What is claimed is:

1. A method of capturing carbon in a subterranean formation comprising:

installing a sealing element in a wellbore that penetrates the subterranean formation, wherein the sealing element swells in the presence of carbon dioxide, and wherein the sealing element comprises a metal-based material, wherein the metal-based material is a compound comprising a framework and metal nodes that are linked together by organic ligand bridges; and

contacting the sealing element with carbon dioxide.

2. The method according to Claim 1, wherein the sealing element is part of a packer assembly, a downhole tool, or a plug, and wherein the sealing element creates a seal, forms an anchor, or creates a seal and forms an anchor within the wellbore after contacting the sealing element with carbon dioxide.

3. The method according to Claim 1 or 2, wherein the sealing element swells in a range of 20% to 300% in volume.

4. The method according to any one of the preceding claims, wherein the sealing element swells a sufficient volume such that the sealing element creates the seal by engaging with an inner diameter of a tubing string, casing, or wellbore wall after the sealing element is contacted with the carbon dioxide, whereby fluid is prevented or substantially restricted from flowing past the sealing element.

5. The method according to any one of the preceding claims, wherein the sealing element comprises a carbon-swellable polymer.

6. The method according to Claim 5, wherein the carbon-swellable polymer is an elastomer.

7. The method according to Claim 5, wherein the carbon-swellable polymer is selected from rubber, an amine-based polymer, or an aliphatic-based polymer.

8. The method according to Claim 7, wherein the carbon-swellable polymer is selected from

the group consisting of polychloroprene rubber, acrylonitrile butadiene rubber, polyethylenimine, monoethanolamine, diethanolamine, diisopropylamine, tetraethylenepentamine, dodecylamine, 3-aminopropyltriethoxysilane, tris(2-aminoethyl)amine, aziridine, poly(l-lysine), and combinations thereof.

9. The method according to Claim 5, wherein the carbon-swellable polymer is an uncrosslinked polymer.

10. The method according to Claim 5, wherein the sealing element further comprises a non-carbon-swellable polymer, a filler, or combinations thereof.

11. The method according to Claim 1, wherein a metal of the metal-based material is selected from the group consisting of magnesium, iron, calcium, aluminum, tin, zinc, beryllium, barium, manganese, alloys of any of the foregoing, and combinations thereof.

12. The method according to Claim 1, wherein the metal-based material is a metal-organic framework material.

13. The method according to Claim 1, wherein the sealing element further comprises a continuous phase of an elastomeric material and a discreet phase of the metal-based material in the form of particles.

14. The method according to Claim 13, wherein the elastomeric material is a carbon-swellable polymer, a non-carbon-swellable polymer, or combinations thereof.

15. The method according to any one of the preceding claims, wherein the sealing element withstands pressures in the range of 100 to 15,000 pounds force per square inch.

16. The method according to any one of the preceding claims, wherein a subterranean formation fluid comprises the carbon dioxide or an injection fluid comprises the carbon dioxide.

17. A well system comprising:

a wellbore that penetrates a subterranean formation;

a tubing string located within the wellbore; and

a sealing element located adjacent to the tubing string, wherein the sealing element swells in the presence of carbon dioxide, and wherein the sealing element comprises a metal-based material, wherein the metal-based material is a compound comprising a framework and metal nodes that are linked together by organic ligand bridges.

18. The well system according to claim 17, wherein the sealing element further comprises a continuous phase of an elastomeric material and a discreet phase of the metal-based material in the form of particles, and wherein the elastomeric material is a carbon-swellable polymer, a non-carbon-swellable polymer, or combinations thereof.

19. A downhole tool comprising:

a mandrel; and

a sealing element located adjacent to the mandrel, wherein the sealing element swells in the presence of carbon dioxide, and wherein the sealing element comprises a metal-based material, wherein the metal-based material is a compound comprising a framework and metal nodes that are linked together by organic ligand bridges.

20. The downhole tool according to claim 19, wherein the sealing element further comprises a continuous phase of an elastomeric material and a discreet phase of the metal-based material in the form of particles, and wherein the elastomeric material is a carbon-swellable polymer, a non-carbon-swellable polymer, or combinations thereof.