“Există o singură Românie: există un singur corp şi un singur suflet, în care toţi nervii şi toate suspinele vibrează unul către altul.”

Bogdan Petriceicu Hașdeu
The Bosch Group, a leading global supplier of technology and services, offers innovative solutions to the automotive industry, connected mobility and connected industry. It uses its expertise in sensor technology, software and services, as well as its own IoT cloud to offer its customers connected, cross-domain solutions from a single source.

Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "invented for life".

Event organized with the support of the City Hall and Local Council of Cluj-Napoca
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The information contained in this program is based on material available at the time the program was put on press. The schedule content, list of participants, and other details may change due to cancellations, additions, or other modifications beyond the control of the Organizing Committee. For any further information, please contact the congress secretary office.
Welcome to the Congress

Congratulatory Message

Heartiest congratulations to the organizers of “IV International Congress of Automotive and Transport Engineers” (AMMA 2018), to be held in Cluj-Napoca, Romania during October 17-19, 2018. The theme of this year’s Congress is “Automobiles, Mobility, Modeling, and Alternative Solutions”, a very relevant and topical subject for not only Romanian but global mobility practitioners.

During the three-day event, engineers, academicians, engineering students, and others are likely to discuss and exchange information on new and current cutting-edge technologies and develop ideas for future developments. The participants will be able to update their current knowledge and skills by attending specific focused technical sessions, and most importantly network with potential partners, suppliers, and technology providers.

We, at SAE International, are proud to be a partner with SIAR both directly and through FISITA because we understand the value of such events. SAE International had 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.

I want to acknowledge the hard work of all involved for helping to make this event a success. I want to recognize and congratulate the contributing members of Technical University of Cluj-Napoca and 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.

Murli M. Iyer
Executive Advisor – Global
SAE International
Vice President – Americas & Africa (FISITA)
Welcome to the Congress

Congratulatory Message

On behalf of SAE International, I want to congratulate the organizers of the IV International Congress of Automotive and Transport Engineering.

This event has become an important venue for professionals to gain insight into the future of the automotive industry and discuss the solutions that will help move the industry forward. In addition, this event enables participants to update their skills and knowledge through dynamic discussions and network with potential new partners and clients.

SAE International is proud to co-host this event and I am sure that 2018 will be another tremendous success.

Mulțumesc și, din nou, felicitări! (Thank you and, again, congratulations!)

David L. Schutt, PhD
CEO
SAE International
Welcome to the Congress

Welcome Address

The automobile is currently undergoing a transformation of both, his role and his structure: the coach with piston engine radically changes to a means of shared mobility, with distinct attributes: autonomous driving, digitalization, connectivity, total or partial electrification of the propulsion system.

However, autonomous driving is strongly dependent on IT safety, menaced by hacker or system failure. Digitalization means more than fifty electronic control units on board, accomplishing six thousand functions by means of sensors and actuators in conditions of strong temperature variations, humidity, shocks and impurities or insects in the air. Connectivity is given in a frequency range between 1 Megahertz and 10 Gigahertz, which creates at least problems of magnetically susceptibility. Electric cars with battery or hydrogen-based fuel cells are generally seen as the rescuer of the future mobility of the world, but the electric energy as well as the hydrogen are generated worldwide mostly from coal and natural gas, emitting carbon dioxide. Regenerative fuels, such as ethanol or dimethyl ether for piston engines could be sufficient for world mobility, the carbon dioxide emission being recyclable and the nitrogen oxide from combustion very low, but this seems to be yet generally ignored.

Under such complex and contradictory conditions, the development of future automobiles needs not only specialists in mechanical and electrical engineering, but also experts in informatics, electronics, physics or mathematics. Their strong interference is mandatory.

The AMMA 2018, as the fourth International Congress of Automotive and Transport Engineering, organized by the Technical University of Cluj-Napoca under the patronage of SAE International, FISITA and SIAR, is well centered on the mentioned topics: cyber physical systems in automobiles, electric and hybrid propulsion, advanced automotive engineering and manufacturing technologies, new materials, transportation engineering, green vehicle solutions.

The 143 papers, written by national and international authors, are compiled in a Proceedings Volume, which is edited by the prestigious Springer International Publishing House.

The Congress is intended to be a large scientific platform of advanced automotive engineering for researchers, engineers and students.

Dear participant, enjoy the interesting matter of the presentations, the strong interdisciplinary knowledge and the excellent frame offered by the organizers at the Technical University of Cluj-Napoca.

Professor Cornel Stan
Fellow of SAE International
President of the Scientific Committee
Welcome to the Congress

The annual congress of SIAR: AMMA, October 17-19, 2018, Technical University of Cluj-Napoca

The Society of Automotive Engineers of Romania (SIAR) is a professional organization founded in 1990 which took over the work of the Romanian Association of Automotive Engineers (AIAR), created in 1988. In my opinion, its existence marks the fact that the Romanian automotive branch is organized in order to create proper conditions for a dialogue whose main actors are the specialized structures of the state, the automotive industry, the educational system.

To serve this purpose, amongst other enterprises, SIAR organizes annually under the patronage of Fédération Internationale des Sociétés d’Ingénieurs des Techniques de l’Automobile (FISITA), an international congress, which is an opportunity for participants to:

- exchange information in specific areas of the automotive and transport industry by hearing various scientific papers;
- update technical and scientific information on automotive industry dynamics thanks to technical site visits;
- establish new contacts in order to develop/strengthen scientific relationships with partners from the academic and industrial environments from Romania and abroad.

This year, SIAR congress is organized by the Technical University of Cluj-Napoca and its keywords are the following: Automobiles, Mobility, Modeling and Alternative solutions. In short: AMMA.

AMMA Congress, reaching its 4th edition this year, is part of a series of similar scientific events organized by SIAR and held successively by various universities in the country with interests in Automotive and Transport Engineering (University of Pitesti – CAR, Transilvania University of Brasov – CONAT, University “Politehnica” of Bucharest - ESFA, University of Craiova - SMAT, Polytechnic University of Timisoara - MVT).

This very prominent scientific event is very special to us all as it is SIAR’s way to celebrate 100 years since Romania’s great union. Therefore, SIAR joined the national motto this year (“Celebrating together”) however, without forgetting that, in fact, union has to be built every day.

Like all other editions of SIAR conferences, AMMA congress will not be only a festive event but I am sure it will serve as a true workshop, characterized by a quality scientific dialogue which will contribute to enriching the participants' experiences.

Finally, I would like to thank to all the people who engaged in order to have at the Technical University of Cluj-Napoca on October 17-19, what I consider to be the scientific event of this very special year for Romania in the field of Automotive and Transport Engineering. Also, congratulations to the participants for the fact that they chose to get involved and I wish them constructive debates during our congress!

Adrian CLENCI
SIAR President
Welcome to the Congress

AMMA 2018 – a special event dedicated to the centenary

The “AMMA2018 - Automobiles, Mobility, Modeling and Alternative solutions 2018” international congress is a renown scientific event that takes place in Cluj-Napoca in the year in which the Romanian people celebrates 100 years since the Great Union of Romania in 1918, one of most important moments in our nation’s history. The congress is one of the special events of this celebration.

The hosts of the Congress are SAE International (Society of Automotive Engineers), a globally active professional association and standards developing organization for engineering professionals in various industries and the Department of Automotive Engineering and Transportation of the Technical University of Cluj-Napoca, a landmark of excellence in applied and fundamental research in the field of automotive, recognized both locally and internationally.

The contemporary society is characterized by mobility of ideas, goods and people, some of the main driving elements of human society, in which the automotive industry plays an important role.

AMMA 2018 International Congress aims to debate and identify solutions for the current challenges of the automotive field in a dynamic scientific environment that is validated by the participants from the academic, social and public fields, both local and from abroad.

The AMMA 2018 Congress seeks to bring together, in a high-quality framework, researchers with scientific papers, innovations and new ideas in the automotive, environment and transport fields. Consequently, the congress is an opportunity to discover the latest technical developments in the automotive industry, to take part in exhibitions and workshops, to present technical papers and last, but not least, it is an opportunity for students to participate in student competitions in the fields of vehicle dynamics and computer assisted design.

The annual congresses of the Society of Automotive Engineers of Romania (SIAR), organized under the high patronage of FISITA (International Federation of Automotive Engineering Societies) and SAE have always succeeded to capture our attention, the specialists from various fields (research, design, manufacturing etc.) and to make all of us who dream of a better society, of a cleaner environment want to meet again.

At its 4th edition in Cluj-Napoca, the congress is already a traditional event. All events connected with the AMMA 2018 Congress make Cluj-Napoca, even for a few days, an international center for automobiles, by offering data, information and contact possibilities for all major issues that impact on the automotive industry and the environment.

Let us all gather our energies at AMMA 2018!

Professor Dr. Eng. Nicolae BURNETE
Congress President
Senate President of the Technical University of Cluj-Napoca
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Mihai BOLDIJAR – President Robert Bosch Romania

Vasile ȚOPA – Rector of the Technical University of Cluj-Napoca

Gheorghe-Alexandru RADU – Professor, Member of Academy of Technical Sciences of Romania

Dorel BANABIC – President of the Technical Sciences Section of the Romanian Academy

Aurel CHERECHEȘ – Prefect of Cluj

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Adrian CLENCI – SIAR President

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Gabriel SICOE – President of ACAROM

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Călin PRODAN
Manolin JURCHIȘ
Vistrian MĂTIEȘ
# Breakdown of Program

## Tuesday, 16 October

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>18:00–20:00</td>
<td>Welcome reception</td>
<td>Faculty of Automotive Engineering, Mechatronics and Mechanics</td>
</tr>
</tbody>
</table>

## Wednesday, 17 October

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30–10:20</td>
<td>Registration of Participants</td>
<td>Faculty of Automotive Engineering, Mechatronics and Mechanics</td>
</tr>
<tr>
<td>10:30–11:00</td>
<td>Opening Ceremony</td>
<td>Centenary Auditorium</td>
</tr>
<tr>
<td>11:00–12:45</td>
<td>Plenary Session</td>
<td>Centenary Auditorium, p. 14</td>
</tr>
<tr>
<td>12:45–13:00</td>
<td>Lunch Break</td>
<td>Restaurant of Grand Hotel Italia</td>
</tr>
<tr>
<td>13:30–15:00</td>
<td>Lunch Break</td>
<td>Restaurant of Grand Hotel Italia</td>
</tr>
<tr>
<td>16:00–16:30</td>
<td>Keynote presentation 1</td>
<td>Room D08a, p. 22</td>
</tr>
<tr>
<td>16:30–17:45</td>
<td>Hybrid and Electric Vehicles I</td>
<td>Room D08b, p. 15</td>
</tr>
<tr>
<td></td>
<td>Powertrain and Propulsion I</td>
<td>Room D08a, p. 16</td>
</tr>
<tr>
<td></td>
<td>Advanced Engineering, Software and Simulation I</td>
<td>Room C203, p. 17</td>
</tr>
<tr>
<td></td>
<td>Road Safety, Traffic Control and Transportation Engineering II</td>
<td>Room D09d, p. 19</td>
</tr>
<tr>
<td></td>
<td>Manufacturing Technologies and Materials I</td>
<td>Room D09f, p. 20</td>
</tr>
<tr>
<td></td>
<td>Green Vehicle Solutions I</td>
<td>Room E13b, p. 21</td>
</tr>
<tr>
<td></td>
<td>Advanced Engineering, Software and Simulation III</td>
<td>Room E13c, p. 18</td>
</tr>
<tr>
<td>16:30–18:30</td>
<td>SIAR meeting</td>
<td>Centenary Auditorium</td>
</tr>
<tr>
<td>16:30–17:45</td>
<td>Workshop 1</td>
<td>Council Hall, p. 36</td>
</tr>
<tr>
<td>16:30–18:30</td>
<td>Portable Emission Measurement System Romanian Automotive Register</td>
<td>Lecture Hall A11</td>
</tr>
<tr>
<td>17:45–18:00</td>
<td>Refreshment Break</td>
<td></td>
</tr>
<tr>
<td>18:00–19:00</td>
<td>Road Safety, Traffic Control and Transportation Engineering I</td>
<td>Room D08b, p. 15</td>
</tr>
<tr>
<td></td>
<td>Powertrain and Propulsion II</td>
<td>Room D08a, p. 16</td>
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<tr>
<td></td>
<td>Advanced Engineering, Software and Simulation II</td>
<td>Room C203, p. 17</td>
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<tr>
<td></td>
<td>Road Safety, Traffic Control and Transportation Engineering III</td>
<td>Room D09d, p. 19</td>
</tr>
<tr>
<td></td>
<td>Manufacturing Technologies and Materials II</td>
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</tr>
<tr>
<td></td>
<td>Green Vehicle Solutions II</td>
<td>Room E13b, p. 21</td>
</tr>
<tr>
<td></td>
<td>Advanced Engineering, Software and Simulation IV</td>
<td>Room E13c, p. 18</td>
</tr>
<tr>
<td>19:30–21:30</td>
<td>Dinner</td>
<td>Restaurant of Grand Hotel Italia</td>
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</tbody>
</table>
## Breakdown of Program

### Thursday, 18 October

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>9:00–9:30</td>
<td>Keynote presentation 2</td>
<td>Room D08a, p. 22</td>
<td></td>
</tr>
<tr>
<td>9:30–11:15</td>
<td>Hybrid and Electric Vehicles II</td>
<td>Room D08b, p. 23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Powertrain and Propulsion III</td>
<td>Room D08a, p. 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advanced Engineering, Software and Simulation V</td>
<td>Room C203, p. 28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Road Safety, Traffic Control and Transportation Engineering IV</td>
<td>Room D09d, p. 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manufacturing Technologies and Materials III</td>
<td>Room D09f, p. 33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green Vehicle Solutions III</td>
<td>Room E13b, p. 35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Powertrain and Propulsion IV</td>
<td>Room E13c, p. 25</td>
<td></td>
</tr>
<tr>
<td>9:30–13:00</td>
<td>SIAR National Student Contests</td>
<td></td>
<td>p. 37</td>
</tr>
<tr>
<td></td>
<td>Vehicle Dynamics</td>
<td>Lecture Hall A117</td>
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<tr>
<td></td>
<td>Automotive Computer Aided Design</td>
<td>Room B307</td>
<td></td>
</tr>
<tr>
<td>9:30–10:45</td>
<td>Workshop 2</td>
<td>Porsche Hall, p. 36</td>
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</tr>
<tr>
<td>11:15–11:30</td>
<td>Refreshment Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30–12:30</td>
<td>AVL – Technical Presentation</td>
<td>Council Hall</td>
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</tr>
<tr>
<td>13:30–15:00</td>
<td>Lunch Break</td>
<td>Restaurant of Grand Hotel Italia</td>
<td></td>
</tr>
<tr>
<td>15:30–18:00</td>
<td>Technical visit – Bosch</td>
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<td>p. 38</td>
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<tr>
<td>16:00–17:45</td>
<td>Workshop 3</td>
<td>Lecture Hall A11, p. 36</td>
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</tr>
<tr>
<td>19:00–22:00</td>
<td>Gala Dinner</td>
<td>Restaurant of Grand Hotel Italia</td>
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### Friday, 19 October

<table>
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<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Page</th>
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<tbody>
<tr>
<td>9:00–9:30</td>
<td>Closing Ceremony</td>
<td>Grand Hotel Italia</td>
<td></td>
</tr>
<tr>
<td>10:00–16:00</td>
<td>Technical visit – STC Star Transmission</td>
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<td>p. 38</td>
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<tr>
<td>14:00–14:30</td>
<td>Lunch</td>
<td>Sebes</td>
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</table>
Exhibition

Wednesday, 17 October – Friday, 19 October

Faculty of Automotive Engineering, Mechatronics and Mechanics
Program

Tuesday, 16 October
18:00 – 20:00  Welcome of participants

Faculty of Automotive Engineering, Mechatronics and Mechanics
Porsche Hall

Wednesday, 17 October

Opening Ceremony and Plenary Session
Centenary Auditorium

10:30 – 11:00  Opening Ceremony

Plenary session

11:00 – 11:30  AUTOMATED DRIVING AND ELECTROMOBILITY
Oliver SCHATZ, Senior Vice President Technical,
Robert Bosch KFT.

11:30 – 12:00  FUTURE MOBILITY
Dirk LAPPE, Managing Director,
Porsche Engineering Group GmbH

12:00 – 12:30  THE FUTURE AUTOMOBILES NEW ROLES AND
STRUCTURES
Prof. Dr.-Ing. habil. Prof. E.h. Dr. h.c. mult. Cornel Stan,
Fellow of SAE International,
President of the Scientific Committee AMMA 2018

12:30 – 12:45  SMART MOBILITY
Dragos NEDELEA,
Business Development Manager, Telekom Romania

12:45 – 13:00  BOOK LAUNCH

13:30 – 15:00  Lunch
Restaurant of Grand Hotel Italia
Program

Wednesday, 17 October

Hybrid and electric vehicles I

Chairmen: Mircea OPREAN
Nicolae ISPAS

16:30 – 16:45 Numerical Simulation of the Mechanical Models Used for the Coupling of the Power Sources
Dinel Popa, Irina Tudor, Nicolae Dora Stanescu, Claudia Mari Popa

16:45 – 17:00 The Influence Analysis of the Acceleration Regimes on the Specific WLTC Test Cycle Regarding the Fuel Consumption and Pollutant Emissions for a Vehicle Equipped with a GMPDH
Gheorghe Banca, Florian Ivan, Daniel Iozsa, Valentin Nisulescu

17:00 – 17:15 Performance Evaluation of an Electric Vehicle in Real Operating Conditions of Quito, Ecuador
Juan Pablo Diaz-Samaniego, Jaime Guillen, Daniel Arroyo, Michael Maks Davis

17:15 – 17:30 Comparison and Behavior Analysis in Relation to Autonomy of Urban Driving Cycle for Compact Class Full Electric Vehicle Using ADVISOR Numerical Simulations
Nicolae Stelian Lontis, Liviu Nicolae Mihon

17:30 – 17:45 Steady State Engine Efficiency Specific to Series Hybrid Electric Vehicles
Cristian Ioan Leahu, Stelian Tarulescu, Sebastian Radu

17:45 – 18:00 Refreshment break

Road safety, traffic control and transportation engineering I

Chairmen: Ion PREDA
Elena NEAGU

18:00 – 18:15 Explanatory Models of the Weather Factors’ Influence on Road Traffic Accidents Produced in Romania in Different Road’s Features
Alin Drosu, Corneliu Cofaru, Daniel Geonea, Gabriel Marinescu

18:15 – 18:30 The Monitoring of the Submarine Effect in Frontal Collisions, at Different Impact Speeds and for the Driver’s Out of Position Instances
Oana Victoria Otat, Victor Otat, Dragos Tutunea, Ionut Daniel Geonea, Gabriel Marinescu

18:30 – 18:45 The overlap Influence in Case of a Car-to-Pedestrian Accident
Bogdan Tolea, Alexandru Ionut Radu, Horia Beles

18:45 – 19:00 The Significance and Effect of the Traffic System Signaling to the Environment, Present and Future Traffic
Henrietta Lengyel, Zsolt Szalay

19:30 – 21:30 Dinner

Restaurant of Grand Hotel Italia
Program

Wednesday, 17 October

Room D08a

**Powertrain and Propulsion I**

*Chairmen:* Constantin PANĂ
Ilie DUMITRU

16:30 – 16:45
AMMA 2018_POW01
Influence of Dwell Time for Double Injection Strategies in a Wall Guided GDI Engine
Adrian Irimescu, Simona Silvia Merola

16:45 – 17:00
AMMA 2018_POW02
Functional Analysis of a Gasoline Injection Engine
Laszlo Barothi, Daniel Sava, Dumitru Catalin Darie, Leonard Iulian Cucu, Ion Copae

17:00 – 17:15
AMMA 2018_POW03
Potential Performance Characteristics for Different Types of Tractors: Two-wheel-drive Tractor, Four-wheel-drive Tractors and Crawler Tractors
Mircea Nastasoiu, Nicolae Ispas

17:15 – 17:30
AMMA 2018_POW04
An Experimental Research on Power Losses into an Automotive Manual Transmission
Adrian Budala, Adrian Soica

17:30 – 17:45
AMMA 2018_POW05
Optimization of Cooling System for Internal Combustion Engines
Radu Tarulescu, Stelian Tarulescu, Adrian Soica

17:45 – 18:00
*Refreshment break*

**Powertrain and Propulsion II**

*Chairmen:* Edward RAKOȘI
Florian IVAN

18:00 – 18:15
AMMA 2018_POW06
Availability Analysis of Alternative Fuels for Compression Ignition Engine Combustion
Jonathan Mattson, Christopher Depcik

18:15 – 18:30
AMMA 2018_POW07
Usage of Electric Motors/Generators for Engines Supercharging in order to Increase the Efficiency of Exhaust Gas Energy Recovery
Cristian Ioan Leahu, Sebastian Radu, Stelian Tarulescu, Radu Tarulescu

18:30 – 18:45
AMMA 2018_POW08
Butanol Effects on the Fuelled Diesel Engine Operation with Preheated Diesel Fuel-Animal Fat Blends
Alexandru Cernat, Constantin Pana, Niculae Negurescu, Nikolaos Cristian Nutu, Adrian Nicolici

18:45 – 19:00
AMMA 2018_POW09
LPG as Alternative Fuel for Clean Automotive Diesel Engines
Liviu Nemoianu, Constantin Pana, Niculae Negurescu, Alexandru Cernat, Dinu Fioarescu, Nikolaos Cristian Nutu

19:30 – 21:30
*Dinner*

Restaurant of Grand Hotel Italia
**Program**

**Wednesday, 17 October**  
*Room C203*

**Advanced engineering, software and simulation I**

**Chairmen:** Dinel POPA  
Liviu Nicolae MIHON

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
</table>
| 16:30 – 16:45 | Modeling and Simulation of the Specific Mechanisms Used in Convertible Automobiles  
*Daniela Antonescu, Daniel Iozsa, Ovidiu Antonescu, Gheorghe Fratila* |
| 16:45 – 17:00 | CFD Simulation of Turbulent Flow Around a Shrouded Spur Gear for Predicting Load-Independent Windage Power Losses  
*Emre Kara, Omer Firat Nas, Nihat Yildirim* |
| 17:00 – 17:15 | Numerical Investigation of Slant Angle Effect on a Simplified Car Model with Solution Adaptive Cartesian Grid Method  
*Emre Kara* |
| 17:15 – 17:30 | Simulink Model to Optimize Cab Suspension  
*Cornelia Stan, Daniel Iozsa* |
| 17:30 – 17:45 | Study of Stability on Water for a Special Amphibious Vehicle  
*Radu Vilau, Alexandru Simion Stoica, Adrian Constantinescu, Dragos Sorin Suci* |

**17:45 – 18:00**  
*Refreshment break*

**Advanced engineering, software and simulation II**

**Chairmen:** Mircea NĂSTĂSOIU  
Ionuţ Daniel GEONEA

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 18:00 – 18:15 | Experimental Research on the Use of MRD to Reduce Shocks and Vibrations in Light Car Seats  
*Marian Florin Mitroi, Camelia Cerbu* |
| 18:15 – 18:30 | Lateral Impact Behavior Study of a Car Door  
*Daniel Iozsa, Ana Maria Manea, Victor Costin David, Cornelia Stan* |
| 18:30 – 18:45 | Using Inertial Sensors in Driver Posture Tracking Systems  
*Silviu Butnariu, Gheorghe Mogan, Csaba Antonya* |
| 18:45 – 19:00 | Study on the Contact Stress Between the Piston-Ball and the Swash Plate for an Axial Hydrostatic Motor  
*Sebastian Radu, Horia Abaitancei, Cristi Irimia, Mihail Grovu, Calin Husar* |

**19:30 – 21:30**  
*Dinner*  
*Restaurant of Grand Hotel Italia*
Program

Wednesday, 17 October

Room E13c

Advanced engineering, software and simulation III

Chairmen: Cristian Nicolae ANDREESCU
             Viorel NICOLAE

16:30 – 16:45  The Impact of the Wheel’s Rim on the Aerodynamics of Passenger Vehicles
                Laurentiu Ilea, Daniel Iozsa, Cornelia Stan, Gheorghe Fratila

16:45 – 17:00  Numerical Results Obtained on Models of Dynamical Systems Used in the Study
                of Active Suspensions
                Sorin Marcu, Dinel Popa, Nicolae Doru Stanescu, Nicolae Pandrea

17:00 – 17:15  Modeling and Analysis of a Vehicle Suspension
                Liviu Nicolae Mihon, Nicolae Stelian Lontis

17:15 – 17:30  Vibrotactile Patterns for Smartphone Based ADAS Warnings
                Florin Girbacia, Gheorghe Daniel Voinea, Teodora Girbacia

17:30 – 17:45  Predictive Actuation of a Driving Simulator
                Csaba Antonya, Laurentiu Carabulea, Cornelia Pauna

17:45 – 18:00  Refreshment break

Advanced engineering, software and simulation IV

Chairmen: Emre KARA
             Alexandru BOROIU

18:00 – 18:15  Virtual Determinations and Analyzes on the Influence of the MRD Magnetic
                Field from the Vehicle Structure in Assessing the Passenger Comfort During Travel
                Marian Florin Mitroi, Camil Tudor, Iulian Turcanu

18:15 – 18:30  Considerations About the Stream Line Resistances of an Amphibious Vehicle
                While Moving on Water
                Radu Vilau, Dragos Sorin Suci, Alexandru Simion Stoica, Adrian Constantinescu

18:30 – 18:45  Evaluation of using Mobile Devices for 3D Reconstruction of Accidents
                Razvan Gabriel Boboc, Florin Girbacia, Cristian Cezar Postelnicu,
                Gheorghe Daniel Voinea

18:45 – 19:00  Considerations for Designing Efficient User Interfaces in Augmented Reality
                Enabled Head-Up Displays
                Mihai Duguleana

19:30 – 21:30  Dinner

Restaurant of Grand Hotel Italia
Program

Wednesday, 17 October

Room D09d

Road safety, traffic control and transportation engineering II

Chairmen: Victor OȚĂT
           Corneliu COFARU

16:30 – 16:45  Determination of Some Vehicle Dynamic Performances using the Dynamometric
AMMA 2018_TRT05  Roller chassis
Adrian Soica, Adrian Budala, Vlad Monescu

16:45 – 17:00  Considerations on Using the Crash Pulse in the Vehicle-Vehicle Collision
AMMA 2018_TRT06  Assessment
Dragos Sorin Dima, Dinu Covaciuc, Anghel Chiru

17:00 – 17:15  Critical Evaluation of the Pedestrian Walking Distances on the Congested Urban
AMMA 2018_TRT07  Networks
Daniela Florea, Dinu Covaciuc, Janos Timar, Stelian Tarulescu

17:15 – 17:30  Experimental Research in Case of Car to Pedestrian Collision
AMMA 2018_TRT08
Liviu Petrescu, Alexandru Petrescu

17:30 – 17:45  Traffic Modeling in Urban Congested Areas
AMMA 2018_TRT09
Cristina Floriana Oprea, Mircea Augustin Rosca, Serban Stere, Sergiu Olteanu

17:45 – 18:00  Refreshment break

Road safety, traffic control and transportation engineering III

Chairmen: Adrian SACHELARIE
           Victor CEBAN

18:00 – 18:15  Analysis of Car-Cyclist Accidents Occurring at Relative Medium and High
AMMA 2018_TRT10  Vehicle Speed
Nicolae Ispas, Mircea Nastasoiu, Radu Iulian Negrila

18:15 – 18:30  A Comparative Analysis of the Road Noise Immission Models
AMMA 2018_TRT11
Andrei Alexandru Boroiu, Elena Neagu, Alexandru Boroiu, Sebastian Parlac

18:30 – 18:45  On the Management of Activity of Technical Control of Motor Vehicles
AMMA 2018_TRT12
Marian Burcea, Ion Tabacu

18:45 – 19:00  Capacity and Traffic Performance Depending on Intersections Design
AMMA 2018_TRT13
Laurentiu Claudia Manea, Adriana Teodora Manea, Stelian Tarulescu,
Daniela Florea

19:30 – 21:30  Dinner
Restaurant of Grand Hotel Italia
Program

Wednesday, 17 October

Room D09f

Manufacturing Technologies and Materials I

Chairmen: Daniel IOZSA
           Stelian ȚĂRULESCU

16:30 – 16:45  Considerations on the Usage of the Same Air Filtration System on Different
AMMA 2018_MAT01  Engine Types
                 Marius Toma, Adrian Asimopolos

16:45 – 17:00  Designing Hybrid BF/FF Epoxy Based Composites with Tailorable Dielectric
AMMA 2018_MAT02  Properties
                 Dana Luca Motoc, Radu Tarulescu, Stelian Tarulescu, Adrian Soica

17:00 – 17:15  Experimental Study on the Influence of Using Pistons with Ceramic Crown on
AMMA 2018_MAT03  Actual Torque and CO Emission
                 Ioan Radu Sugar, Mihai Banica, Liviu Giurgiulescu

17:15 – 17:30  A Comparison Approach to Fire Retardancy Behavior on Tailored Hybrid
AMMA 2018_MAT04  BF/FF Cyanate-Epoxy Composites
                 Dana Luca Motoc, George Ionut Sava

17:30 – 17:45  Development of a Material Model for the Use in Life-time Estimate of Structures
AMMA 2018_MAT05  Sanda Ionela Alina

17:45 – 18:00  Refreshment break

Manufacturing Technologies and Materials II

Chairmen: Dorin LELEA
           Dana Luca MOTOC

18:00 – 18:15  Determination of the Tool's Trajectory for the Manufacturing of the Profile of a
AMMA 2018_MAT06  Cam
                 Ionut Dragomir, Nicolae Doru Stanescu

18:15 – 18:30  Use of Mini-Max Approximation for the Determination of the Dependency
AMMA 2018_MAT07  between the Input and Output Parameters for the Automotive Parts Obtained by
                 Fused Deposition Modeling (FDM)
                 Nicolae Dora Stanescu, Maria Luiza Beslu, Stefan Tabacu

18:30 – 18:45  Re-sintering Influence on Tribological and Structural Characteristics of
AMMA 2018_MAT08  Iron-based Composites for Automotive Applications
                 Violeta Valentina Merie, Corina Julieta Birleanu, Catalin Ovidiu Popa,
                 Marius Sorin Pustan, Nicolae Vlad Burnete

18:45 – 19:00  Estimation of Tribological Properties for Fe-Cu-graphite-Ni-TiO$_2$ Composites
AMMA 2018_MAT09  for Automotive Industry
                 Florina Maria Serdean, Violeta Valentina Merie, Corina Julieta Birleanu,
                 Catalin Ovidiu Popa, Marius Sorin Pustan

19:30 – 21:30  Dinner

Restaurant of Grand Hotel Italia
Program

Wednesday, 17 October

Green Vehicle Solutions I

Chairmen: Antoaneta DOBREVA
Anghel CHIRU

16:30 – 16:45  Biodiesel Production and Sustainability Challenge
AMMA 2018_GVS01  Fazal Um Min Allah, Marin Bica, Dragos Tutunea

16:45 – 17:00  Legal Barriers of Utilization of Autonomous Vehicles as Part of Green Mobility
AMMA 2018_GVS02  Máté Zölgy

17:00 – 17:15  Techniques and Procedures for Assessing the Energy Balance of Internal Combustion Engines
AMMA 2018_GVS03  Bogdan Cornel Benea, Anghel Chiru

17:15 – 17:30  Characterization of Sunflower Oil Biodiesel as Alternative for Diesel Fuel
AMMA 2018_GVS04  Dragos Tutunea, Ilie Dumitru, Laurentiu Racila, Oana Victoria Olat, Lucian Matei, Ionut Daniel Geonea

17:30 – 17:45  Innovative Methodology for Decreasing Mechanical Losses in Vehicles
AMMA 2018_GVS05  Antoaneta Dobreva, Vasko Dobrev

17:45 – 18:00  Refreshment break

Green Vehicle Solutions II

Chairmen: Máté ZÖLDY
Horia BELEŞ

18:00 – 18:15  Applications of Biogas Inside a Motogenerator – Case Study
AMMA 2018_GVS06  Adrian Eugen Cioabla, Virgil Stoica, Francisc Popescu

AMMA 2018_GVS07  Rares Lucian Chiriac, Anghel Chiru, George Toganel, Ovidiu Andrei Condrea

18:30 – 18:45  Assessment of the Energy Balance of Biofuels for Motor Vehicles
AMMA 2018_GVS08  Bogdan Cornel Benea, Anghel Chiru

18:45 – 19:00  Reducing Carbon Emissions from Vehicles by Using Catalytic Solutions
AMMA 2018_GVS09  Stelian Tarulescu, Radu Tarulescu, Cristian Ioan Leahu, Adrian Soica, Cornel Arama

19:30 – 21:30  Dinner

Restaurant of Grand Hotel Italia
Program

Keynote Presentations

Wednesday, 17 October  
16:00 – 16:30

1. Powertrain and Propulsion  
Room D08a

Flash-Boiling Fuel Injection for IC Engines: Principles, Challenges and Limitations

SHER, Eran – Technion, Israel Institute of Technology, Israel

Thursday, 18 October  
9:00 – 9:30

2. Hybrid and electric vehicles  
Room D08a

Some Remarks on the Electrification of the Powertrain

REUSS, Hans-Christian – University of Stuttgart, Germany

3. Green Vehicle Solutions  
Room C203

Looking Towards the Future

DEPCIK, Christopher – University of Kansas, USA
Program

Thursday, 18 October

Hybrid and electric vehicles II

Chairmen: Paolo CARLUCCI
Radu DROSESCU

9:30 – 9:45
The Chassis Design for Three-Wheeled Electric Motorcycle
Alina Rodica Spanu, Florin Stoeneescu, Mario Lorenzi

AMMA 2018_HEV06

9:45 – 10:00
Assessment of Life Cycle Cost for a Plug-in Hybrid Electric Vehicle
Denisa Cimerdean, Nicolae Burnete, Calin Iclodean

AMMA 2018_HEV07

10:00 – 10:15
Analysis of Range Extended Hybrid Vehicle with Rotary Internal Combustion Engine Using AVL Cruise
Norbert Bagameri, Bogdan Ovidiu Varga, Dan Moldovanu, Aron Csato, Dimitrios Karamousantas

AMMA 2018_HEV08

10:15 – 10:30
Optimizing Shifting Schedule and Hardware-In-the-Loop Simulation of a Hybrid Vehicle Based on Dual Clutch Transmission
Norbert Bagameri, Bogdan Ovidiu Varga, Dan Moldovanu, Aron Csato, Dimitrios Karamousantas

AMMA 2018_HEV09

10:30 – 10:45
Research of Energy Efficiency and Carbon Footprint for an Urban Small Class Electric Vehicle
Cristina Mocan, Doru Laurean Baldean, Rares Curean

AMMA 2018_HEV10

10:45 – 11:00
Van Dynamics Performance Analysis for Different Battery Pack Placement
Dan Moldovanu, Bogdan Ovidiu Varga, Florin Mariasiu, Calin Iclodean, Nicolae Vlad Burnete, Liviu Mihali, Sebastian Ola

AMMA 2018_HEV11

11:00 – 11:15
Effects of Battery Placement on Vehicle Stability Performance
Dan Moldovanu, Bogdan Ovidiu Varga, Florin Mariasiu, Calin Iclodean, Nicolae Vlad Burnete, Liviu Mihali, Sebastian Ola

AMMA 2018_HEV12

11:15 – 11:30
Refreshment break

23
Thursday, 18 October

**Powertrain and Propulsion III**

**Chairmen:** Christopher DEPCIK
Laurențiu MANEA

9:30 – 9:45
**AMMA 2018_POW10**
The Study of the Energetic Performance in Test Cycles Considering a Variable Powertrain Thermal Regime
Cristian Alexandru Rentea, Mircea Ioan Oprean, Marius Bataus, Gheorghe Fratila

9:45 – 10:00
**AMMA 2018_POW11**
Thermodynamic Study of Airflow through the Spark Ignition Engine Intake Manifold
Cornelia Birtok-Baneasa, Sorin Ratiu, Vasile Cioata, Adina Budiul-Berghian

10:00 – 10:15
**AMMA 2018_POW12**
A Pneumatic Propulsion System for Urban Cars
Tudor Mitran, Catalin Chioareanu, George Dragomir, David Fagadar

10:15 – 10:30
**AMMA 2018_POW13**
Energy Based Slider-crank Mathematical Model
Doru Groza, Ioan Calin Rosca, Gheorghe Alexandru Radu

10:30 – 10:45
**AMMA 2018_POW14**
Effect of Electrode Geometry on Flame Kernel Development in a DI SI Engine
Simona Silvia Merola, Adrian Irimescu

10:45 – 11:00
**AMMA 2018_POW15**
Drag Phenomena within a Torque Converter Driven Automotive Transmission - A Turbulent Flow Approach
Marin Marinescu, Ion Lespezeanu, Radu Vilau, Constantin Ovidiu Ilie, Octavian Alexa

11:00 – 11:15
**AMMA 2018_POW16**
A Conventional Approach to Estimate NOx and Soot Emissions of a Diesel Engine fueled with Diesel and Biodiesel Fuels
Bogdan Radu, Radu Chiriac, Alexandru Cristian Racovitza

11:15 – 11:30
**Refreshment break**
**Program**

Thursday, 18 October  
**Room E13c**

**Powertrain and Propulsion IV**

*Chairmen:* Mircea OPREAN  
Minu MITREA

9:30 – 9:45  
**AMMA 2018 POW17**  
Effects of Re-Designing of Two-Stroke Engine Fuelled with Gasoline - Ethanol Blend on GHG and Pollutant Emissions  
Corneliu Cofaru, Nicolae Ispas

9:45 – 10:00  
**AMMA 2018 POW18**  
Kinematic Analysis of a Variable Compression Ratio Mechanism  
Bogdan Manescu, Nicolae Doru Stanescu

10:00 – 10:15  
**AMMA 2018 POW19**  
Constructive Optimization of a Mechanism of Variable Valve Control  
Claudia Mari Popa, Dinel Popa, Nicolae Doru Stanescu

10:15 – 10:30  
**AMMA 2018 POW20**  
Dynamic Models for Analyzing a Self-propelled Vehicle for People with Locomotor Disabilities  
Nicolae Dumitru, Ionut Daniel Geonea, Cristian Copilusi, Sorin Dumitru, Oana Victoria Otat

10:30 – 10:45  
**AMMA 2018 POW21**  
LPG - an Alternative Solution to Fuel a Car Diesel Engine  
Nikolaos Cristian Nutu, Constantin Pana, Nicolae Negurescu, Alexandru Cernat, Dinu Fuiorescu, Liviu Nemoianu

10:45 – 11:00  
**AMMA 2018 POW22**  
Experimental Research on a Diesel Engine  
Marin Nicolau, Constantin Iulian Pantece, Leonard Iulian Cucu, Gabriel Ionut Dorobantu, Ion Copae

11:00 – 11:15  
**AMMA 2018 POW23**  
Issues Concerning the Determination of the Correspondence between Low Pressure Distillation and Gas Chromatography Analysis of Biodiesel. Preliminary Results  
Rodica Niculescu, Mihaela Nastase, Adrian Clenci, Victor Iorga-Siman, Catalin Zaharia

11:15 – 11:30  
*Refreshment break*
Program

Thursday, 18 October  
Room D08a

**Powertrain and Propulsion V**

*Chairmen:* Dănuț GROSU  
Radu DROESCU

- **11:30 – 11:45**  
  Modeling the Torque Oscillations During Gear Shifts on Automated Manual Transmission  
  Stefan Saragea, Mircea Ioan Oprean, Gabriel Badea, Gheorghe Fratila

- **11:45 – 12:00**  
  On the Stability of the Vehicle's Cornering Motion  
  Bogdan Nicolescu, Tiberiu Macarie

- **12:00 – 12:15**  
  A study about development of electric oil pump controller based on the AU-TOSAR  
  Haejin Kim, Seung Yun Ryu, Hojeong Yoo, Hyoungsu Kim, Kwangyeol Kim

- **12:15 – 12:30**  
  The Study of Adjustment Possibilities for a Hydraulic Control System Used for Adaptive Thermal Motors  
  Marinica Stan, Petre Stan

- **12:30 – 12:45**  
  Equipment and Techniques for Energy Assessment of Internal Combustion Engines  
  Rares Lucian Chiriac, Anghel Chiru, Ovidiu Andrei Condrea, Dan Mihai Dogariu

- **12:45 – 13:00**  
  The Study of the KERS Flywheel Sealing  
  Mihaeila Istrate, Dinel Popa, Claudia Mari Popa, Monica Bildea

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**13:30 – 15:00**  
*Lunch break*  
*Restaurant of Grand Hotel Italia*

**15:30 – 18:00**  
*Technical Visit*  
*Bosch – Jucu*

**19:00 – 22:00**  
*Gala Dinner*  
*Restaurant of Grand Hotel Italia*
Program

Thursday, 18 October  

**Powertrain and Propulsion VI**

*Chairmen:* Constantin PANA
Marius PUSTAN

11:30 – 11:45  
*AMMA 2018 POW30*  
The Simulation of the Gas Exchange Process for the Internal Combustion Engines with Opposite Pistons  
Adrian Tusinean, Peter Hofbauer, Horia Beles, Tudor Mitran

11:45 – 12:00  
*AMMA 2018 POW31*  
Considerations on the Gas Exchange Process in Internal Combustion Engines with Opposite Pistons  
Adrian Tusinean, Peter Hofbauer, Horia Beles, Sebastian Radu

12:00 – 12:15  
*AMMA 2018 POW32*  
Combustion Analysis for Single Cylinder Engine Running on Various Types of Diesel  
Nicolae Vlad Burnete, Florina Maria Serdean, Nicolae Burnete, Dan Moldovanu

12:15 – 12:30  
*AMMA 2018 POW33*  
Study of Brake System Parameters for Commercial Vehicles  
Madalin Florin Popa, Nicolae Vlad Burnete

12:30 – 12:45  
*AMMA 2018 POW34*  
Research of Operational Trend-lines and Optimal Features in K9K792 Engine  
Electronic Management from Dacia Logan Powertrain  
Emilian Vasile Borza, Adela Ioana Borzan, Doru Laurean Baldean

12:45 – 13:00  
*AMMA 2018 POW35*  
Vallapudi Dhana Raju, P S Kishore, Harish Venu

13:30 – 15:00  
*Lunch break*  
*Restaurant of Grand Hotel Italia*

15:30 – 18:00  
*Technical Visit*  
*Bosch – Jucu*

19:00 – 22:00  
*Gala Dinner*  
*Restaurant of Grand Hotel Italia*
Program

Thursday, 18 October

Room C203

Advanced engineering, software and simulation V

Chairmen: Tudor MITRAN
Tiberiu MACARIE

9:30 – 9:45
AMMA 2018_AES19
Deep Soil Tillage Tools Optimization Study
Gabriel Gheorghe, Petru Cardei, Laurentiu Vladuțiou, Lucian Fechete, Dan Cujișcuf

9:45 – 10:00
AMMA 2018_AES20
Research Contributions through Virtual Modeling of an Innovative Particle Filter for Alternative Application in Automotive Field Using Advanced Engineering Methods
Adela Ioana Borzan, Doru Laurean Baldean

10:00 – 10:15
AMMA 2018_AES21
Contributions in Further Development of Advanced Engineering Solutions Regarding the N.V.H. Aspects in Porsche Cayenne vs. Cayman Testing Conditions at Technical University from Cluj-Napoca
Doru Laurean Baldean, Bogdan Ovidiu Varga, Adela Ioana Borzan

10:15 – 10:30
AMMA 2018_AES22
Contribution to Applied Engineering Research of the Compression Piston Ring Wear from Internal Combustion Engine
Ioan Aurel Chereches, Adela Ioana Borzan, Doru Laurean Baldean

10:30 – 10:45
AMMA 2018_AES23
Study on the Dynamic Behaviour of a Car Wheel Rim
Ionel Vieru, Elena Neagu, Andrei Alexandru Boroiu, Mihaela Istrate

10:45 – 11:00
AMMA 2018_AES24
Design Optimization of a Passenger Car’s Steering System for Minimizing the Ackerman Error and the Turning Radius
Augustin Constantinescu, Mario Trotea, Loretă Simniceanu, Gheorghe Popa-Mitroiu

11:00 – 11:15
AMMA 2018_AES25
The Development of a Recording System Able to Read Vehicle Parameters from On-Board Computer Without the use of a Dedicated/Universal Tester
Daniela Voicu, Laszlo Barothi, Ramona Monica Stoica, Andrei Mandache-Dodoiu

11:15 – 11:30
Refreshment break
Program

Thursday, 18 October

Room C203

Advanced engineering, software and simulation VI

Chairmen: Dinel POPA
Natalia FILIP

11:30 – 11:45
Control of Injection Process Using iRate Injection Law on Single Cylinder Diesel Engine's by Numerical Simulation
Calin Icădean, Vasile Solcan, Marian Craciunescu, Florin Mariasău, Bogdan Jurchis

11:45 – 12:00
The Aerodynamic Study of a Body Truck
Sanda Mariana Bodea, Calin Vasile Prodan, Iacob Liviu Scurtu

12:00 – 12:15
Optimizing the Responsiveness of a Turbocharged ICE through a New Design of the Exhaust Line
Levente Botond Kocsis, Dan Moldovanu, Doru Laurean Baldean, Ferenc Gaspar

12:15 – 12:30
Topography Optimization of a Bracket Used for Car Bodywork Reinforcement
Iacob Liviu Scurtu, Monica Carmen Balcau, Ancuta Nadia Jurco

13:30 – 15:00
Lunch break
Restaurant of Grand Hotel Italia

15:30 – 18:00
Technical Visit
Bosch – Jucu

19:00 – 22:00
Gala Dinner
Restaurant of Grand Hotel Italia
Program

Thursday, 18 October

Room D09d

Road safety, traffic control and transportation engineering IV

Chairmen: Alexandru BOROIU
Dinu COVACIU

9:30 – 9:45 Monitoring and Alert System: Neuro-fuzzy Decision Algorithm Based on Biological Signals Acquired from Vehicle Drivers
Tiberiu Vesselenyi, Alexandru Rus, Tudor Mitran, Mircea Bogdan Tataru, Sorin Moca

9:45 – 10:00 Efficiency Analysis of Passive Safety Systems in Vehicles in the Case of Frontal Collision Using Experimental Tests
Alexandru Ionut Radu, Daniel Dragos Trusca, George Toganel, Bogdan Tolea

10:00 – 10:15 Low Annoyance Smartphone Based ADAS – Design Evaluation Using AttrakDiff
Gheorghe Daniel Voinea, Razvan Gabriel Boboc, Florin Girbacia, Cristian Cezar Postelnicu

10:15 – 10:30 The Influence of the Exhaust Line High Frequency Sounds on the BSW Sensors
Catalin Meirosu, Laurentiu Ilea

10:30 – 10:45 Studies on Determining the Dynamics of Public Transport Based on Interdependent Passengers - Reconfiguration of Stations
Lucian Matei, Ilie Dumitru, Alexandru Oprica, Laurentiu Racila, Bogdan Florescu, Alexandru Dima, Mihaela Racila

10:45 – 11:00 Studies on Optimization Connection and Intermodal Capacities in TNT Transport Corridors
Cristiana Sirbu, Ilie Dumitru, Laurentiu Racila, Oana Victoria Olat, Theodor Oprica

11:00 – 11:15 Application of Generalized Linear Poisson Model for Fatal Crashes Occurred on Curve and Inclined Plane
Dan Pop

11:15 – 11:30 Refreshment break
Program

Thursday, 18 October

Room D08b

Road safety, traffic control and transportation engineering V

Chairmen: Victor OȚĂT
          Daniel TRUȘCĂ

11:30 – 11:45
AMMA 2018_TRT21
Finite Element Analysis of Occupant Safety in the Case of Vehicle Lateral Impact with a Rigid Pole
Dan Pop

11:45 – 12:00
AMMA 2018_TRT22
Comparison of Passenger Vehicle Braking Distance When Traveling on Snow and Asphalt at Different Velocities
Alexandru Ionut Radu, Daniel Dragos Trusca, Laurentiu Claudiu Manea, George Toganel

12:00 – 12:15
AMMA 2018_TRT23
Study of School Bus Transportation System for Cernavoda City
Adriana Teodora Manea, Laurentiu Claudiu Manea, Stelian Tarulescu, Radu Tarulescu

12:15 – 12:30
AMMA 2018_TRT24
The Relevance of Public Questionnaires on the Development of Measures to Increase Sustainable Urban Mobility
Georgiana Silvia Muresan, Nicolae Filip

12:30 – 12:45
AMMA 2018_TRT25
Influences of the Suspensions’ Characteristics on the Vehicle Stability
Nicolae Cordos, Adrian Todorut

13:30 – 15:00
Lunch break
Restaurant of Grand Hotel Italia

15:30 – 18:00
Technical Visit
Bosch – Jucu

19:00 – 22:00
Gala Dinner
Restaurant of Grand Hotel Italia
Program

Thursday, 18 October

Room D09d

Road safety, traffic control and transportation engineering VI

Chairmen: Mircea NĂSTĂSOIU
Tudor MITRAN

11:30 – 11:45 Research Regarding on Choosing Optimal Traffic Organization Using Ranking Criteria
Carmen Gheorghe, Nicolae Filip

AMMA 2018_TRT26

11:45 – 12:00 Evaluation of the Vehicle Sideslip Angle According to Different Road Conditions
Adrian Todorut, Nicolae Cordos

AMMA 2018_TRT27

12:00 – 12:15 Research Regarding on How to Assess Traffic Congestion in Relation to Vehicle Speed and Flow Rate
Carmen Gheorghe, Nicolae Filip

AMMA 2018_TRT28

12:15 – 12:30 Research of an Integrated Model System for Data Collection and Real-time Transfer Capabilities Regarding Road Traffic Events in a Cluster Data Base Type of Traffic Network
Adela Ioana Borzan, Doru Laurean Baldean

AMMA 2018_TRT29

13:30 – 15:00 Lunch break
Restaurant of Grand Hotel Italia

15:30 – 18:00 Technical Visit
Bosch – Jucu

19:00 – 22:00 Gala Dinner
Restaurant of Grand Hotel Italia
Program

Thursday, 18 October

Manufacturing Technologies and Materials III

Chairmen: Ștefan TABACU
Alexandru RUS

9:30 – 9:45  
A Comparative Study on the Comfort and Safety of the Seat Cover Fabrics
Ionel Barbu, Simona Magdalena Fogorasi, Mihaela Dochia, Monica Pustianu, Adina Bucevschi, Daniela Farima

9:45 – 10:00  
Theoretical and Experimental Analysis for the Load Capacity of the Cone
Tightening Assemblies
Ionut Daniel Geonea, Nicolae Dumitru, Cristian Copilusi, Ilie Dumitru, Oana Victoria Otat, Dragos Tutunea

10:00 – 10:15  
Optimized Prototyping for the Increasing of Performances of a Design Process
Daniel Constantin Anghel, Maria Luiza Besliu, Nicolae Doru Stanescu

10:15 – 10:30  
On the Temperature and Chips types in Milling of an Austenitic Stainless Steel
Nicolae Craciunoiu, Daniela Tarata, Cosmin Miritoiu, Emil Nicusor Patru, Dumitru Panduru

10:30 – 10:45  
On the Cutting Tool and Workpiece Temperature in Turning of Titanium Parts Used in Automotive Industry
Dumitru Panduru, Nicolae Craciunoiu, Emil Nicusor Patru, Marin Bica

10:45 – 11:00  
Influence of Cutting Tool Diameter on Cutting Tool Temperature in Milling of Aluminum Alloys Used in Automotive Industry
Emil Nicusor Patru, Nicolae Craciunoiu, Dumitru Panduru, Marin Bica

11:00 – 11:15  
Dynamic Analysis of a Rotating Structure Manufactured by Fused Deposition Modeling
Claudiu Diaconescu, Stefan Tabacu, Alexandru Oltean, Sebastian Parlac

11:15 – 11:30  
Refreshment break
Program

Thursday, 18 October

Manufacturing Technologies and Materials IV

Chairmen: Corina BÂRLEANU
            Edward RAKOȘI

11:30 – 11:45  Comparative Study on the Regeneration of Used Motor Oil
AMMA 2018_MAT17  Cornelia Stan, Marius Toma, Cristian Andreescu, Daniel Iozsa

11:45 – 12:00  The Determination of the Dependency between the Input and Output Parameters
AMMA 2018_MAT18  in Fused Deposition Modeling (FDM) Using Multi Polytropic Functions
            Nicolae Doru Stanescu, Maria Luiza Besliu, Stefan Tabacu, Dinel Popa,
            Alin Daniel Rizea, Monica Iordache

12:00 – 12:15  The NEPCM Materials as Cooling Solutions for High Power Light Emitting
AMMA 2018_MAT19  Diodes (LED)
            Dorin Lelea, Adrian Eugen Ciocabla

12:15 – 12:30  Implementation of Single – Loop Kanban System Using Indoor Location Based
AMMA 2018_MAT20  on RFID
            Nadia Belu, Eduard Laurentiu Nitu, Alin Daniel Rizea, Cornelia Ana Gavriluta,
            Laurentiu Mihai Ionescu, Alin Constantin Gavriluta

12:30 – 12:45  Research of Optimal Engineering Solutions in Gas After-treatment Management
AMMA 2018_MAT21  Systems by Using Alternative Composite Materials as Base for Coating
            Doru Laurean Baldean, Lucian Vasile Crisan-Lupa, Adela Ioana Borzan

12:45 – 13:00  Researching Manufacturing Technologies and Programs in Recovering Residual
AMMA 2018_MAT22  Energy from Automotive Waste Materials for an Improved Efficiency in
            Thermo-chemical Conversion
            Adela Ioana Borzan, Emilian Vasile Borza, Doru Laurean Baldean

13:30 – 15:00  Lunch break

Restaurant of Grand Hotel Italia

15:30 – 18:00  Technical Visit

Bosch – Jucu

19:00 – 22:00  Gala Dinner

Restaurant of Grand Hotel Italia
Program

Thursday, 18 October

**Green Vehicle Solutions III**

*Chairmen:* Ádám TÖRÖK
Radu VILĂU

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<td>Reducing Diesel Emissions by Using a Catalytic Solution</td>
<td>Stelian Tarulescu, Radu Tarulescu, Cristian Ioan Leahu, Adrian Soica, Cornel Arama</td>
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<td>9:45 – 10:00</td>
<td>Influence of TiO₂ Nano-particles Content on Physicochemical and Tribological</td>
<td>Andrea Molea, István Barabas, Ramona Suciu</td>
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<td>Properties of Lubricant Oil</td>
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<td>Temperature Dependence of Densities of Different Biodiesel-Diesel-Alcohol</td>
<td>Mert Gülüm, Atilla Bilgin</td>
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<td>Diesel-Alcohol Ternary Blends</td>
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<td>10:30 – 10:45</td>
<td>Researching the Applied Engineering Protocol to Implement a Program for</td>
<td>Ioan Aurel Chereches, Adela Ioana Borzan, Doru Laurean Baldean</td>
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<td>Monitoring Air Quality Management and Carbon-footprint for Future Green</td>
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<td>Vehicles in Urban Area</td>
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<td>10:45 – 11:00</td>
<td>Fuel Properties of Diesel-Ethanol-Tetrahydrofuran Blends: Experimental and</td>
<td>István Barabas, Andreia Molea, Ramona Suciu</td>
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<td>Theoretical Approaches</td>
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<td>11:00 – 11:15</td>
<td>Research Concerning Fuel Economy Coefficient and Carbon Foot Print in</td>
<td>Emilian Vasile Borza, Doru Laurean Baldean, Adela Ioana Borzan</td>
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<td>Various Conditions for a City Compact Size Vehicle with Digital Control for a</td>
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<td>Green Solution and Method at Technical University from Cluj-Napoca</td>
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<td>13:30 – 15:00</td>
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<td>19:00 – 22:00</td>
<td>Gala Dinner</td>
<td>Restaurant of Grand Hotel Italia</td>
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Workshops

Wednesday, 17 October

16:30 – 17:45  Workshop 1  Council Hall

Automated driving: how sensors data “meet” the steering systems
Catalin GOLBAN and Septimiu FLOCA
Connected industry 4.0 in Bosch plant Cluj
Radu HARCEAGA

BOSCH
Invented for life

Thursday, 18 October

9:30 – 10:45  Workshop 2  Porsche Hall

Electric vehicle range prediction using Artificial Intelligence
Range in case of electric vehicles is one of the most challenging information delivered to the driver, being one of the essential technical information. Clear, reliable and accurate information has to be taken into consideration from a multitude of sources in case of electric vehicles range prediction. How Porsche Engineering is using Artificial Intelligence in solving this serious matter, and why simply collecting information from the vehicle it is not enough, are several topics to be addressed during the presentation.

Porsche Engineering
driving technologies

Opening: Prof. Bogdan Ovidiu VARGA- TU Cluj-Napoca
Main topic: Senior Machine Learning Consultant Andras GYALAI
Porsche Engineering Romania

16:00 – 17:45  Workshop 3  Lecture Hall A11

Smart Romania: The country of the learning communities
Vistrian MATIES – Technical University of Cluj-Napoca
Student Contests

Thursday, 18 October

The 5th Edition of the National Student Contest on Automotive Engineering “Professor Constantin GHIULAI”

9:30 – 13:00 Vehicle Dynamics

Lecture Hall A117

Supported by

9:30 – 13:00 Computer Aided Design

Supported by
Technical Visits

Thursday, 18 October

15:30 – 18:00 Bosch – Jucu

From Grand Hotel Italia, at 15:10

In Romania, the Bosch Group comprises five entities in different locations across the country. The company’s headquarters is based in Bucharest where Bosch also has a sales office. In the country’s capital there is also a branch of BSH Hausgeräte GmbH, active in the market of household appliances. In Cluj, Bosch operates a research and development center as well as a production unit for automotive technology. A production unit for linear motion technology and one for automotive technology are located in Blaj. The company runs also a Business Process Outsourcing center in Timișoara.

The Bosch plant in Jucu, Cluj County, has been manufacturing electronic components for the automotive industry since 2014 in areas such as driving assistance or safety and comfort management. In 2017 only, over 43 million electronic components, such as electronic control units for the eBike powertrain systems and parking assistance have been manufactured, as well as engine and airbag control units. To increase competitiveness and streamline production, Bosch has introduced Industry 4.0 solutions in Jucu.

Friday, 19 October

10:00 – 16:00 STC Star Transmission – Sebeș

From Grand Hotel Italia, at 9:40

Star Transmission and Star Assembly, STC & STA, are two companies part of the German group Daimler. STC & STA is an international component supplier for the automotive industry, a manufacturer of complex powertrain components such as: gears, shafts, mechanically processed components for engines, transmissions and steering gear boxes.

Star Transmission, in Cugir, manufactures gearwheels and shafts as well as machined components for engines, transmissions and steering systems. It is also home to the technology center and a training facility. Star Assembly was set up in 2013, in Sebeș, with production of the five-speed automatic transmission being launched in the same year, while the first seven-speed automatic transmission came off the assembly line one year later, in 2014. Since 2016 the company also assembles the newest type of gearboxes: the 9G-Tronic.
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Let's engineer the future together.

Porsche Engineering.

Creating forward-looking solutions was the standard set by Ferdinand Porsche when he started his design office in 1931. In doing so, he laid the foundation for today's engineering services by Porsche. We renew our commitment to that example with each new project that we carry out for customers. The variety of services provided by Porsche Engineering ranges from the design of individual components to the planning and execution of complete vehicle developments and extends to industries beyond the automotive sector.

Fuel consumption (in l/100km) urban 19.2 · extra urban 9 · combined: 12.8; CO₂ Emissions (in g/km) 291
Sponsors

TRANSAVIA

Well Made in Romania
Scrieți cu privirea economiei de State Jidvei, un impus și spre cea ce va deveni, 50 de ani mai târziu, compania Jidvei.

În 1958, vinurile de Jidvei – din soiurile Traminer Roz, Fetească Regală și Sauvignon Blanc – sunt distinse cu medalii de aur la Conкурсul Internațional de la Ljubljana. În anul 1975, se lansează gama Tradicional, care cuprinde vinuri prețioase, care s-au remarcat de-a lungul timpului în lumea ubotilor de vin alb.

Odată cu privatizarea IAS, Jidvei și înființarea actualului companie S.C. Jidvei SRL, în anul 1999, are loc trecerea la o nouă etapă de dezvoltare, marcată de un amplu program de retehnologizare și modernizare.

În anii ce au urmat, compania a continuat să producă vinuri de calitate, fiind în permanență preocupată de îmbunătățirea proceselor și tehnicilor de vinificare pentru a oferi consumatorilor un produs mai bun, mai rafinat, mai nobil.


În zona DOC „Târnave” sub dinamismul Jidvei, se produc, unele dintre cele mai apreciate vinuri și spumante românești, calitatea acestora fiind confirmată atât de medii și asemenea, cât și de comunitățile internaționale. Vinurile de Jidvei au fost distinse în ultimii ani cu peste 300 de medalii din cadrul celor mai prestigioase concursuri de profil din lume precum: Concours Mondial de Sauvignon, Decanter World Wine, Mondial de Bruxelles etc.

Vinurile Jidvei au fost apreciate și pentru design-ul lor inovativ, primind premiul Book Award la categoria „Packaging Design”, în cadrul festivalului britanic de publicitate D&AD Awards 2013 (Mysterey) și două medalii Novaveck Diamond la competiția Femmes et Vins du Monde 2017 (Mysterey PN+CH+FA și Maria Pinot Gris din gama Owner’s Choice).

Produse
Da-a lungul timpului, Jidvei a creat game alese și diverse, pentru o orice ubotor de vin să se poată bucura de un vin de calitate, pe placul său, mult. Vinuri inigite, vinuri spumante și distilate din vin. Cu un portofoliu de produse ce depășește 56 de etichete, Jidvei este cel mai mare producător de vinuri DOC din România.

Investiții
Grupul Jidvei dispune de patru crame dotate cu cele mai performante echipamente, situate la: Jidvei, Big Bălcești și Târnău. Acestea sunt bogate în educație bine bănele de struguri se și înțelegeri în domeniul enologului în vinuri, care păstrează vocația ardeiului viticului (herăcă viticului). Infățișat în 2014, croma Târnău este o constructie unică în România și Europa de Est, datorată tancurilor și sistemelor de depozitare, utilajelor și instalatiiilor cu care este dotată, precum și datorat tehnologiei folosite.

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CLP
COMPANIA DE TRANSPORT PUBLIC
CLUJ-NAPOCA

CHILIA
Sponsors

RMB Inter Auto oferă clienților servicii de cea mai înaltă calitate la standarde internaționale pentru a rezona cu nevoile unei piețe competitive aflate într-o continuă schimbare și dezvoltare.

www.inter-auto.ro
Time, Date and Venue

This three-day Congress will be held from Wednesday, the 17th of October 2018 – 10:30 to Friday, the 19th of October 2018 – 16:00 at the Technical University of Cluj-Napoca, Faculty of Automotive Engineering, Mechatronics and Mechanics, 103-105 Muncii Blvd.

Registration of Participants

Congress participants can register on the 17th of October at the Technical University of Cluj-Napoca, Faculty of Automotive Engineering, Mechatronics and Mechanics, 103-105 Muncii Blvd. from 8:30 to 10:20.

Language

The official language of the Congress is English. Simultaneous translation will be available during the Opening Ceremony and the Plenary Presentations.

Welcome Reception

The Welcome Reception will be organized at the Technical University of Cluj-Napoca, Faculty of Automotive Engineering, Mechatronics and Mechanics, 103-105 Muncii Blvd., 18:00-20:00.

Lunches and Dinners

Lunches and dinners will be served at the Restaurant of Grand Hotel Italia.

Gala Dinner

The Gala Dinner will be organized at the Restaurant of Grand Hotel Italia on Thursday, the 18th of October, from 19:00.

Currency

The Romanian currency is Leu (also called as RON). If you need to exchange money you can easily do that in the exchange offices that are available at the airport, banks, foreign exchanges or you can withdraw money from ATMs (cash machines) available at bank offices, on the street or in the big shopping centers.

Participation and Publication Fees

The participation fee is 60 Euro/250 Lei (SIAR members) and 85 Euro/400 Lei (others) respectively. It includes Congress portfolio, three meals and the Gala Dinner. The publication fees are 75 Euro/350 Lei (per article – published in Springer) and 35 Euro/150 Lei (per article – published in AMMA 2018 Volume, Published at UTPress, Cluj-Napoca, volume with ISBN. The deadline for payment of the publication and participation fees is 30 September 2018.
**General Information**

**Taxes**

The VAT in Romania is 19% and is included in prices. If you travel by car you **must have a valid vignette** for using Romanian roads. A vignette for a with 7 days validity costs 3 Euro and it can be bought at shops and fueling stations next to Romanian border or online (https://www.e-rovinieta.ro/en/).

**Information hotline during the Congress**

Telephone: +40 742 074 906 (English); +40 740 061 988 (German); +40 743 022 830 (Romanian); Fax: +40 264 415486.
General Information

Important locations

A – Technical University of Cluj-Napoca, Faculty of Automotive Engineering, Mechatronics and Mechanics,
GPS coordinates: Latitude N = 46°47′44.93″, Longitude E = 23°37′30.864″.

B – Univers T Hotel *** (https://universt.ro/) Alexandru Vaida-Voevod Street, 53-55; Phone: +40264414161, Mobil: +40734771177; Fax: +40264414158.
E-mail: rezervari@universt.ro;
GPS coordinates: Latitude N = 46°46′20.85″, Longitude E = 23°37′36.51″.

C – Royal Classic Hotel *** (http://royalclassic.ro/) Liviu Rebreanu Street, No. 39; Phone: +40 264 202 040, +40 264 202 041, Fax: +40 264 202 160.
E-mail: contact@royalclassic.ro;
GPS coordinates: Latitude N = 46°45′51.23″, Longitude E = 23°37′14.91″.

D – Opal Hotel**** (http://www.opalhotel.ro/) Constantin Brancusi Street, No. 148-152; Phone: +40 264 403136; Fax: +40 264 403138. E-mail: contact@opalhotel.ro;
GPS coordinates: Latitude N = 46°45′37.21″, Longitude E = 23°36′47.93″.

E – Grand Hotel Italia ***** (http://grandhotelitaliacluj.ro/) Trifoiului Street, No. 2; Phone: +40 364111333. E-mail: grandhotelitalia@selecthotels.it;
GPS coordinates: Latitude N = 46°45′8.72″, Longitude E = 23°36′21.21″.

Shuttle Buses

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The Bosch Group, a leading global supplier of technology and services, offers innovative solutions to the automotive industry, connected mobility and connected industry. It uses its expertise in sensor technology, software and services, as well as its own IoT cloud to offer its customers connected, cross-domain solutions from a single source.

Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is “invented for life.”

Congresul AMMA 2018 realizat cu sprijinul Primăriei și Consiliului Local Cluj-Napoca

PRIMĂRIA ȘI CONSILIUL LOCAL CLUJ-NAPOCA

Event organized with the support of the City Hall and Local Council of Cluj-Napoca
“Există o singură Românie: există un singur corp și un singur suflet, în care toți nervii și toate suspinele vibrează unul către altul.”

Bogdan Petriceicu Hașdeu

4th AMMA International Congress
Automobiles Mobility Modeling Alternative solutions

PROGRAM

17-19th October 2018
Cluj-Napoca, Romania