

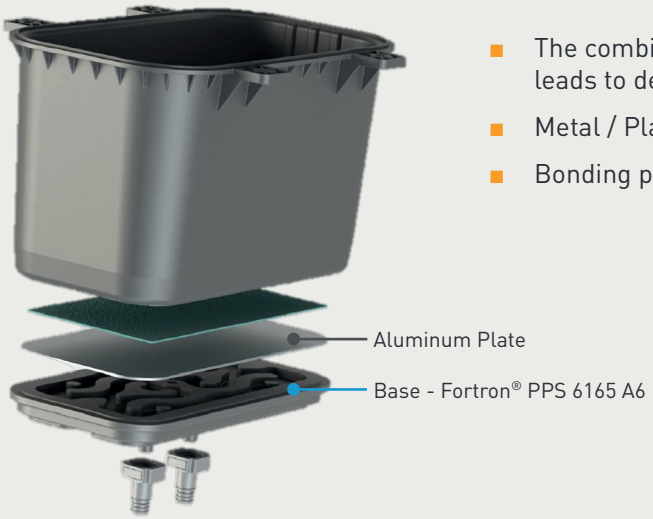
Celanese
The chemistry inside innovation™

CASE STUDY

IMPROVED THERMAL MANAGEMENT WITH BASE PLATE FOR EV BATTERIES

Efficient thermal management of LI-ion batteries packs in electric vehicle can significantly affect performance and life cycle of the batteries. A fundamental challenge in battery thermal management systems (BTMSs) is that hot and cold environments pose opposite requirements: thermal transmission at high temperature for battery cooling, and thermal isolation at low temperature to retain the batteries' internally generated heat, leading to an inevitable compromise of either hot or cold performances. Together with Quarder Celanese could provide an innovative concept for hybrid cooling technology.

CELANESE SOLUTION



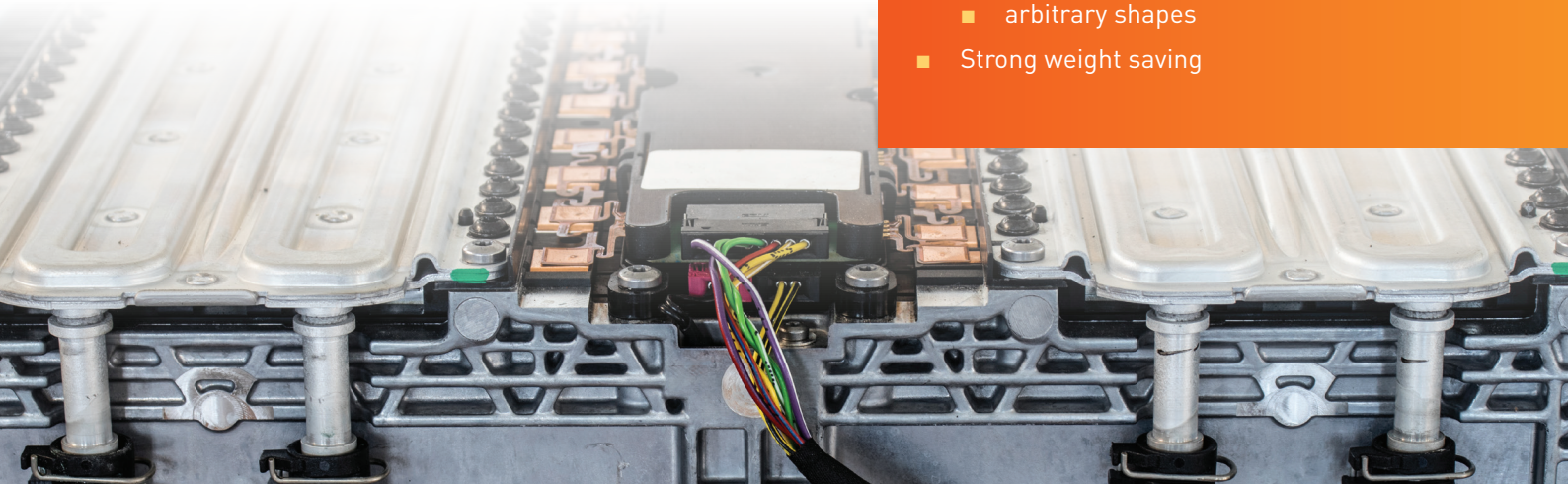
- The combination of aluminum and Fortron® PPS 6165 A6 leads to design-free possibilities of water management
- Metal / Plastic hybrid solution
- Bonding plastics on Aluminium

TARGET APPLICATIONS

- Battery Housing
- Battery Management Systems
- Bus Bars

ADVANTAGES AND BENEFITS

- No sealing element, no soldering no screw connections, no corrosion
- Functional integration
  - many additional elements can be integrated
  - any guidance of the water possible
- Cost-effective integrated mounting options
  - no mounting
  - no danger of leakages
  - arbitrary shapes
- Strong weight saving





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PRODUCT FEATURES

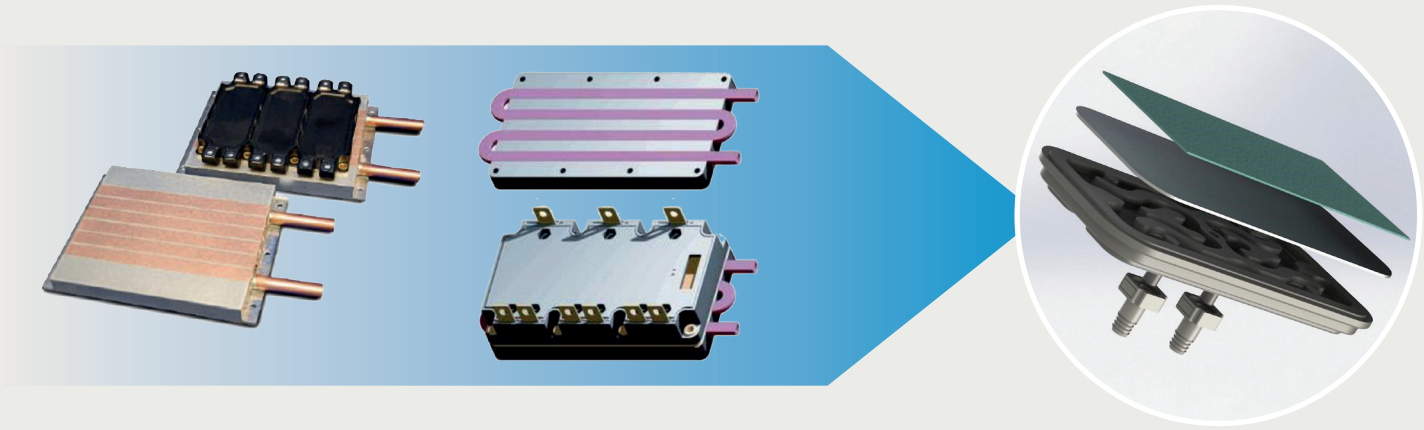
Fortron® PPS

Fortron® PPS also provides added benefits

- Cost-effective functional integration, elimination of costly assembly and sealing processes with a single-shot injection molding process
- Integrated and smart connection technology
- Global availability, chemical resistance, CLTE comparable to aluminum, low water uptake, high flowability and improved adhesion to aluminum

Delivering value for OEM and supplier

- CAE support and analysis for mold flow rheology, structural design and NVH application engineering expertise and testing
- Field technical services-processing support
- Prototyping
- Part & tool design support



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