CLAIMS

What is claimed is:

1. A concrete composition, comprising:

cementitious material;

carbonaceous material;

reactive silica; and

insoluble silicon.

2. The concrete composition of claim 1, further comprising a pozzolan.

3. The concrete composition of claim 2, wherein the pozzolan has pozzolanic activity.

4. The concrete composition of any one of claims 1 to 3, wherein the carbonaceous material comprises biochar.

5. The concrete composition of claim 4, wherein the biochar comprises at least about 60% organic material by weight.

6. The concrete composition of any one of claims 1 to 5, further comprising a supplementary cementitious material.

7. The concrete composition of any one of claims 1 to 6, further comprising a dispersing agent.

8. A concrete composition comprising:

cementitious material;

reactive silica;

insoluble silica; and

carbonaceous material, wherein at least a portion of the carbonaceous material has no pozzolanic activity.

9. The concrete composition of claim 8, wherein the carbonaceous material comprises biochar.

10. The concrete composition of claim 9, wherein the biochar comprises at least about 40% organic material by weight.

11. The concrete composition of any one of claims 8 to 10, further comprising a supplementary cementitious material.

12. The concrete composition of any one of claims 8 to 11, further comprising a dispersing agent.

13. The concrete composition of any one of claims 8 to 12, further comprising soluble silicon.

14. A method of making a concrete composition, comprising:

milling a carbonaceous material to form a milled carbonaceous material, wherein at least a portion of the milled carbonaceous material has no pozzolanic activity;

combining the milled carbonaceous material with a cementitious material;

contacting the cementitious material with an aggregate, wherein at least a portion of the aggregate comprises reactive silica;

contacting the cementitious material with water; and

subjecting the carbonaceous material to pyrolysis.

15. The method of claim 14, wherein the carbonaceous material comprises a biochar.

16. The method of claim 15, wherein the biochar comprises ash.

17. The method of any one of claims 14 to 16, further comprising contacting the cementitious material with a dispersing agent.

18. The method of any one of claims 14 to 17, wherein the pyrolysis is a slow pyrolysis.

19. The method of any one of claims 14 to 18, wherein the water to cementitious material ratio is about 0.3 to about 0.7.

20. The method of any one of claims 14 to 19, further comprising curing the milled carbonaceous material and cementitious material.