Claims

1. A battery pack, including a pair of spaced apart end plates, a plurality of cells interposed therebetween, and, a plurality of cell links;

each end plate including:

a first portion, of plate-like configuration having first and second surfaces, including:

an arrangement of cell receiving cutouts formed therein in spaced apart relationship; and,

an arrangement of fluid flow apertures provided intermediate said cell receiving cutouts;

a bus plate, of laminar configuration and formed of conductive material, overlaying said first surface of said first portion, including:

an arrangement of cell connection holes formed therein in spaced apart relationship and in alignment with said cell receiving cutouts of said first portion; and,

an arrangement of fluid flow orifices formed therein and which align with said fluid flow apertures of said first portion;

each cell including a first end and a second end, the first end being operatively engaged in a cell receiving cutout of a first of said end plates, and, a second end being operatively engaged in a cell receiving cutout of a second of said end plates; and,

each cell link conductively connecting an electrode at a respective end portion of each said cell to the bus plate of its respective end plate;

wherein, each cell receiving cutout is shaped such that only a peripheral rim of each cell is engaged within a respective cell receiving cutout of each end plate to thereby retain said cells in said end plates.

2. The battery pack of claim 1, wherein each cell receiving cutout is shaped such that, in use, the ingress of a cell received via the second surface of said first portion is restricted, such that the respective end portion of the battery is spaced apart from the first surface of said first portion.

3. The battery pack of claim 1 or 2, wherein at least a portion of a side wall of the cell receiving cutout includes any one or combination of:

a shoulder;

a lip;
a step; or,
an incline.

4. The battery pack as claimed in any one of claims 1 to 3, wherein said first portion includes a pair of insulated panels positioned back to back, wherein, in a first insulated panel, each cell receiving cutout is dimensioned so that an end portion of a cell can fit therein, and in a second insulated panel, each cell receiving cutout is dimensioned so that the respective end portion of the cell is impeded from fitting therein to abut a peripheral rim of the end of the cell.

5. The battery pack of any one of claims 1 to 4, wherein the cell receiving cutouts are shaped to receive a cell therein, such as, but not limited to circular, square, rectangular or any other shape, in cross-section.

6. The battery pack of any one of claims 1 to 5, wherein each fluid flow orifice and each fluid flow aperture are shaped to align together to form part of a fluid flow channel.

7. The battery pack of any one of claims 1 to 6, wherein said first portion is at least partly formed of non-conductive material, which is preferably also able to resist temperatures over 60°C and has low flammability, such as, but not limited to polycarbonate, polyaramid 6/6 glass-fibre reinforced, PTFE, PEEK, etc.

8. The battery pack of any one of claims 1 to 7, wherein said bus plate is formed of highly conductive material, including any one or combination of metal such as copper, aluminium, nickel, etc., or a non-metallic conductive material, such as, but not limited to graphene or a conductive polymer or ceramic material.

9. A battery assembly, including a plurality of battery packs as claimed in any one of claims 1 to 8, connected in series and/or parallel.

10. A battery assembly as claimed in claim 9, including a link plate connecting the bus plates of adjacently positioned battery packs.

11. A method for forming the battery pack as claimed in any one of claims 1 to 8, including interposing a plurality of battery cells between a pair of end plates.

12. A method for forming the battery pack as claimed in claim 11, further including attaching a cell link to connect each cell to a bus plate of each end plate.

13. A method of forming a battery assembly as claimed in claim 9 or 10, including linking two or more battery packs using a link member.

14. An end plate for the battery pack as claimed in any one of claims 1 to 8.