

AUTO MOTIVE

Virtual Conference
17-19, November 2021

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International Conference on Electrical and Electronic Technologies for Automotive

Organized by



in cooperation with



International Microelectronics
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Italian Chapter



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AEIT AUTOMOTIVE 2021 Conference, after 5 successful editions, will be held on November, 17-19 to host regular papers in several areas of the multifunction automotive and e-mobility fields.

In light of the escalating spread of the Coronavirus (Covid-19) around the world, **AEIT AUTOMOTIVE** will be a virtual conference: technical sessions will be virtually held and speakers and attendants will be worldwide connected. The 6th AEIT International Conference on Electrical and Electronic Technologies for Automotive (**AEIT AUTOMOTIVE 2021**) aims to be a solid reference of the technical community to present and discuss the most recent results of scientific and technological research for the automotive industry, with particular emphasis to applications and new trends. The Conference covers all aspects of the segment focusing on electrical vehicles, connected autonomous cars, special vehicles, and e-mobility.

AEIT AUTOMOTIVE 2021 will bring together in an annual event the Electrical and Electronic specialists, Mechanical and Systems Engineers, and the Information and Communication Technology specialists. The Steering and the Technical Program Committee include experts from the Academic world, Associations, Key Industrial Stakeholders and Regulatory Authorities.

Scientific Sessions Key tracks are:

1. **Hybrid and electric powertrains and emission regulations**
2. **Energy infrastructures, fuel cells, and batteries**
3. **Advanced driver assistance systems and autonomous driving, safety and connectivity**
4. **Mobility, smart cities, energy grid, and communication networks**
5. **Power Electronics, Active and Passive Components, sensors and transducers**

AEIT AUTOMOTIVE 2021 is aimed at an academic and industrial audience, professionals active in automotive, including designers, manufacturers and users of technology, as well as analysts and investors interested in this sector in great development and of high social impact. Authors are invited to submit preliminary papers containing a complete description of the proposed technical contribution along with results, suitably framed in the related state of the art. Conference content will be submitted for inclusion into IEEE Xplore as well as other Abstracting and Indexing (A&I) databases.

Authors are invited to submit their manuscript proposal through the conference website EDAS (<https://edas.info/N28221>), indicating the track name into the manuscript, and uploading the file in the specific track folder.

call for papers

SPECIAL SESSIONS

The conference will include Special Sessions on highly specialized topics reporting technical trends and breakthroughs within the scope of the conference and the tracks. Special Sessions are organized at the initiative of one or more individuals, who must adhere to specific procedures published at the conference website. Proposers of Special Sessions are invited to submit their form through the conference website, indicating the affinity to one of the five tracks.

TUTORIALS

The conference will include a number of Tutorials on cutting edge technologies related to the conference topics. Therefore, the Organizing Committee invites outstanding researchers in respective area to propose tutorials to be presented during the conference.

BEST STUDENT PAPER AWARD

The best Contribution from Students and Graduates in recent years submitted to the conference will be awarded.

DEADLINES

- Special Session proposal: **April 30th, 2021**
- Preliminary paper submission: **May 15th, 2021**
- Notification of acceptance: **June 15th, 2021**
- Final Paper (Camera Ready): **July 31st, 2021**

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Track Chair:

Track 2 • Energy infrastructures, fuel cells, and batteries

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Track Components:

Federico Baronti - *Italy*
 Gianfranco Chicco - *Italy*
 Alfonso Damiano - *Italy*
 Samuele Grillo - *Italy*
 Roberto Petrella - *Italy*

Track 3 • Advanced driver assistance systems and autonomous driving, safety and connectivity

Track Chairs:

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 Franco Mazzenga - *Italy*
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 Giorgio Giacinto - *Italy*
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 Luca Mottola - *Italy*
 Giorgio Parladori - *Italy*
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Track 4 • Mobility, smart cities, energy grid, and communication networks

Track Chair:

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Pierpaolo Marchese - *Italy*

Maurizio Mayer - *Italy*

Fabrizio Pilo - *Italy*

Alessandro Vizzarri - *Italy*

Track 5 • Power Electronics, active and passive components, sensors and transducers

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Salvatore Musumeci - *Italy*

Track Components:

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Track 1 (ASTRI)

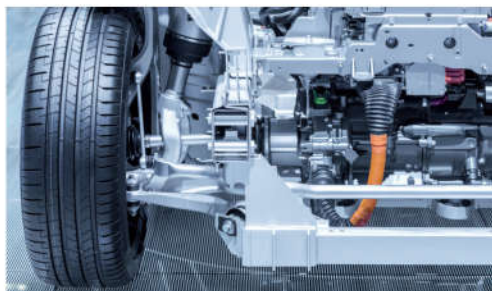
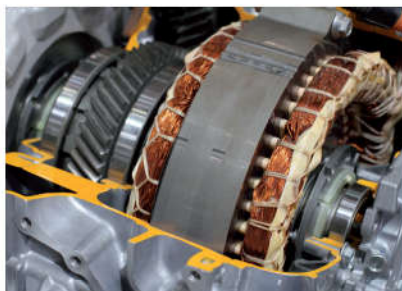
Hybrid and electric powertrains and emission regulations

Technical Committee Program chairs

Technical Committee Components

ASTRI, the AEIT Society providing technical support to Automotive 2021 Track 1, invites submittal of papers via EDAS (<https://edas.info/N28221>) that present the results of research, innovative tutorials, and summary of the state of the art on any topics falling within the: evolution of the electrical car, from mild hybrid to full electrical traction. Low emission regulations and high performance vehicles. Design, behavior and analysis of electrical machines and actuators. Design and analysis of other electromagnetic devices (micromachines, solenoids, actuators, and electromagnetic sensors). Design of electrical vehicle motor drives. Thermal management and packaging for traction drive systems. New AC drive control concepts, advanced

techniques, fuzzy logic, neural networks, adaptive drive control. New microprocessor and digital architecture for drives control applications; drive software design and algorithms, software simulations. Codes, standards, policies and regulations.



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Track 2 (AEE)

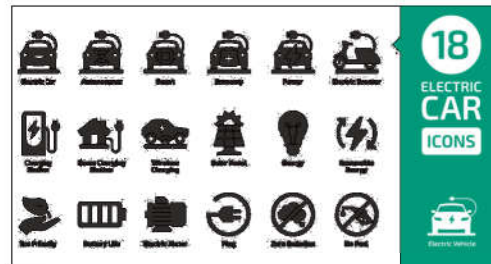
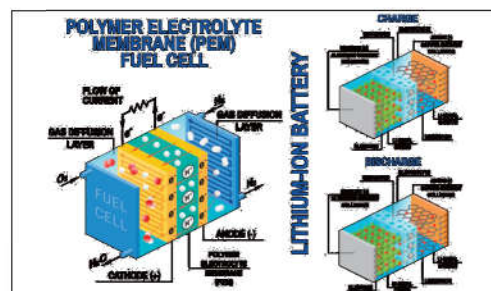
Energy infrastructures, fuel cells, and batteries

Technical Committee Program chairs
Massimo Ceraolo • Italy

Technical Committee Components
Federico Baronti • Italy
Gianfranco Chicco • Italy
Alfonso Damiano • Italy
Samuele Grillo • Italy
Roberto Petrella • Italy

AEE, the AEIT Society providing technical support to Automotive 2021 Track 2, invites submittal of papers that present the results of research, innovative tutorials, and summary of the state of the art on any topics falling within the: battery;

battery management, battery progresses, performance and cost, battery modeling and simulations. Fuel cells electrical car, autonomy and related recharging infrastructure. Smart grid involvement. Charging systems and infrastructures.



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Track 3 (AICT)

Advanced driver assistance systems and autonomous driving, safety and connectivity

Technical Committee Program chairs

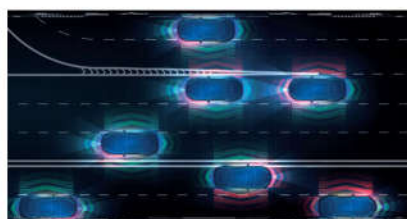
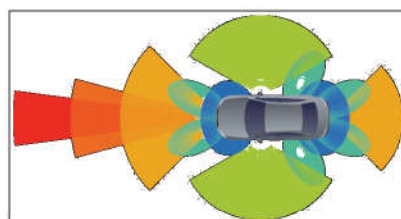
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Franco Mazzenga • Italy
Andrea Penza • Italy

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Vincenzo Cortese • Italy
Martin Duncan • Italy
Giovanni Garbo • Italy
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Romeo Giuliano • Italy
Francesco Matera • Italy
Luca Mottola • Italy
Giorgio Parladori • Italy
Maria Rita Spada • Italy
Loredana Vajano • Italy

AICT, the AEIT Society providing technical support to Automotive 2021 Track 3, invites submittal of papers that present the results of research, innovative tutorials, and summary of the state of the art on any topics falling within the connected cars, a major enabler for safety and traffic control. Assisted and autonomous driving: technology, safety, security, account-

ability and legal issues, social issues. Digital and analog sensors, electronics for vehicle diagnostics and control, safety assurance, protection of sensitive data. 5G and V2X interconnections for automotive applications. On board sensors, sensor fusion and situation understanding, Vehicle to Vehicle transmissions. Radar, lidar, ultrasound sensors. Decision tools. ITU recommendations.



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Track 4 (AEE, AICT, AMES, ASTRI)

Mobility, smart cities, energy grid, and communication networks

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Antonio Lionetto • Italy - AMES
Regina Lamedica • Italy - AEE
Roberto Langella • Italy - AEE
Lucia Lo Bello • Italy - AICT
Michela Longo • Italy - AEE
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Fabrizio Pilo • Italy - AEE
Alessandro Vizzarri - AICT

The Societies AEE, AICT, AMES, ASTRI of AEIT, that are providing technical support to Automotive 2021 Track 4, invite submittal of papers that present the results of research, innovative tutorials, and summary of the state of the art on

any topics falling within the Mobility, smart cities, energy grid, network and protocols related issues, interaction with smart city and mobility management, electrical infrastructures, and V2G interaction.



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• Preliminary paper submission: May 15th, 2021

Track 5 (AMES)

Power Electronics, active and passive components, sensors and transducers

Technical Committee Program chairs

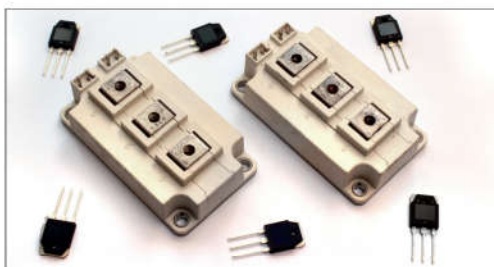
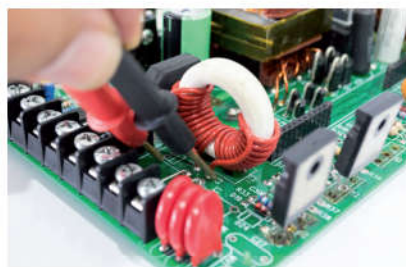
Carlo Cecati • Italy
Giuseppe Gattavari • Italy
Salvatore Musumeci • Italy

Technical Committee Components

Alessandro Busacca • Italy
Pietro Erratico • Italy
Vittorio Ferrari • Italy
Giuseppe Lullo • Italy
Akshay Rathore • Canada
Alessandro Serpi • Italy
Gianpaolo Vitale • Italy
Zhen Zhang • China

AMES, the AEIT Society providing technical support to Automotive 2021 Track 5, invites submittal of papers that present the results of research, innovative tutorials, and summary of the state of the art on any topics falling within the: semiconductor power devices (MOSFET, IGBT, Diode, etc.); power module technology, packaging, reliability, thermal aspects; capaci-

tor technologies; magnetic components; new techniques for application of power devices, gate drivers, snubbers, protections; modulation and control strategies for power converters; control, analysis and simulation of static power converters, rectifiers, inverters, dc,dc converters; photonics, laser manufacturing, car lighting



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Student Contest Committee

Romeo Giuliano • Chair, Italy

Francesca Fallucchi • Vice-Chair, Italy

Alessandro Vizzarri • Vice-Chair, Italy

Student Contest

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A Student Contest will be held during the 6th edition of the AEIT International Conference of Electrical and Electronic Technologies for Automotive (**AEIT AUTOMOTIVE 2021**).

The Conference Technical Program Committee and the Conference Chair encourage young researchers (Ph.D., Master Students, and Graduate in recent years 2018-2021), active in any of the areas of interest of Automotive, to participate in the 2021 Student Contest.

RULES

- Paper preparation rules, submission system and evaluation criteria are the same as for regular and Special Session papers
- Each paper should deal with student's research or technical activity in any field of interest of **AEIT AUTOMOTIVE 2021**; the paper can be authored by up to four students and their supervisor (a professor or a post-doc or an industry engineer). The main contributor (group leader) will be identified as the first name in the authors' list, the supervisor as the last one
- **Deadline: May 15, 2021**
- Papers will be evaluated according to well-established rules, based on originality, scientific content, and quality, writing style, quality of results and of analysis
- Papers must be submitted via EDAS (<https://edas.info/N28221>) using the special Track "**AEIT AUTOMOTIVE 2021** Student Contest"

In order to participate in the contest the paper must be covered by at least one conference registration at a special discounted fee. The review process will be managed by a special Student Contest Committee. The recipient(s) will be awarded at the conference closure.

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