

# AUTO MOTIVE

Virtual Conference  
17-19, November 2021

Organized by



## International Conference on Electrical and Electronic Technologies for Automotive

Call for Papers

**AEIT AUTOMOTIVE 2021** Conference, after 5 successful editions, will be held on November, 17-19 to host regular papers in several areas of the multi-form 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 6<sup>th</sup> AEIT International Conference on Electrical and Elec-

tronic 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**

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.

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IEEE ITALY SECTION  
IA/PEL C&S Italy Joint CHAPTER  
IA34/PEL35



## 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: **June 30<sup>th</sup>, 2021**
- Preliminary paper submission: **July 15<sup>th</sup>, 2021**
- Notification of acceptance: **September 15<sup>th</sup>, 2021**
- Final Paper (Camera Ready): **October 10<sup>th</sup>, 2021**

## EXECUTIVE COMMITTEE

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 Vittorio Cecconi • *Co-Chair - Italy*  
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## TECHNICAL PROGRAM COMMITTEE

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### Track 1 • Hybrid and electric powertrains and emission regulations

*Track Chair:*

### Track 2 • Energy infrastructures, fuel cells, and batteries

*Track Chair:* Massimo Ceraolo - *Italy*

*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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 Andrea Penza - *Italy*

*Track Components*

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 Martin Duncan - *Italy*  
 Giovanni Garbo - *Italy*  
 Giorgio Giacinto - *Italy*  
 Romeo Giuliano - *Italy*  
 Francesco Matera - *Italy*  
 Luca Mottola - *Italy*  
 Giorgio Parladori - *Italy*  
 Maria Rita Spada - *Italy*  
 Loredana Vajano - *Italy*

**Track 4 • Mobility, smart cities, energy grid, and communication networks**

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**Track Components:**

Livio Baldi - *Italy*

Antonio Lionetto - *Italy*

Regina Lamedica - *Italy*

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Michela Longo - *Italy*

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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Patrizia Livreri - *Italy*

Franco Maloberti - *Italy*

Mariapia Martino - *Italy*

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Daniel Milanese - *Italy*

Vito Giuseppe Monopoli - *Italy*

Roberto Oboe - *Italy*

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Gaetano Palumbo - *Italy*

Salvatore Pennisi - *Italy*

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Giorgio Pizzi - *Italy*

Silvia Maria Pietralunga - *Italy*

Roberta Ramponi - *Italy*

Vittorio Ravello - *Italy*

Santi Agatino Rizzo - *Italy*

Alfio Russo - *Italy*

Mario Saggio - *Italy*

Enrico Sangiorgi - *Italy*

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## International Conference on Electrical and Electronic Technologies for Automotive

### Student Contest Committee

Romeo Giuliano • Chair, Italy  
Francesca Fallucchi • Vice-Chair, Italy  
Alessandro Vizzari • Vice-Chair, Italy

## Student Contest

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A Student Contest will be held during the 6<sup>th</sup> 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: July 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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## International Conference on Electrical and Electronic Technologies for Automotive

• Preliminary paper submission: July 15<sup>th</sup>, 2021

### Track 1 (ASTRI)

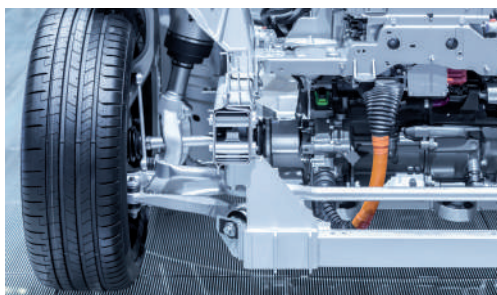
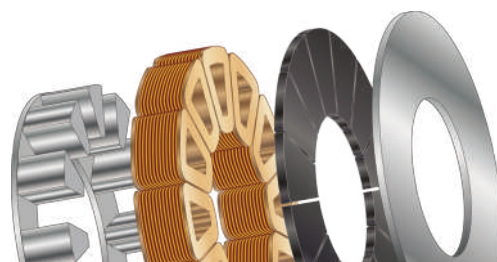
### Hybrid and electric powertrains and emission regulations

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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## International Conference on Electrical and Electronic Technologies for Automotive

• Preliminary paper submission: July 15<sup>th</sup>, 2021

### Track 2 (AEE)

### Energy infrastructures, fuel cells, and batteries

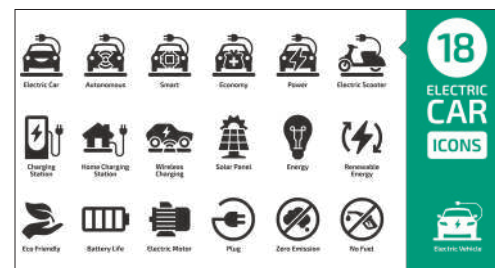
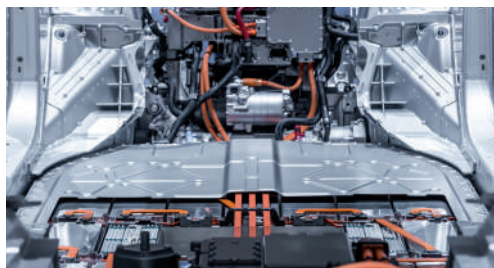
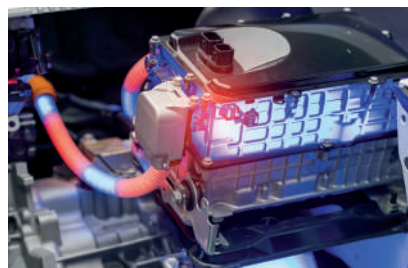
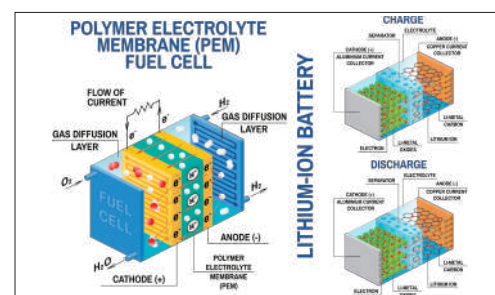
**Technical Committee Program chairs**  
Massimo Ceraolo • Italy

**Technical Committee Components**

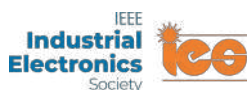
Federico Baronti • Italy  
Gianfranco Chicco • Italy  
Alfonso Damiano • Italy  
Samuele Grillo • Italy  
Roberto Petrella • Italy

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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## International Conference on Electrical and Electronic Technologies for Automotive

• Preliminary paper submission: July 15<sup>th</sup>, 2021

### Track 3 (AICT)

### Advanced driver assistance systems and autonomous driving, safety and connectivity

#### Technical Committee Program chairs

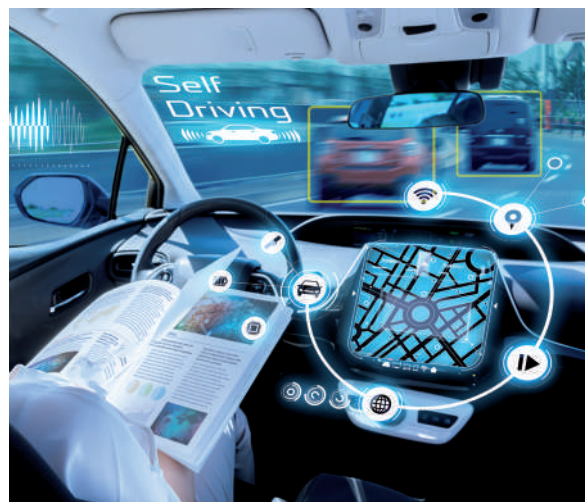
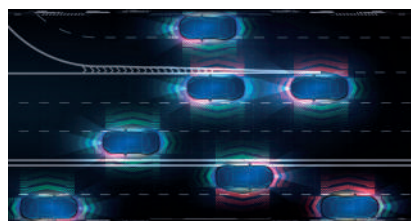
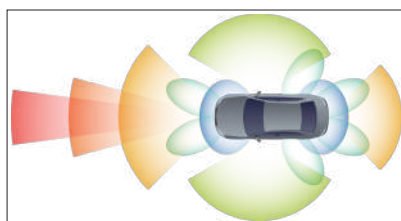
Gaspere Galati • Italy  
Franco Mazzenga • Italy  
Andrea Penza • Italy

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Vincenzo Cortese • Italy  
Martin Duncan • Italy  
Giovanni Garbo • Italy  
Giorgio Giacinto • Italy  
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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## International Conference on Electrical and Electronic Technologies for Automotive

• Preliminary paper submission: July 15<sup>th</sup>, 2021

### Track 4 (AEE, AICT, AMES, ASTRI)

### Mobility, smart cities, energy grid, and communication networks

**Technical Committee Program chairs**  
Carlo Alberto Nucci • Italy - AEE

**Technical Committee Components**

Livio Baldi • Italy - AMES  
Antonio Lionetto • Italy - AMES  
Regina Lamedica • Italy - AEE  
Roberto Langella • Italy - AEE  
Lucia Lo Bello • Italy - AICT  
Michela Longo • Italy - AEE  
Pierpaolo Marchese - AICT  
Maurizio Mayer - AICT  
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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## International Conference on Electrical and Electronic Technologies for Automotive

• Preliminary paper submission: July 15<sup>th</sup>, 2021

### Track 5 (AMES)

### Power Electronics, active and passive components, sensors and transducers

#### Technical Committee Program chairs

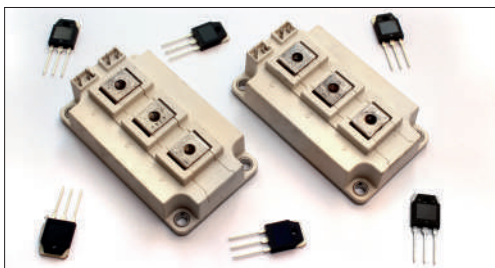
Carlo Cecati • Italy  
Giuseppe Gattavari • Italy  
Salvatore Musumeci • Italy

#### 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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