

Body Integrated Super-capacitor for Next Generation of Electric Vehicles

Funding source: Innovation and Technology Fund

Funding amount: \$1.0 Million

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Project Abstract:

The project is to develop the body-integrated super-capacitor (BISC) panels to match vehicular body, such as vehicular roof. Super-capacitor is safer than battery because it utilizes the electrostatic field for the energy storage whereas the battery uses chemical reaction for energy storage. The development includes the technologies of packaging, energy management and voltage equalization.

Technologies and Features of the Product Development:

- Super-capacitor management system (SCMS)
- Monitor, manage, and maintain BISC operation, provide the warning indications to any faults, and protect safe operation of BISC
- Equalizing circuit of super-capacitor cells connected in series
- Active balancing, simple circuit topology, low cost, fast dynamic response and high efficiency
- BISC package to match vehicular body
- Simulation and performance prediction of BISC modules and motor drive systems
- Applicable to electric vehicles or other energy storage systems

