CLAIMS

1. Cell module of a commercial lithium-ion battery comprising a battery thermal protection system, consisting of
multifunctional coatings coated on a surface of an aluminum housing of each cell of the cell module, and
a fluid between cells in the module,
wherein the multifunctional coatings are a combination of an inorganic coating and an organic-inorganic hybrid coating, the number of layers of the multifunctional coatings is 1 to10,
characterized in that
the materials for preparing the inorganic coating comprise at least a silicate, a metal oxide, and a dispersant, and
the materials for preparing the organic-inorganic hybrid coating comprise at least an organosilicon resin, silicon dioxide, a silicate, and an organic solvent.

2. Cell module according to claim 1,
characterized in that
the fluid is one of a circulating fluid, an intermittent fluid, and a stationary fluid.

3. Cell module according to claim 1 or 2,
characterized in that
the fluid is selected from one or a combination of water, methanol, ethanol, ethylene glycol, glycerol, silicone oil, a fluorinated liquid, base oil, white oil, solvent oil, lubricating oil, insulating oil, heat conducting oil, and a thermal management fluid.

4. Cell module according to any one of claims 1 to 3,
characterized in that
the fluid has a kinematic viscosity of 2-12 mm^2/s.

5. Cell module according to claim 3 or 4,
characterized in that
the thermal management fluid has a pour point not greater than -50°C.

6. Cell module according to claim 1,
characterized in that
the organosilicon resin, the silicon dioxide, and the silicate are at a mass ratio of (3-4):(5-8):(0.5-1).

7. Cell module according to claim 1,
characterized in that
the mass ratio of the silicate, the metal oxide, and the dispersant is (5-6):(1-2):(2-4).