Call for Special Session Proposal

The ESARS-ITEC 2024 Organizing Committee invites proposals for Special Sessions addressing new or emerging topics in electrical transportation systems. The goal is to provide a forum for focused discussions on either new topics or innovative applications of established approaches.

Special Session proposals should include the following details:

1. **Title of the Proposed Special Session**
2. **Names, Affiliations, and Contact Information of Session Organizers**
3. **Brief Biographies of Session Organizers**
4. **Brief Description of the Proposed Session Topic**
   - Discuss why this topic is suitable for an ESARS-ITEC 2024 special session.
5. **List of Six (6) Contributed Papers**
   - Include titles, author names and affiliations, and short abstracts.
   - Note: Upon acceptance of the special session proposal, contributed papers will be submitted like regular papers. Organizers are limited to authoring at most one paper in the session.

Proposals will be evaluated based on:
- Topic timeliness and expected impact.
- Qualifications of the organizers.
- List of contributed papers and their authors.

Accepted Special Session Papers will undergo a review process similar to that of regular papers submitted to ESARS-ITEC 2024. All proposal should be submitted via the specific form, available HERE.

**Main topics of ESARS-ITEC 2024 include but are not limited to:**

**AIRCRAFT ELECTRICAL SYSTEMS**
- Advanced safety and technologies to enable the all-electric aircraft
- Electrical systems
- Electrical auxiliaries
- New storage systems

**Power generation and distribution**
- New sources of aircraft main power generation
- Advanced transformer technologies
- On-board energy management

**Electrical Drives and Power Systems**
- Design of motors and their Control
- Fault Diagnostics
- Power Systems Control and Stability
- Reliability

**SHORESIDE ELECTRICAL SYSTEMS**
- Electrical propulsion
- Converters and Drives
- All-electric and hybrid ships

**Hybrid systems**
- System integration
- Storage systems
- Monitoring, simulation and design methodologies

**Power Generation**
- Power System Control
- Stability and quality
- Electrical generators
- Design methodologies

**Ship functional safety**
- Reliability and availability
- Reconfigurability
- Diagnostics

**Electric solutions for improving efficiency**
- Adoption of efficient technologies
- Energy management

**RAILWAY AND ROLLING STOCK ELECTRICAL SYSTEMS**
- Power Train
- Trauma converter and motor topologies
- Energy management

**Power Supply Systems**
- Substations
- On-board storage systems and Conductor rail systems
- Energy management

**Achievements and dual mode vehicle**
- New energy sources and storage systems
- Electric Hybrid power trains
- Multi voltage powertrain and mixer

**Modeling, simulation and design methods**
- Complete System
- Load flow, optimization method design
- Hardware-in-the-loop
- Electromagnetic compatibility
- Safety and security systems
- Railway signaling and interoperability systems
- Light railways vehicles for urban mobility
- Metro and underground urban rail systems

**ROAD VEHICLES ELECTRICAL SYSTEMS**
- Vehicle environment
- On-board bus and coach systems
- Interface power converters
- Powertrain control strategies
- Powertrain architecture
- Thermal management
- Electric propulsion systems
- Powertrain systems
- Energy management and control strategies

**Battery chargers:**
- Wireless, Fast, and Ultra-Fast
- On-board/off-board smart charging
- Integrated powertrain converter and battery charger

**ENERGY STORAGE AND FUEL CELLS SYSTEMS**
- Modeling
- Thermal management
- Battery management
- Battery Management Systems
- SOC and SOH estimation methods

**HYBRID ELECTRIC VEHICLES**
- Power electronics
- Powertrain systems
- Energy management

**E-MOBILITY**
- Grid interface technologies
- Management for charging station facilities
- Microgrid charging stations
- Ultrafast charging stations
- Vehicle-to-grid (V2G), vehicle-to-building (V2H), vehicle-to-house (V2H)
- Battery chargers

**INFRASTRUCTURES FOR ELECTRIC MOBILITY & E-MOBILITY**
- Energy Storage Systems and RES integration
- DC, AC Distributed architectures
- Smart EV charging scheduling
- Electrification of heavy-duty and off-road vehicles

**H-MOBILITY**
- Novel hydrogen storage technologies
- Fuel cell converters
- RES integration for green hydrogen production
- Systems, actuators, and monitoring systems for hydrogen plants

**BATTERY CHARGERS: WIRELESS, FAST, AND ULTRA-FAST**
- On-board/off-board smart charging
- Islanded and nonsynchronized charger
- Stationary and dynamic wireless charging in urban scenarios
- Battery management
- Design and control issues
- Partial power processing architectures
- Integrated powertrain converter and battery charger

**AI AND SOFTWARE SYSTEMS FOR TRANSPORTATION ELECTRIFICATION**
- Energy Storage Systems and RES integration
- DC, AC Distributed architectures
- Smart EV charging scheduling
- Electrification of heavy-duty and off-road vehicles
- On-board energy management
- Vehicle-to-grid (V2G), vehicle-to-building (V2H), vehicle-to-house (V2H)
- Battery chargers
- Grid interface technologies
- Management for charging station facilities
- Microgrid charging stations
- Ultrafast charging stations
- Vehicle-to-grid (V2G), vehicle-to-building (V2H), vehicle-to-house (V2H)
- Battery chargers

Please note that papers selected for special sessions are more likely to be eligible for extension in the IEEE Transactions on Transportation Electrification (TTE) journal. If you have any questions, feel free to contact the Conference Special Session Chair Prof. Fabrizio Mignetti at mignetti@uninas.it.