

Challenge@PoliTo_ *By Firms*

Power energy management for sustainability: Package and connections_ By MISTA

September 2022 – January 2023

The Topic

Sustainability goals and EU decisions have led to major investments in replacing fossil fuels with renewable energies. This is especially true in the e-mobility field, where investment is focusing on research and development.

One of the main topic is the transport of current within the battery pack, in particular the connection between individual cells, battery modules and loads. These connections can be made with busbars that are subjected to increasing electrical, mechanical and thermal stress.

Mista, a group based in Asti and Tunisia, designs, develops and manufactures custom connectors and connections, insert-moulded mechatronic products, thermoplastic components and metal stamped parts. Due to their core competencies, they are interested in this new business opportunity.

The Challenge

The aim of the challenge is to analyse different issues related to the next generation battery pack: safety, sensor integration and the use of recycled materials.

Safety: What are the risks arising from new systems with high voltage and power? How can regulations be improved? How can safety standards be improved? Are there any inconsistencies and requirements not covered by said regulations?

Sensors integration: Analysis of electrical connections for high current flow and integration with monitoring sensors.

Sustainability: Encouraging the use of recycled material for the plastic parts of the battery pack, while making sure safety standards are fully met. The aim here is to understand what performance is required by today's market. What materials are used today, and whether it is possible to replace them with partially or fully recycled materials.

Finally, the **cost** is fundamental for all projects, it has to be in line with market expectations.

The Rules

The Challenges are worth 8 curricular or extra-curricular credits. Check the curriculum of your degree programme to verify if you have the possibility to choose a Challenge in substitution of your free choice credits. Overcoming the Challenge allows the release of the Open Badge.

Check your institutional email, look for 'Challenge@PoliTo' and read the regulation carefully.

SIGN UP NOW! Places are limited!

For any questions, write to clik@polito.it



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