What is claimed is:

1. An integral solid oxide fuel cell for electrochemically reacting a fuel gas with an oxidant gas at an elevated temperature to produce a DC output voltage, said solid oxide fuel cell comprising:

a layer of ceramic ion conducting electrolyte defining first and second opposing surfaces;

a conductive anode layer in contact with the first surface of said electrolyte layer; and

a conductive cathode layer in contact with the second surface of said electrolyte layer;

wherein said electrolyte layer is disposed between said anode layer and said cathode layer;

wherein said conductive anode layer comprises a cerium-modified doped strontium titanate material;

wherein the cerium-modified doped strontium titanate material comprises an A-site dopant selected from the group consisting of lanthanum, scandium, yttrium and combinations thereof; and

wherein cerium is present in the cerium-modified doped strontium titanate material in an amount of at least about 2 atomic percent.

2. The fuel cell in accordance with claim 1 wherein said cerium is present in the cerium-modified doped strontium titanate material in an amount of at least about 5 atomic percent.

3. The fuel cell in accordance with claim 1 wherein the A-site dopant comprises lanthanum.

4. The fuel cell in accordance with claim 3 wherein the cerium-modified doped strontium titanate material further comprises at least one member selected from the group consisting of nickel, cobalt, copper, chromium and iron.

5. The fuel cell in accordance with claim 1 wherein the cerium-modified doped strontium titanate has thermal expansion characteristics that correspond to thermal expansion characteristics of the electrolyte layer.

6. The fuel cell in accordance with claim 1 wherein the cerium-modified doped strontium titanate has a coefficient of thermal expansion of from about 8×10^{-6} to about 13×10^{-6} K^{-1}.

7. The fuel cell in accordance with claim 1 wherein the cerium-modified doped strontium titanate anode exhibits a polarization resistance of about 0.2 Ωcm^2 at 850° C. and a polarization resistance of about 1.3 Ωcm^2 at 700° C. in wet hydrogen versus Pt/air.

8. The fuel cell in accordance with claim 1 wherein the cerium-modified doped strontium titanate material is in contact with the electrolyte layer.

9. The fuel cell in accordance with claim 1 wherein the cerium-modified doped strontium titanate material comprises a layer having a thickness of at least 3 microns.

10. The fuel cell in accordance with claim 1 wherein the cerium-modified doped strontium titanate material comprises essentially the entire anode layer.

11. The fuel cell in accordance with claim 1 wherein the anode layer comprises a substantially homogenous mixture of a cerium-modified doped strontium titanate material and a finely-divided form of a second material.

12. A solid oxide fuel cell assembly for electrochemically reacting a fuel gas with a flowing oxidant gas at an elevated temperature to produce a DC output voltage, said assembly comprising a plurality of integral fuel cell units, each unit comprising a layer of ceramic ion conducting electrolyte disposed between and in contact with a conductive anode layer and a conductive cathode layer;

wherein the anode layer of at least one of said fuel cells comprises a cerium-modified doped strontium titanate composition in contact with the electrolyte, wherein the cerium-modified doped strontium titanate material comprises an A-site dopant selected from the group consisting of lanthanum, scandium, yttrium and combinations thereof; and wherein cerium is present in the cerium-modified doped strontium titanate material in an amount of at least about 2 atomic percent.

13. The fuel cell assembly in accordance with claim 12, further comprising:

a system for passing a gaseous fuel in contact with said anode layers and passing an oxidizing gas in contact with said cathode layers; and

a system for utilizing electrical energy produced by said fuel cells.

14. A method for making a cerium-modified doped strontium titanate solid oxide fuel cell anode comprising:

providing a cerium-modified strontium titanate material; and

forming the cerium-modified strontium titanate material into an anode for a solid oxide fuel cell;

wherein the cerium-modified strontium titanate material comprises an A-site dopant selected from the group consisting of lanthanum, scandium, yttrium and combinations thereof; and cerium in an amount of

at least about 2 atomic percent; and wherein said forming comprises:

mixing the cerium-modified strontium titanate material with a binder to provide an anode ink;

applying the anode ink to a solid oxide electrolyte component; and

sintering the anode ink.

15. The method in accordance with claim 14, further comprising, prior to said mixing, grinding the cerium-modified strontium titanate material to an average particle size of no greater than about 2 microns to provide a ground product.

16. The method in accordance with claim 14 wherein the cerium-modified strontium titanate material comprises an A-site dopant selected from the group consisting of lanthanum, scandium, yttrium and combinations thereof; and cerium in an amount of at least about 2 atomic percent; and wherein said forming comprises:

forming an anode substrate having a thickness of at least about 50 microns; and

applying a solid oxide layer to the anode substrate.

17. The method in accordance with claim 16, further comprising, prior to said forming, grinding the cerium-modified strontium titanate material to an average particle size of no greater than about 2 microns to provide a ground product.

18. A method for producing electrical energy, comprising:

providing a solid oxide fuel cell, the solid oxide fuel cell including a layer of ceramic ion conducting electrolyte defining first and second opposing surfaces; a conductive anode layer in contact with the first surface of said electrolyte layer; and a conductive cathode layer in contact with the second surface of said electrolyte layer; wherein said electrolyte layer is disposed between said anode layer and said cathode layer; wherein said conductive anode layer comprises a cerium-modified doped strontium titanate material; wherein the cerium-modified doped strontium titanate material comprises an A-site dopant selected from the group consisting of lanthanum, scandium, yttrium and combinations thereof; and wherein cerium is present in the cerium-modified doped strontium titanate material in an amount of at least about 2 atomic percent;

causing air or other oxidizing gas to flow in contact with the cathode layer; and