What is claimed is:

1. A composition comprising zirconium oxide, cerium oxide, and one or more rare earth oxides selected from yttrium oxide, lanthanum oxide, neodynium oxide, and praseodynium oxide, wherein the composition exhibits an Oxygen Storage capacity of about 40 μmol-O_2/g to about 300 μmol-O_2/g after calcining at a temperature of about 900ºC in air for about 5 hours.

2. A composition consisting essentially of zirconium oxide, cerium oxide, and one or more of yttrium oxide, lanthanum oxide, neodymium oxide, and praseodymium oxide, wherein the composition exhibits an Oxygen Storage capacity of about 40 μmol-O_2/g to about 300 μmol-O_2/g after calcining at a temperature of about 900ºC in air for about 5 hours.

3. The composition of claim 1, wherein the composition comprises CeO_2 and ZrO_2 and two or more of La_2O_3, Y_2O_3, Nd_2O_3, and Pr_2O_3.

4. The composition of any one of claims 1-3, wherein the Oxygen Storage capacity of the oxide is about 21 μmol-O_2/g to about 250 μmol-O_2/g after further calcining at a temperature of about 1000ºC in air for about 10 hours.

5. The composition of any one of claims 1-3, wherein the Oxygen Storage capacity is about 10 μmol-O_2/g to about 200 μmol-O_2/g after further calcining at a temperature of about 1100ºC in air for about 10 hours.

6. The composition of any one of claims 1-3, wherein the Oxygen Storage capacity is about 6 μmol-O_2/g to about 150 μmol-O_2/g after further calcining at a temperature of about 1150ºC in air for about 5 hours.

7. The composition of any one of claims 1-6 consisting essentially of CeO_2, La_2O_3, Nd_2O_3, and ZrO_2, wherein the ratio of Ce/Zr/La/Nd is approximately 71.2 2 wt% ZrO_2 to approximately 73.2 wt% ZrO_2, approximately 20.1 wt% CeO_2 to approximately 21.5 wt% CeO_2, approximately 1.2 wt% La_2O_3 to approximately 2.2 wt% La_2O_3, and

approximately 4.8 wt% Nd_2O_3 to approximately 5.8 wt% Nd_2O_3 on an equivalent oxide basis.

8. The composition of any one of claims 1-6 consisting essentially of CeO_2, La_2O_3, Y_2O_3, ZrO_2 wherein the ratio of Zr/Ce/La/Y is approximately 66.5 wt% ZrO_2 to approximately 68.5 wt% ZrO_2, approximately 24 wt% CeO_2 to approximately 26 wt% CeO_2, approximately 3 wt% La_2O_3 to approximately 4 wt% La_2O_3 and approximately 3.5 wt% Y_2O_3 to approximately 4.5 wt% Y_2O_3 on an equivalent oxide basis.

9. The composition of any one of claims 1-6 consisting essentially of CeO_2, La_2O_3, Y_2O_3, Nd_2O_3, ZrO_2 wherein the ratio of Zr/Ce/La/Nd/Y is approximately 49 wt% ZrO_2 to approximately 51 wt% ZrO_2, approximately 39 wt% CeO_2 to approximately 41 wt% CeO_2, approximately 3.5 wt% La_2O_3 to approximately 4.5 wt% La_2O_3, approximately 3.5 wt% Nd_2O_3 to approximately 4.5 wt% Nd_2O_3 and approximately 1.8 wt% Y_2O_3 to approximately 2.2 wt% Y_2O_3 on an equivalent oxide basis.

10. The composition of any one of claims 1-6 consisting essentially of CeO_2, La_2O_3, Pr_2O_3, ZrO_2 wherein the ratio of Zr/Ce/La/Pr is approximately 49 wt% ZrO_2 to approximately 51 wt% ZrO_2, approximately 39 wt% CeO_2 to approximately 41 wt% CeO_2, approximately 4.75 wt% La_2O_3 to approximately 5.25 wt% La_2O_3, and approximately 4.75 wt% Pr_2O_3 to approximately 5.25 wt% Pr_2O_3 on an equivalent oxide basis.

11. A process of producing oxides with high Oxygen Storage capacity comprising:

(a) mixing an aqueous oxalic acid solution with a zirconium salt solution, a cerium salt solution, and a rare earth salt solution selected from the group consisting of yttrium, lanthanum, praseodymium, neodymium, and mixtures thereof to provide a precursor solution;

(b) adding an oxidizing agent to the precursor solution, wherein the oxidizing agent is selected from the group consisting of hypochlorite, sodium chlorate, ammonium perchlorate, ozone, hydrogen peroxide, and mixtures thereof;

(c) adding ammonium hydroxide to form a precipitate and autoclaving the precipitate;

(d) dispersing the precipitate in glycol ethers; and

(e) calcining the precipitate to provide an oxide composition comprising zirconium oxide, cerium oxide, and optionally one or more rare earth oxides other than cerium and having high Oxygen Storage capacity, wherein the oxide composition has an Oxygen Storage capacity of about 40 μmol-O_2/g to about 300 μmol-O_2/g after calcining at a temperature of about 900ºC in air for about 5 hours.

12. The process of claim 11, wherein the glycol ethers have an evaporation rate of about 0.0002 to about 0.005, a boiling point of about 230 ºC to about 300 ºC, a surface tension of about 25 to about 34 dynes/cm, and a water solubility of about 50 wt% to about 100 wt% at about 25 ºC.

13. The process of claim 11 or 12, wherein the glycol ethers are added in an amount of approximately 150 to approximately 500 % by weight with respect to equivalent oxide content.

14. The process of claim 11, wherein the oxidizing agent is added to provide an oxidizing agent to rare earth ion molar ratio of about 7 to about 12.

15. The process of claim 14, wherein the oxidizing agent is added to provide an oxidizing agent to rare earth ion molar ratio of about 10.

16. The process of claim 11, wherein in step (a) an aqueous oxalic acid, zirconyl oxychloride solution, cerium nitrate solution, and a rare earth nitrate solutions selected from the group consisting of yttrium, lanthanum, praseodymium, neodymium, and mixtures thereof are mixed.

17. The process of claim 11, further comprising washing the precipitate with deionized water before dispersing the precipitate in glycol ethers.

18. The process of claim 11, wherein the oxalic acid is mixed in an amount of approximately 50 % to approximately 100 % by weight with respect to equivalent zirconium oxide content.

19. The process of claim 11, wherein the ammonium hydroxide is approximately 5 M to approximately 10 M and the ammonium hydroxide is added in an amount of approximately 700 % to approximately 1250 % by weight with equivalent oxide content.

20. The process of claim 11, wherein the calcining is conducted at a temperature of about 750°C to about 1100°C and for about 3 to 7 hours.

21. The process of claim 20, wherein the calcining is conducted at a temperature of about 900°C for about 5 hours.

22. The process of claim 11 or claim 21, wherein the autoclaving is at a temperature of about 50°C to about 100°C and for about 45 mins to about 2 hours.

23. The process of claim 11, wherein the precursor solution of step (a) has an oxide concentration of approximately 50g/L to about 100g/L.

24. An oxide composition made by the process of any one of claims 11-23, wherein the oxide composition has an Oxygen Storage capacity of about 40 μmol-O_2/g to about 300 μmol-O_2/g after calcining at a temperature of about 900ºC in air for about 5 hours.