CLAIMS

1. A fuel cell stack assembly comprising:

a plurality of fuel cells disposed in a stacked configuration, each cell substantially parallel to an x-y plane and including an electrical tab extending laterally from an edge of a plate in the cell in the x-direction to form an array of tabs extending along a side face of the fuel cell stack in a z-direction orthogonal to the x-y plane;

a connector device comprising a planar member having a plurality of spaced-apart slits formed in an edge of the planar member, each slit having an electrically conductive material on an inside face of the slit; and

the slits being spaced along the edge of the planar member and configured to receive the tabs by sliding engagement in the y-direction.

2. The fuel cell stack assembly of claim 1 in which each slit has a curved profile along its length.

3. The fuel cell stack assembly of claim 1 in which the slits of the connector each have a profile in the form of an 'S'-shape along the longitudinal direction.

4. The fuel cell stack assembly of claim 1 in which each slit of the connector has a curved profile along its depth in the x-direction.

5. The fuel cell stack assembly of claim 1 in which at least some tabs have a hook at the distal end of the tab, each hook extending in the y-direction, each hook configured to extend over a closed end of a respective slit of the planar member.

6. The fuel cell stack assembly of claim 1 in which each slit includes at least one guide taper in the planar member at the open end of the slit.

7. The fuel cell stack assembly of claim 1 in which the array of tabs comprises two rows of tabs separated in the y-direction, the second row being offset from the first row in the z-direction so as to facilitate electrical connection to a different set of plates in the stack than the first row.

8. The fuel cell stack assembly of claim 1 in which the planar member is a printed

circuit board with electrically conductive tracks extending across the planar surface to the electrically conductive material on the inside face of each slit.

9. The fuel cell stack assembly of claim 1 in which at least one slit includes a retention member configured to inhibit release of tabs from the connector in the y-direction.

10. A fuel cell stack assembly comprising:

a plurality of fuel cells disposed in a stacked configuration, each cell substantially parallel to an x-y plane and including an electrical tab extending laterally from an edge of a plate in the cell in the x-direction to form an array of tabs extending along a side face of the fuel cell stack in a z-direction orthogonal to the x-y plane, each tab being crimped to create a distortion in the tab out of the x-y plane of the plate to create a curved or angled profile when viewed along the x-direction;

a connector device comprising a planar member having a plurality of spaced-apart slits formed in the body of the planar member, each slit having an electrically conductive material on an inside face of the slit; and

the slits being spaced within the planar member and configured to receive the tabs by sliding engagement in the x-direction so that each tab engages with at least a portion of the electrically conductive material on the inside face of a respective slit.

11. The fuel cell stack assembly of claim 10 in which each tab is crimped to create a curved profile transverse to its length.

12. The fuel cell stack assembly of claim 11 in which the curved profile is a U-shaped profile or a V-shaped profile viewed along the x-axis.

13. The fuel cell stack assembly of claim 10 in which the tabs are each tapered at their distal ends such that the extent of out-of-plane distortion is reduced at the distal ends of the tabs.

14. The fuel cell stack assembly of claim 10 in which the array of tabs comprises two rows of tabs separated in the y-direction, the second row being offset from the first row in the z-direction so as to facilitate electrical connection to a different set of plates in the stack than the first row.

15. The fuel cell stack assembly of claim 10 in which the planar member is a printed circuit board with electrically conductive tracks extending across the planar surface to the electrically conductive material on the inside face of each slit.

16. An electrical connector device for connecting to a plurality of cell voltage monitoring tabs in a fuel cell stack, in which the cell voltage monitoring tabs extend laterally from an edge of the fuel cell stack, the connector device comprising:

a planar member having a plurality of spaced-apart slits formed in an edge of the planar member, each slit having an electrically conductive material on an inside face of the slit;

the slits being spaced along the edge of the planar member and configured to receive the tabs by sliding engagement in the longitudinal direction of the slits; and

each slit has a curved profile along its length.

~~17. A fuel cell stack comprising:~~

~~a plurality of fuel cells disposed in a stacked configuration, each cell substantially parallel to an x-y plane and including an electrical tab extending laterally from an edge of a plate in the cell in the x-direction to form an array of tabs extending along a side face of the fuel cell stack in a z-direction orthogonal to the x-y plane;~~

~~each tab including a hook at the distal end of the tab, each hook extending in the y-direction.~~

~~18~~17. A fuel cell stack comprising:

a plurality of fuel cells disposed in a stacked configuration, each cell substantially parallel to an x-y plane and including an electrical tab extending laterally from an edge of a plate in the cell in the x-direction to form an array of tabs extending along a side face of the fuel cell stack in a z-direction orthogonal to the x-y plane, each tab being crimped to create a distortion in the tab out of the x-y plane of the plate to create a curved or angled profile ~~transverse to its length~~ when viewed along the x-direction.