



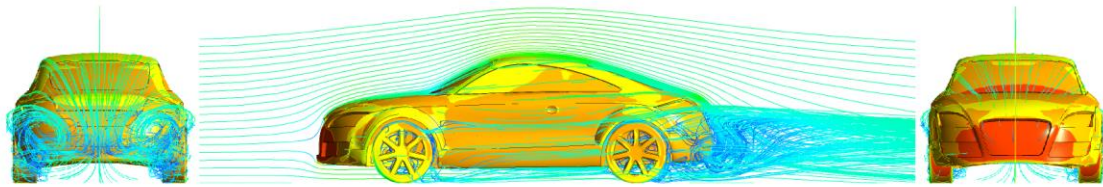
ESFA 2023

2-4 november 2023

ECONOMICITATEA, SIGURANȚA ȘI FIABILITATEA AUTOVEHICULELOR ECONOMICITY, SAFETY AND RELIABILITY FOR MOTOR VEHICLES

The XXXIIIrd SIAR International Automotive and Transport Engineering Congress

The Xth ESFA Congress hosted to the National University of Science and Technology POLITEHNICA Bucharest



National University of Science and Technology POLITEHNICA Bucharest is the oldest and most prestigious engineer school in Romania. Its traditions are related to the establishment, in 1818, by Gheorghe Lazăr, of the first higher technical school with teaching in Romanian, at the Saint Sava Abbey in Bucharest. In 1832, it was reorganized into the St. Sava College.

www.upb.ro



Automotive Engineering Department was founded in 1959 within the Faculty of Transports, from Polytechnic Institute of Bucharest. The department ensures the development of two bachelor's study programs and three master's study programs

www.autovehiculerutiere.pub.ro



Society of Automotive Engineers of Romania is the professional organization of automotive engineers, independent, non-profit legal entity, active member of FISITA (Fédération Internationale des Sociétés d'Ingénieurs des Techniques de l'Automobile – International Federation of Automotive Engineering Societies) and EAEC (European Automotive Engineers Cooperation).

www.siar.ro



ESFA congresses have been organized by the Automotive Engineering Department since 1981, being one of the scientific events with a high visibility among specialists in the field of Automotive Engineering. The ESFA congress is part of a series of SIAR, congresses that are organized annually, by rotation, in the universities that train engineers in the field of Automotive Engineering and in which there are sections with SIAR members.

www.siarcongress.eu

Preface

The ESFA Congress is a part of a series of SIAR (Society of Automotive Engineers from Romania) congresses which are organized annually, by rotation, in Romanian universities that train engineers in the field of Automotive Engineering (Bucharest, Braşov, Pitesti, Craiova, Cluj, Chisinau, Timișoara). This congress is the 33rd edition of the SIAR Congress.

The ESFA Congress are hosted by National University of Science and Technology POLITEHNICA Bucharest, the oldest and most prestigious engineer school from Romania. These congresses are organized by the Automotive Engineering Department since 1981, being one of the scientific events with great visibility among specialists in the field of Automotive Engineering.

According to the organizers' expectations, more than 150 Romanian specialists and from other countries, renowned companies involved in various activities specific to the field of automotive engineering, participated in this congress.

The Congress provided optimal conditions for the presentation of the latest achievements of scientific and technological research in the automotive industry and automotive components, in the field of vehicle maintenance and road transport, and facilitated the exchange of information and experience between participants.

One of the main purposes of the congress was to promote and present the most modern products and current technologies in the field of automotive engineering from the most prestigious romanian companies and abroad. For this purpose, exhibitions (indoor and outdoor), demonstrations, experimental tests, appropriate software presentations etc. were organized within the congress.

On the occasion of the SIAR congress, the final stage of the *Student Competition in Automotive Engineering "Prof. university Eng. Constantin GHIULAI"* is organized annually by SIAR, with two sections: Vehicle Dynamics (ninth edition) and Automotive CAD - CATIA (sixth edition).

About of 70 students from almost all Romanian university centers which have studied programs in the field of Automotive Engineering participated in the final stage of this competition.

ESFA 2023 Proceedings Editors

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Mihai BOLDIJAR – Managing Director, Robert Bosch, Romania

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Alexandru ANCUȚA



National University of Science and Technology POLITEHNICA Bucharest - Rectorat

Brief overview of ESFA2023 Congress

Plenary session - keynote speakers

- Cornel STAN, West Saxon University of Zwickau, Germany, « *Automobile of the future: a complex mobility system* » (on-line presentation)
- Adrian-Constantin CLENCI, Pitești University Center and Ioan-Mircea OPREAN, Bucharest University Center, National University of Science and Technology POLITEHNICA Bucharest, Romania, « *The internal combustion engine in the context of sustainable road mobility* »
- Stefan KANIA, AVL Austria, « *Software-defined vehicle using thermal management as an example* »
- Corina SANDU, Mechanical Engineering Department, Virginia Tech, USA, « *Advances in mobility of autonomous vehicles in off-road conditions* » (video recording)
- Robert BERCU and Marian POPESCU, FEV Romania, « *Euro 7 – Emissions & monitoring regulations – Future challenges* »
- Ioana TIRCOMNICU UNGA, INAS, Romania, « *Simulation in automotive: better, faster, cheaper* »



The final stage of the SIAR International Contest for Automotive Engineering Students “Professor Eng. Constantin GHIULAI”:

- *Vehicle Dynamics* section – 9th edition;
- *Automotive CAD* section – 6th edition.

Oral presentations of scientific papers by sections:

- *Green vehicles*
- *Smart vehicles*
- *Advanced powertrains*
- *Advanced engineering methods and tools*
- *Fuel economy and pollution control*
- *New materials and technologies*
- *Vehicle dynamics, safety and comfort*
- *Vehicle design and testing*
- *Terrain vehicles*
- *Traffic and road transport systems*



Exhibition

During the ESFA congress, indoor and outdoor exhibition stands of the sponsors and the main collaborators of the Automotive Engineering Department were organized within the Faculty of Transports.



Aknowledgements

The organizing committee would like to thank to National University of Science and Technology POLITEHNICA Bucharest, as well as the companies that provided support for the organization of the ESFA 2023 congress.

