

What is a battery pack for electrified vehicles with vent gas passageways?

Battery pack for electrified vehicles with vent gas passageways to mitigate thermal events and protect the enclosure while reducing debris discharge. The battery pack has a vent gas passageway within the enclosure that aligns with the cell vents. This passageway has inlet ports at each cell vent location.

Why does a battery module have a vent shield?

Battery module with a vent shield to mitigate damage to sensitive components when gases are vented from the battery cells. The shield is positioned directly along the vent path to absorb and redirect the hot, pressurized gases away from components like electronics and sensors. This prevents the gases from overheating and damaging those components.

How does a cell vent work?

This passageway has inlet ports at each cell vent location. When a cell vent releases gas during a thermal event, it enters the corresponding inlet port and flows through the passageway instead of directly into the enclosure. This prevents gas discharge into the vehicle while mitigating pressure and temperature spikes.

How can EV batteries be safe?

These and other approaches focus on implementing practical safety measures that can be integrated into existing EV battery architectures while meeting space and weight constraints. Battery module with a vent shield to mitigate damage to sensitive components when gases are vented from the battery cells.

How does a battery duct work?

A duct is formed between the battery and one sill to guide the gases out. This prevents them from reaching occupants or other components. A heat-resistant deflection device between the battery and sill can also be added to further protect against hot gases.

What is a tubular battery pack?

Tubular battery pack for electric vehicles and machinery with improved thermal management, safety, and recyclability compared to conventional battery packs. The tubular design uses thin tubes containing insulated lithium-ion cells for cooling and heating.

When the gases from a monobloc battery containing n cells are discharged through a single opening, ...
Subsequently, for a primary exhaust system with high dilution and ...

The battery case is constructed of insulating, acid resistant material. usually plastic or hard rubber . and has a number of compartments or cells. A 12volt battery has 6 - cells. Recesses in the ...

1 ?· In the battery exhaust system, gases and they would pass through "a plurality of treatment zones

for chemically treating the flow of gases to eliminate or at least reduce the number of various chemical species from the flow," ...

Battery Room Ventilation and Exhaust Systems; Stationary Power Systems. Stationary Batteries; Stationary Battery Chargers ... battery cell, sometimes referred to as a ...

1 ¶; In the battery exhaust system, ... They're also tightly sealed, with liquid cooling systems, and monitored at the module or cell level in a way that can isolate a defective portion of the pack.

An exemplary traction battery pack may include a venting system having one or more vent exhaust channels. The vent exhaust channels may be integrated with an enclosure assembly ...

The present invention discloses an exhaust filter system for a battery pack, including an explosion-proof valve and a filter apparatus. One end of the explosion-proof valve is ...

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The main hazards of TR are high temperature [10,11] and venting combustion gas [12,13,14] battery packs, the TR of one cell will induce thermal runaway propagation (TRP) [15,16,17], which seriously threatens the ...

This LiFePO₄ based battery module contains a professional liquid thermal management system and a unique patented cell level propagation protection system. The combination of these safety and performance features make the ...

For example, in other embodiments for which thermal runaway and gas exhaust management system 102 is provided, battery module 100 may be of the type that has stacked battery cells ...

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