radulescu, Neagu, Trocan, Copae*
674	DETERMINATION OF KINEMATIC AND DYNAMIC BEHAVIOUR IN THE... *Otat, Dumitru, Otat, Dumitru*
510	THE IMPORTANCE OF CONSUMED ENERGY FOR DEFORMATION IN... *Clinciu, Chiru, Ciunel*
735	THE EXPERIMENTAL ANALYSIS AND... *Manea, Manea, Dima*

Room 2

Session 4.6
Chairmen: Gheorghe Mogan, Radu Velicu

Paper ID	Title / Authors
618	EVALUATION BY EXPERIMENTAL METHODS OF THE PARAMETERS... *Todorut, Cordos, Barabas, Mihet*
530	BELT LOSSES EVALUATION FOR A PUSH-BELT CVT *Croitorescu, Cuciurean, Oprean*
470	POSSIBILITIES FOR THE STUDY OF ENGINES FUNCTIONING BASED... *Stoica, Radulescu, Neagu, Trocan, Copae*
547	ASPECTS REGARDING THE KINEMATIC OPTIMIZATION OF A TRACKED... *Alexa, Vilau, Ilie, Voicu, Marinescu*
651	EXPERIMENTAL RESEARCHES ON THE MAGNETO-RHEOLOGICAL... *Dobre, Vasiliu, Andreescu*

Room 3

Session 4.5
Chairmen: Michael Elicker, Cristian Andreescu

Paper ID	Title / Authors
648	SYSTEMS ENGINEERING REQUIRES DIGITAL TWINS OF MACHINE... *Gruender*
595	ESTIMATION OF BOILING POINTS OF BRAKE FLUIDS *Barabas, Todorut, Cordos*
690	METHODS FOR MODELING OF AN ELASTIC SYSTEM WITH ... *Poparad*

478	VALIDATION OF KINEMATIC SIMULATION OF SPROCKET CONTACTS... *Shalaby, Corciova, Lache*
517	MODELLING AND OPTIMIZATION OF CONSTRUCTIVE FORM FOR... *Orzan, Buzatu*

Room 4

Session 6.2

Chairmen: Mircea Oprean, Nicolae Boicea

Paper ID	Title / Authors
662	POTENTIAL CAPABILITIES OF SHAPE MEMORY DRIVEN... *Strittmatter, Guempel, Lattner*
468	THE EVALUATION OF RHEOLOGICAL PROPERTIES OF COMPOSITES... *Stanciu, Curtu, Groza, Savin*
553	OPTIMIZATION OF THE PLASTIC INJECTION MOLDING... *Braga, Nedelcu*
555	APPLICABILITY OF COMPOSITE FORMING TECHNOLOGIES FOR... *Rad, Chiru*
556	CONSTRUCTIVE OPTIMIZATION OF COMPOSITE MATERIALS... *Chiru, Rad*

Room 5

Students Presentations

Chairmen: Hanna Peter-Regar, Silviu Butnariu

Students Presentations	
Paper ID	Title / Authors
617	COORDINATION OF TRANSPORT ACTIVITIES AIDED BY INTELLIGENT... *Ionita*
739	BRIZAR - A DIDACTICAL AND ECOLOGICAL PROTOTYPE *Raducan, Serban, Manea, Manea*
740	BOBY SMART - A DIDACTICAL PROTOTYPE *Aedin, Aptichelean, Burlacu,...*
621	DESIGN AND CONSTRUCTION OF A RACE CAR *Gavriloae, Barabas, Aftanasa*

Technical Sessions

Friday 28 October
9:00 -11:00

Room 1

Session 7.4
Chairmen: Nicolae Ispas, Gheorghe Mogan

Paper ID	Title / Authors
516	EXAMPLE OF A HIGH-SPEED, SIDE-IMPACT, CAR CRASH... Simionescu, Preda
512	ASPECTS REGARDING THE RECONSTRUCTION OF TRAFFIC EVENTS Clinciu, Chiru, Ciunel
571	RESEARCH REGARDING OCCUPANT'S MOVEMENT IN THE CASE OF... Radu, Cofaru, Tolea, Trusca, Beles
630	RESEARCH REGARDING PEDESTRIAN VISIBILITY DURING... Tolea, Trusca, Antonya, Radu, Dima

Room 2

Session 4.8
Chairmen: Adriana Teodora Manea, Mircea Nastasoiu

Paper ID	Title / Authors
670	KINEMATIC AND DYNAMIC STUDY OF A MECHANISM FOR A VEHICLE... *Dumitru, Copilusi, Geonea, Margine*
733	EXPERIMENTAL INVESTIGATION OF A VEHICLE BEHAVIOR USING... *Dumitru, Racila, Tutunea, Matei,...*
496	THERMODYNAMIC PROCESS MODELING IN PRESSURE WAVE... *Costiuc, Chiru*
742	NUMERICAL SIMULATION STUDY OF A HYBRID ROAD VEHICLE... *Lontis, Mihon, Vetres*
743	DIAGNOSIS OF THE UNIT INJECTION PUMP'S ELEMENTS *Mihon, Erdodi, Lontis*

Room 3

Session 4.7
Chairmen: Simona Lache, Manfred Kraus

Paper ID	Title / Authors
561	SIMULTANEOUS INFLUENCES OF TYRE PRESSURE AND STEERING... *Nastasoiu, Ispas*
505	EQUIPMENT AND METHODS USED FOR ASSESSMENT OF THE... *Mitroi, Chiru*

504	ANALYSIS OF THE COMFORT OF THE SEATS USED IN LIGHT... *Mitroi, Chiru*
568	ASPECTS CONCERNING MODELING AND SIMULATION OF A CAR... *Dumitru, Preda, Mogan*
629	KINEMATIC OPTIMIZATION OF THE RACK AND PINION... *Mazilu, Preda*
671	DESIGN OF A VEHICLE FOR DISABLED PEOPLE MOTION *Dumitru, Geonea, Copilusi*

Technical Sessions

Friday 28 October
9:00 -11:00

Room 4

Session 6.3
Chairmen: Sorin Vlase, Doru Coman

Paper ID	Title / Authors
466	QUALITY MANAGEMENT PRINCIPLES AND THEIR INCINDENCE... *Mihail*
513	PRODUCT QUALITY CONTROL OPTIMIZATION FOR SELECTION OF... *Buzatu, Orzan*
565	IMPROVEMENT OF THE 8D ANALYSIS THROUGH A SYSTEM BASED ... *Nicolae, Ionescu, Belu, Stirbu*
644	A CASE STUDY REGARDING THE IMPLEMENTATION OF SIX SIGMA ... *Dumitrascu, Dumitrascu, Chiru*
736	ANALYSIS OF THE CAR BODYWORK... *Manea, Manea, Tudor*
738	ANALYSIS OF THE MID DAY TEMPERATURE... *Manea, Manea, Radu, Dima*
744	TRIBOSYSTEMS MODELING WITH RECIPROCATING SLIDING *Postaru, Postaru, Ceban*

Musical Moments

Tuesday, 25 October, 19:00	**– Opening Ceremony; ASTRA Choir**
Wednesday, 26 October, 9:00	**– Serban Valentin (Violin), Muresan Valentin (Piano)**
Wednesday, 26 October, 19:00	**– Szocs Botond (Piano)**
Thursday 27 October, 18:30	**– Organ Concert at Black Church**
Friday, 28 October, 13:00	**– Closing Ceremony; Madalina Bourceanu – canto**

Technical Visits

Technical visits will be organized on 28 october at the following companies located in Brasov area:

- **SCHAEFFLER Romania,**
- **CONTINENTAL Powertrain Romania,**
- **AUTOLIV Romania,**
- **DRAEXLMAIER Romania.**

The participants can apply for the technical visits at the Registration desk.

SCHAEFFLER ROMANIA

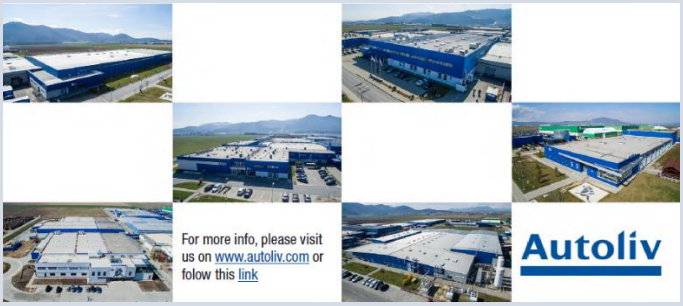
Schaeffler Romania is one of the top production units of the Schaeffler Group, which is a leading global provider of bearing solutions, of linear and direct drive technology, as well as a renowned supplier to the automotive industry. The Schaeffler Group, with it's brands INA, LuK and FAG, has more than 80.000 employees in 170 locations worldwide, generating a

.

CONTINENTAL POWERTRAIN ROMANIA

BU Fuel & Exhaust Management
Brasov Plant

AUTOLIV ROMANIA



Autoliv Romania was set up in 1997 in Brașov and it is increasing ever since with new business lines in Brașov, Lugoj, Timișoara, Sfântu Gheorghe and Reșița. Up to now it has reached over 9 700 employee in Romania and it is still growing fast.

DRÄXLMAIER ROMANIA

DRÄXLMAIER Group has been present on the Romanian market since 1993, being now one of the biggest employers in the country, with 15.000 employees. The group has production units in five Romanian cities: Satu Mare, Pitesti, Timisoara, Hunedoara and Brasov.

The City

The Brasov city, capital of region Brasov, with a population of little less than 300.000 inhabitant's, first mentioned in documents back in 1235, as a medieval fortress, build over a former Neolithic settlement, is situated in central region of Romania, at the base of Tampa Hill and surrounded by the Carpathians.

During its history, the city was also known as Brasco, Brasso, Stephanopolis, Kronstadt, **and Brasov**.

The old fortifications and the remnants of the famous fortress-city lure tourists from everywhere: The Weaver's Bastion, as the oldest bastion in the country, The Black and White Towers, The Catherine's Gate, The Black Church as the most important Gothic monument in Eastern Europe with an astonishing organ, and many more. The city bears the marks of being the Romanian centre of culture and civilization for hundreds of years: The First Romanian School, the first written document in Romanian housed by the Weaver Bastion, the oldest building in town: The Church of St.Batholomeu, founded in 1241, the oldest of the medieval authorities, The Old City Hall (see picture below) and so on.

Situated at the crossroad between Transylvania and Wallachia, Brasov offers its resort centre, Poiana Brasov, for businessmen and tourists equally.

The University

Transilvania University of Brasov

Automotive and Transportation Department

The beginning and development of higher education in the Brasov city origin from the old cultural traditions and intense cultural climate.

The following are several turn points in the University's history:
1940 – Academical education has been founded in Brasov, as part of Commercial and Industrial Study Academy;
1949 - Mechanical Institute has been founded, by the initiative of the Romanian Engineer Association;
1965 – The first Didactic staff Scientific CONAT Session has been attained;
1971 –University of Brasov was formed by the union of Polytechnic and Pedagogic Institutes from Brasov;
1974 – Participation of the first Didactic staff of the Vehicles and Tractors Department at the FISITA International Congress (ed.XV - May '74, Paris);
1974-1977 -The Staff of Vehicles and Tractors Department designed and developed the first small litre vehicle prototype;
1979-1981 - The Staff of Vehicles and Tractors Department designed and homologated the first Diesel engines for ROMAN, TRACTORUL and MASTER;
1990 - University of Brasov renamed to Transilvania University of Brasov;
1990 - Foundation of SIAR Society and its affiliation to FISITA;
1990 – Apparition of RIA Automotive Magazine;
1992–2010 - Participation to FISITA and EAEC International Congresses located in London, Prague, Paris, Seoul, Beijing, Barcelona, Cernobio, Yokohama, Bratislava, Budapest and München;
1994 – Designing, developing and homologating a Street sweeper in cooperation with Fachhochschule Konstanz;
1995–2010 - Scientific Research Programs in collaboration with Technical Universities of Konstanz, Aachen, Zwickau and Karlsruhe;
1996 – SIAR – SAE Partnership established;
1997 and 2004 - Brasov FISITA Board reunion;
1997–2001 - SAE Diplomas in recognition of professional activity;
1997–2009 - Participation to Detroit SAE Congresses;
2000 - The first International SAE-SIAR Symposium accomplished in cooperation with SAE International in Upside Moeciu;
2006 – Partnership with Wayne State University, Detroit;
2006-2008 - Development of Research Platform Advanced Systems for Autovehicles and Transport – SAVAT;
2005-2007 – Participation to Mini Baja Student Competition;
2007 – Continuous scientific activity on accident reconstruction, run by the members of Automotive and Engines Department, resulted in the first crash experiments at Transilvania University, Mechanical Engineering Faculty.
2009, 2010 – Participation at Silverstone and Catalonia to the Formula SAE Competition for students;
2010 – Inauguration of the modern Engines Research Centre;

In present Transilvania University maintains partnership with more than 160 educational centers and universities from E.U., U.S. and Asia such as: Fachhochschule Konstanz, RWTH – Aachen, Karlsruhe University - Germany, Compiegne, Belfort-Montbeliard - France, Gent - Belgium, Wayne State University - U.S.

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