AEIT AUTOMOTIVE 2020 Conference will be held on November, 18-20 to host regular papers in several areas of the multiform automotive and e-mobility fields. In light of the escalating spread of the Coronavirus (Covid-19) around the world, AEIT AUTOMOTIVE is a virtual conference: technical sessions will be virtually held and speakers and attendants will be worldwide connected. The 5th AEIT International Conference of Electrical and Electronic Technologies for Automotive (AEIT AUTOMOTIVE 2020) 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 electric vehicles, connected autonomous cars, special vehicles, and e-mobility.

AEIT AUTOMOTIVE 2020 will bring together the Electrical and Electronic specialists, Mechanical and Systems Engineers, and the Information and Communication Technology specialists. Scientific Sessions Key tracks are:

1. Hybrid and electric powertrains
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

Arranged Special Sessions are:

SS1. ICT for Advanced Driver Assistance Systems
SS2. Learning and Signal Processing Techniques for Electric Vehicle’s Interaction and Management
SS3. Technological progresses and innovations in Electric Vehicles Optimized for Extended Life, Improved Value and increased Efficiency: the European vision

AUTOMOTIVE 2020 will host a satellite event SICE 2020 (Silicon Carbide in Europe, http://sice-2020.imm.cnr.it/) that will address advances in both basic research, as well as SiC devices and applications in the field of power electronics. In particular, the aim of SICE-2020 is to debate the latest achievements in SiC wafers growth, devices processing and applications, and to analyze their impact on the goals of the industry towards the development and commercialization of devices, modules and production equipment for several applications (automotive, railways transportation, avionics, renewable energies, etc.).

SICE-2020 is located in the framework of three running European projects on SiC (Challenge, Reaction, and WInSiC4AP) and within the IPCEI spirit. This unique feature will enable the interaction of different communities, working on complementary aspects of SiC technology, thus being an efficient driving force for the further development of SiC research in Europe.

The AUTOMOTIVE 2020 program includes: four speeches, two panels, a tutorial, and about 100 technical presentations including the satellite event SICE-2020.
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<th>Time</th>
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| 09:00-09:20  | Opening Session                             | **Welcome Statements**
Angelo Raciti - AEIT Automotive 2020 General Chair
Debora Stefani - AEIT General President
Angelo Raciti - AEIT Automotive 2020 General Chair |
| 09:20-10:40  | Keynote Speech 1 Hydrogen technologies for Automotive
Marcello Baricco - University of Turin, Italy |
| 10:00-10:40  | Keynote Speech 2 STMicroelectronics SiC power technology: market, history and applications, high performance features and advantages of silicon carbide technology
Antonio Imbruglia and Salvatore Cascino - STMicroelectronics, Italy |
| 10:40-11:40  | Technical Session 1 - Power Converters for Automotive Applications
Chair: Giuseppe Gattavari - AEIT, AMES, Italy |
|              | TS01_p01 Advanced Silicon MOSFETs Evaluation in Auxiliary DC-DC Converters for HEV/EV Applications
Salvatore Musumeci (Politecnico di Torino, Italy); Santi Agatino Rizzo (University of Catania, Italy); Filippo Scrimizzi, Filadelfo Fusillo and Giuseppe Longo (STMicroelectronics, Italy) |
|              | TS01_p02 High Frequency Operation of SuperJunction MOSFET enhanced with Kelvin Source Pin
Mario Cacciato, Santi Agatino Rizzo, Giuseppe Scarcella and Giacomo Scelba (University of Catania, Italy); Domenico Nardo, Rosario Scollo, Alfio Scuto and Giuseppe Sorrentino (STMicroelectronics, Italy); Mattia Alessio Rizzo (Development Engineering Automation, Italy); |
|              | TS01_p03 High Precision Uni-polar DC Power Converter with Sextupole Magnet of Storage Ring in Taiwan Light Source
Yongseng Wong (NSRRC Taiwan, Taiwan) |
|              | TS01_p04 Design and Modeling of an Interleaving Boost Converter with Quasi-Saturated Inductors for Electric Vehicles
Daniele Scirè and Giuseppe Lullo (University of Palermo, Italy); Gianpaolo Vitale (CNR-ICAR, Italy) |
| 11:40-13:00  | Technical Session 2 - Advanced and Wide Band Gap device applications in automotive
Chair: Vito Monopoli - Politecnico di Bari, Italy |
|              | TS02_p01 Trench-Gate MOSFETs in 48V Platform for Mild Hybrid Electric Vehicle Applications
Salvatore Musumeci, Alberto Tenconi and Michele Pastorelli (Politecnico di Torino, Italy); Filippo Scrimizzi, Giuseppe Longo and Carmelo Mistretta (STMicroelectronics, Italy) |
TS02_p02 Study of behavior of p-gate in Power GaN under positive voltage
Maurizio Moschetti, Cristina Miccoli, Patrick Fiorenza, Giuseppe Greco, Fabrizio Roccaforte, Santo Reina, Antonino Parisi and Ferdinando Iucolano (STMicroelectronics, Italy)

TS02_p03 Compact design of DCDC converter with new STi2Gan solution
Romeo Letor, Filippo Scrimizzi, Ferdinando Iucolano, Maurizio Moschetti and Giuseppe Longo (STMicroelectronics, Italy)

TS02_p04 From T-CAD simulations to large signal model for GaN RF device
Cristina Miccoli, Viviana Cerantonio, Marcello Giuffrida and Ferdinando Iucolano (STMicroelectronics, Italy); Alessandro Chini (University of Modena and Reggio Emilia, Italy)

TS02_p05 Simulation of parasitic effects on Silicon Carbide devices for automotive electric traction
Filippo Pellitteri, Massimo Caruso, Rosario Miceli, Dario Benigno, Salvatore Stivala, Alessandro Busacca (University of Palermo, Italy); Vincenzo Vinciguerra, Angelo Alberto Messina, Alessandra Raffa (STMicroelectronics, Italy)

TS02_p06 Switching capacitors transformerless bidirectional DC-DC converter
Christian Puccio, Filippo Pellitteri, Massimo Caruso and Rosario Miceli (University of Palermo, Italy)

14:30-15:30 Technical Session 3 - Silicon Carbide Automotive Applications
Chair: Salvatore Musumeci - Politecnico di Torino, Italy

TS03_p01 Overvoltage and Ringing in a State-of-the-art SiC MOSFET Power Module for Traction Inverters
Antonio Fallico, Santi Agatino Rizzo and Angelo Raciti (University of Catania, Italy); Fabio Mandrile and Salvatore Musumeci (Politecnico di Torino, Italy); Luigi Abbatelli and Elena Venuti (STMicroelectronics, Italy)

TS03_p02 Performance Assessment of an Automotive-grade TO-247 IGBT copacked with SiC diode in a bidirectional buck converter
Luigi Abbatelli, Domenico Paternostro (STMicroelectronics, Italy); Mario Cacciato, Santi Agatino Rizzo, Giuseppe Scarcella and Giacomo Scelba (University of Catania, Italy)

TS03_p03 High efficiency Bidirectional SiC-based Power Converter for V2G/V2H applications in a nano/microgrid scenario
Giuseppe Aiello, Francesco Gennaro and Antonio Imbruglia (STMicroelectronics, Italy); Mario Cacciato (University of Catania, Italy)

TS03_p04 The "first and euRopEAn siC eighT Inches pilOt liNe": a project, called REACTION, that will boost key SiC Technologies upgrading (developments) in Europe, unleashing Applications in the Automotive Power Electronics Sector
Angelo Messina, Antonio Imbruglia, Michele Calabretta and Vincenzo Vinciguerra (STMicroelectronics, Italy); Alessandro Sitta (STMicroelectronics & University of Catania, Italy); Calin Moise, Marius Enachescu (University Politehnica of Bucharest, Romania); Fabrizio Roccaforte (CNR-IMM, Italy)
15:30-16:15  Technical Session 4 - Charging systems for automotive applications
Chair: Roberto Petrella - University of Udine, Italy
**TS04_p01** Advanced Techniques for Powering Wireless Sensor Nodes through Energy Harvesting and Wireless Power Transfer
Roberto La Rosa (STMicroelectronics, Italy); Mario Costanza, Patrizia Livreri (University of Palermo, Italy)
**TS04_p02** Modulation Strategy Assessment for 3-Level Unidirectional Rectifiers in Electric Vehicle Ultra-Fast Charging Applications
Davide Cittanti and Radu Bojoi (Politecnico di Torino, Italy) (student contest)
**TS04_p03** Iterative Design of a 60 kW All-Si Modular LLC Converter for Electric Vehicle Ultra-Fast Charging
Davide Cittanti, Enrico Vico, Matteo Gregorio, Fabio Mandrile and Radu Bojoi (Politecnico di Torino, Italy) (student contest)

16:15-18:00  Panel I - ECSEL for Automotive: Lighthouse projects
Chair: Livio Baldi - AEIT-AMES, Italy
**Project “PRYSTINE”** - G. Dimitrakopoulos - Infineon-Harokopio University, Greece
**Project “Madein4”** - I. Englard - Applied Materials, Israel
**Project “EnableS3”** - A. Leitner - AVL, Austria
**Project “3CCar”** - P. Perlo - I-FEVS, Italy
**Project “AUTODRIVE”** - J. Rainer - Infineon, Germany

**PRYSTINE** - Programmable Systems for Intelligence in Automobiles ([https://prystine.eu/](https://prystine.eu/))
**Madein4** - Metrology Advances for Digitized ECS industry 4.0 ([https://www.semi.org/eu/MADEin4](https://www.semi.org/eu/MADEin4))
**EnableS3** - European Initiative to Enable Validation for Highly Automated Safe and Secure Systems ([https://enable-s3.eu/](https://enable-s3.eu/))
**3CCar** - Integrated Components for Complexity Control in affordable electrified cars ([https://3ccar.eu/](https://3ccar.eu/))
**AUTODRIVE** - Advancing fail-aware, fail-safe, and fail-operational electronic components, systems, and architectures for fully automated driving to make future mobility safer, affordable, and end-user acceptable ([https://autodrive-project.eu/](https://autodrive-project.eu/))

18:00-19:00  Technical Session 5 - Modeling, simulations of power train structures
Chair: Silvio Vaschetto - Politecnico di Torino, Italy
**TS05_p01** A Multi Battery EREV: an Innovative Structure to Improve Flexibility and Performances
Sergio C. Brofferio (Politecnico di Milano, Italy); Ernesto Marazzi (Siae Microelettronica, Italy)
**TS05_p02** Assessing Lightweight Layouts for a Parallel Hybrid Electric Vehicle Driveline
Matteo Spano, Pier Giuseppe Anselma, Giovanni Belingardi, Daniela Misul and Ezio Spessa (Politecnico di Torino, Italy)
**TS05_p03** 48V Electric Vehicle Powertrain Optimal Model-based Design Methodology
Kazusa Yamamoto (Valeo, France); Matthieu Ponchant and Franck Sellier (Siemens Industry Software, France); Tommaso Favilli, Luca Pugi and Lorenzo Berzi (University of Florence, Italy)
**TS05_p04** Test cycle simulation of an electric car with regenerative braking
Roberta Di Fonso and Carlo Cecati (University of L’Aquila, Italy) (student contest)
**TS05_p05** Supercapacitor Assisted Hybrid Electric Vehicle Powertrain and Power Selection using Fuzzy Rule-Based Algorithm
Brayden Noh (Independent Researcher, USA)
**Thursday, November 19**

**09:00-09:40**  
**Keynote Speech 3** - Automotive Megatrends: Today’s cars are shifting to new all-round mobility services  
Alfio Russo - STMicroelectronics, Italy

**09:50-10:30**  
**Keynote Speech 4** - New challenges in SiC epitaxial growth and in processing for power devices and new applications  
Francesco La Via - CNR-IMM, Italy

**PARALLEL SESSIONS**

**11:00-13:00**  
**Room I Technical Sessions 6**  
Thermal management and life-cycle of batteries  
Chair: Alfonso Damiano - University of Cagliari, Italy

**TS06_p01**  
A Holistic Approach on Improving a Liquid Cooled Battery Module  
Marcel Nöller, Robert Renz, Martin Eisele and Katharina Bause (Karlsruhe Institute of Technology (KIT) Germany)

**TS06_p02**  
Aluminum Heat Sink Assisted Air-Cooling Thermal Management System for High Current Applications in Electric Vehicles  
Hamidreza Behi (Vrije Universiteit Brussel, Belgium); Joris Jaguemont, Foad Heidari Gandoman, Sahar Khaleghi, Joeri Van Mierlo and Maitane Berecibar (Vrije Universiteit Brussel, Belgium); Danial Karimi (Vrije Universiteit Brussel & Flanders Make, Belgium)

**TS06_p03**  
Simplified Electro-Thermal Model For Lithium Cells Based On Experimental Tests  
Claudio Scarpelli, Michele Barbieri, Massimo Ceraolo, Giovanni Lutzemberger (University of Pisa, Italy); Tommaso Pesso and Monica Giovannucci (Toyota Material Handling Manufacturing Italy, Italy)

**TS06_p04**  
Electrothermal Battery Pack Model for Automotive Application: Design and Validation  
Alessandro Rizzello, Santo Scavuzzo, Alessandro Ferraris, Andrea Airale (BEOND, Italy); Massimiliana Carello (Politecnico di Torino, Italy)

**TS06_p05**  
Optimal Life-Cycle Costs of Batteries for Different Electric Cars  
Alberto Bocca (Politecnico di Torino, Italy); Donkyu Baek (Chungbuk National University, South Korea)

**Interval**

**14:30-15:30**  
**Room I Technical Session 7**  
New Mobility enablers  
Chairs: Pierpaolo Marchese - AEIT-AICT and Andrea Penza - AEIT-AICT

**TS07_p01**  
Opportunity fast-charging of e-buses: a preliminary study for the city of Savona  
Federica Foadelli, Carola Leone and Michela Longo (Politecnico di Milano, Italy); Stefano Bracco, Federico Delfino and Giorgio Piazza (University of Genoa, Italy)

**TS07_p02**  
Urban Drive Simulation of a Li-Ion battery/SC Supplied EV by an Integrated Model  
Mauro Andriollo and Andrea Tortella (University of Padova, Italy)

**TS07_p03**  
Decision Making Optimization for Job Offloading in Vehicular Edge Computing Networks  
Giovanni Schembra and Christian Grasso (University of Catania, Italy)

**TS07_p04**  
Syncing a Smart City within an Evolutionary Dynamical Cooperative Environment  
Barbara Attanasio, Aurelio La Corte and Marialisa Scatà (University of Catania, Italy)
**Room I** Technical Sessions 8 Smart Mobility in smart Cities

**Chairs:** Pierpaolo Marchese - AEIT-AICT, Italy and Andrea Penza - AEIT-AICT, Italy

**TS08_p01** Automotive in "The Stack": a cross sectional view of the field, from Earth, through Platforms to nonhuman Users  
Giorgio Pizzi (Ministry of Infrastructure and Transport, Italy)

**TS08_p02** Human daily activity behavioural clustering from Time Use Survey  
Andrea Bellagarda, Edoardo Patti, Enrico Macii and Lorenzo Bottaccioi (Politecnico di Torino, Italy)

**TS08_p03** An I2V communication network for driver assistance in public transport  
Mattia Bersani, Guanqi Ding, Simone Mentasti, Stefano Arrigoni, Michele Vignati, Edoardo Sabbioni, Davide Tarsitano and Federico Cheli (Politecnico di Milano, Italy)

**TS08_p04** Techniques for improving localization applications running on low-cost IoT devices  
Evelina Forno, Enrico Macii and Gianvito Urgese (Politecnico di Torino, Italy); Simone Moio and Michael Schenatti (Tierra, Italy)

**TS08_p05** Performance assessment of the IEEE 802.1Qch in an automotive scenario  
Luca Leonardi, Lucia Lo Bello and Gaetano Patti (University of Catania, Italy)

**TS08_p06** Artificial Intelligence vs Autonomous Cars vs General Data Protection Regulation  
Raffaele Zallone (Studio Legale Zallone, Italy)

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**Room II**  
**SICE-2020 Session I “Materials”**

**Chair:** Fabrizio Roccaforte - CNR-IMM, Italy

**S01_p01** Overview of Project “CHALLENGE” (3C-SiC Hetero-epitaxially grown on silicon compliant substrates and 3C-SiC substrates for sustainable wide-band-Gap power devices)  
Francesco La Via (CNR-IMM, Italy)

**S01_p02** Silicon Carbide Improvements from LPE  
Danilo Crippa (LPE, Italy)

**S01_p03** Epitaxial Growth on Low Off-axis and On-axis SiC Substrates  
Peder Bergman (Linköping University, Sweden)

**S01_p04** Hetero-epitaxy of 3C-SiC/Si on deeply patterned substrates  
Roberto Bergamaschi (Università di Milano Bicocca, Italy)

**S01_p05** The process of hetero-epitaxy of 3C-SiC/Si: new developments  
Marcin Zielinski (NOVASiC, France)

**S01_p06** The bulk growth of 3C-SiC: different approaches  
Peter Wellmann (University of Erlanghen, Germany)
**Room II**  
**SICE-2020 Session II “Devices and processing”**

**Chair:** Susanna Reggiani - *University of Bologna - IUNET, Italy*

**S02.p01** Overview of Project “WInSiC4AP” (Wide Bandgap Innovative SiC for Advanced Power)  
Leoluca Liggio (Distretto Tecnologico Micro e Nano Sistemi, Catania, Italy); Antonio Imbruglia (STMicroelectronics, Italy)

**S02.p02** Processing and first results of 3C-SiC devices  
Mike Jennings (University of Swansea, UK)

**S02.p03** Laser annealing for Ohmic contact in 4H-SiC devices  
Clément Berger (University of Tours - GREMAN, France)

**S02.p04** Study of annealing processes for electrical activation of p and n-type doping implantation on 4H-SiC  
Monia Spera (CNR-IMM, Italy)

**S02.p05** Estimation of Activation and Compensation Ratios in Al+ Ion Implanted 4H-SiC Layers: comparison of two methodologies  
Roberta Nipoti (CNR-IMM, Italy)

**S02.p06** Current conduction mechanism in forward and reverse biased WC Schottky contact on 4H-SiC  
Marilena Vivona (CNR-IMM, Italy)

**S02.p07** Preliminary Evaluation of $V_{th}$ and $R_{on}$ Drifts in SiC devices  
Marcello Cioni (University of Modena and Reggio Emilia, Italy)

**S02.p08** 3C-SiC MOSFET structure and oxide reliability  
Fan Li (University of Warwick, United Kingdom)

**Room II**  
**SICE-2020 Session III “Reliability and Applications”**

**Chair:** Antonio Imbruglia, Angelo Messina - *STMicroelectronics, Italy*

**S03.p01** Overview of Project “REACTION” (first and euRopEAn siC eigTh Inches pilOt line)  
Angelo Messina (STMicroelectronics, Italy)

**S03.p02** Reliability issues in 4H-SiC MOSFETs: impact of oxide traps and threading dislocations  
Patrick Fiorenza (CNR-IMM, Italy)

**S03.p03** Reliability assessment through mathematical model of SiC MOSFET  
Salvatore Patanè (University of Messina, Italy)

**S03.p04** Simulation of thermal effects in 4H-SiC MOSFETs  
Daniela Cavallaro (STMicroelectronics, Italy)

**S03.p05** Experimental tests and EMI characterization on a SiC switching device  
Filippo Pellitteri (University of Palermo, Italy)

**S03.p06** Electrothermal Circuit Model of SiC Power MOSFET Based on Neural Network  
Ales Chvala (SUT, Bratislava, Slovakia)

**S03.p07** SiC Based 15kW DC-DC Converter Development as an outcome of the first and euRopEAn siC eigTh Inches pilOt line - the ECSEL-JU  
Tomasz Bieniek (IET, Poland)

**S03.p08** Recent advances in packaging technology for SiC power devices  
Jacques Favre (APSI3D, France)
### Friday, November 20

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<td>09:00-10:00</td>
<td>Tutorial - Circuit solutions for improving power conversion efficiency through the use of wide bandgap technologies</td>
<td>Filippo Di Giovanni - STMicroelectronics, Italy</td>
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<td>10:00-11:00</td>
<td>Technical Session 9 - Advanced driver assistance systems and autonomous driving, safety and connectivity: environmental perception</td>
<td>Chair: Francesco Braghin - Politecnico di Milano, Italy</td>
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<td><strong>TS09_p01</strong> LiDAR - stereo camera fusion for accurate depth estimation</td>
<td>Hafeez Husain Cholakkal, Simone Mentasti, Mattia Bersani, Stefano Arrigoni, Matteo Matteucci and Federico Cheli (Politecnico di Milano, Italy)</td>
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<td><strong>TS09_p02</strong> LiDAR point-cloud processing based on projection methods: a comparison</td>
<td>Guidong Yang and Yafei Wang (Shanghai Jiao Tong University, China); Simone Mentasti, Mattia Bersani, Francesco Braghin and Federico Cheli (Politecnico di Milano, Italy)</td>
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<td><strong>TS09_p03</strong> Design and optimization of silicon-integrated inductive components for automotive radar applications in K- and W-bands</td>
<td>Simone Spataro and Egidio Ragonese (University of Catania, Italy)</td>
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<td><strong>TS09_p04</strong> Innovative Saliency based Deep Driving Scene Understanding System for Automatic Safety Assessment in Next-Generation Cars</td>
<td>Francesco Rundo (STMicroelectronics, Italy); Sabrina Conoci (University of Messina, Italy); Sebastiano Battiato, Francesca Trenta and Concetto Spampinato (University of Catania, Italy)</td>
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<td>11:00-12:00</td>
<td>Technical Session 10 - Advanced driver assistance systems and autonomous driving, safety and connectivity: user acceptance</td>
<td>Chair: Martin Duncan - STMicroelectronics, Italy</td>
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<td><strong>TS10_p01</strong> User requirements for autonomous vehicles - a comparative analysis of expert and non-expert-based approach</td>
<td>Aleksandra Rodak, Mikołaj Kruszewski and Małgorzata Pędzierska (Motor Transport Institute, Poland); Samantha Jamson (University of Leeds, United Kingdom)</td>
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<td><strong>TS10_p02</strong> A flexible virtual environment for autonomous driving agent-human interaction testing</td>
<td>Giorgio M. Grasso and Giovanni D’Italia (University of Messina, Italy); Sebastiano Battiato (University of Catania, Italy)</td>
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<td><strong>TS10_p03</strong> Deep Bio-Sensing Embedded System for a Robust Car-Driving Safety Assessment</td>
<td>Francesco Rundo (STMicroelectronics, Italy); Sabrina Conoci (University of Messina, Italy); Concetto Spampinato, Francesca Trenta and Sebastiano Battiato (University of Catania, Italy)</td>
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<td><strong>TS10_p04</strong> Advanced 1D Temporal Deep Dilated Convolutional Embedded Perceptual System for Fast Car-Driver Drowsiness Monitoring</td>
<td>Francesco Rundo (STMicroelectronics, Italy); Concetto Spampinato, Sebastiano Battiato and Francesca Trenta (University of Catania, Italy); Sabrina Conoci (University of Messina, Italy)</td>
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12:00-13:00  **Technical Session 11** - *Advanced driver assistance systems and autonomous driving, safety and connectivity: motion planning*

**Chair:** Romeo Giuliano - *Università di Roma “Guglielmo Marconi”, Italy*

**TS11_p01**  *Multi-State End-to-End Learning for Autonomous Vehicle Lateral Control*
Simone Mentasti, Mattia Bersani, Matteo Matteucci and Federico Cheli (Politecnico di Milano, Italy)

**TS11_p02**  *A local trajectory planning and control method for autonomous vehicles based on the RRT algorithm*
Stefano Feraco, Sara Luciani, Angelo Bonfitto, Nicola Amati and Andrea Tonoli (Politecnico di Torino, Italy)

**TS11_p03**  *Energy-Efficient Coordinated Electric Truck-Drone Hybrid Delivery Service Planning*
Donkyu Baek (Chungbuk National University, South Korea); Naehyuck Chang (KAIST, South Korea); Yukai Chen, Enrico Macii and Massimo Poncino (Politecnico di Torino, Italy)

**TS11_p04**  *Four-Wheel Vehicle Driving by using a Spatio-Temporal Characterization of the P300 Brain Potential*
Giovanni Mezzina and Daniela De Venuto (Politecnico di Bari, Italy)

14:30-15:15  **Technical Session 12** - *Advanced driver assistance systems and autonomous driving, safety and connectivity: social impact*

**Chair:** Francesca Fallucchi - *Università di Roma “Guglielmo Marconi”, Italy*

**TS12_p01**  *WebAssembly: Paving the Way Towards a Unified and Distributed Intra-Vehicle Computing- and Data-Acquisition-Platform?*
Fabian Scheidl (BMW Group, Germany & Technische Universität Wien, Austria)

**TS12_p02**  *Bringing Trust to Autonomous Mobility*
Pavlos Kosmidis (Charitinis Sakkada 5 & Catalink Limited, Cyprus); Konstantinos Demestichas (Catalink Limited, Cyprus); Konstantinos Avgerinakis (Catalink Limited, Greece); Eleni Trouva (INTRASOFT International, Greece); Stefano Bianchi and Alessandro Barisone (Algowatt, Italy); Konstantinos Rivas and Konstantinos Moustakas (University of Patras, Greece); Aleksandra Rodak, Mikołaj Kuszewski and Małgorzata Pędzierska (Motor Transport Institute, Poland)

**TS12_p03**  *Why Europe does not need revolutionary rules for automated vehicles*
Alejandro Zornoza (Universidad Carlos III de Madrid, Spain) (student contest)

15:15-16:15  **Technical Session 13** - *ICT for Advanced Driver Assistance Systems I (Special Session)*

**Chairs:** Giovanni Cancellieri - *Università Politecnica delle Marche, Italy* and Andrea Penza - AEIT-AICT, Italy

**TS13_p01**  *Benchmarking of Computer Vision Algorithms for Driver Monitoring on Automotive-grade Devices*
Sebastiano Battito, Roberto Leotta, Alessandro Ortis and Francesca Trenta (University of Catania, Italy); Sabrina Conoci and Francesco Rundo (STMicroelectronics, Italy)

**TS13_p02**  *V2X Communication Technologies and Service Requirements for Connected and Autonomous Driving*
Elena Cinque, Francesco Valentini, Arianna Persia and Sandro Chiocchio (Radiolabs Consortium, Italy); Fortunato Santucci and Marco Pratesi (University of L’Aquila, Italy)
16:15-17:00  
**Technical Session 14 - ICT for Advanced Driver Assistance Systems II (Special Session)**

**Chairs:** Franco Mazzenga - Università di Roma Tor Vergata and Andrea Penza - AEIT, AICT

- **TS14.p01 Data transmission in automotive applications and security/safety requirements**
  Giovanni Cancellieri and Massimo Battaglioni (Università Politecnica delle Marche, Italy)

- **TS14.p02 On the Role of Explainable Machine Learning for Secure Smart Vehicles**
  Michele Scalas and Giorgio Giacinto (University of Cagliari, Italy)

- **TS14.p03 Differentiated Protection in 5G Vehicular Networks**
  Elisabetta Amato (University of Bologna, Italy); Federico Tonini (Chalmers University of Technology, Sweden); Carla Raffaelli (University of Bologna, Italy)

17:00-17:30  
**Technical Session 15 - Machine-Learning and Signal Processing Techniques for Electric Vehicle’s Interaction and Management (Special Session)**

**Chair:** Emanuele Principi - Università Politecnica delle Marche, Italy

- **TS15.p01 Sparse Approximation of LS-SVM for LPV-ARX Model Identification: Application to a Powertrain Subsystem**
  Luca Cavanini (Industrial Systems and Control, Italy); Francesco Ferracuti, Sauro Longhi, Enrico Marchegiani and Andrea Monteriù (Università Politecnica delle Marche, Italy)

- **TS15.p02 Review on Electric Vehicles Exterior Noise Generation and Evaluation**
  Alessandro Terenzi, Susanna Spinsante and Stefania Cecchi (Università Politecnica delle Marche, Italy)

17:30-18:30  
**Technical Session 16 - Technological Progresses and Innovations in Electric Vehicles Optimized for Extended Life, Improved Value and Increased Efficiency: the European Vision (Special Session)**

**Chair:** Mariapia Martino - Politecnico di Torino, Italy

- **TS16.p01 Hair Pin motors: possible impregnation and encapsulation techniques, materials and variables to be considered**
  Annkathrin Steinacker and Nils Bergemann (ELANTAS Europe, Germany); Piero Braghero, Fabio Campanini, Nicola Cuminetti, Janosc De Buck and Mattia Ferraris (ELANTAS Europe, Italy)

- **TS16.p02 Frequency Analysis and Comparison of LCCL and CLLC Compensations for Capacitive Wireless Power Transfer**
  Fabio Corti and Alberto Reatti (University of Florence, Italy); Salvatore Musumeci (Politecnico di Torino, Italy)

- **TS16.p03 Design of a High-Speed Electric Propulsion System for Electric Vehicles**
  Andrea Floris, Mario Porru, Alfonso Damiano and Alessandro Serpi (University of Cagliari, Italy)

- **TS16.p04 Advanced Functionally Integrated E-Axe for A-Segment Electric Vehicles**
  Mariapia Martino, Paolo Pescetto and Gianmario Pellegrino (Politecnico di Torino, Italy)

18:30-18:40  
**Conference Closure**