WHAT IS CLAIMED IS:

1. A method of separating waste material which is substantially unsorted municipal solid waste, the method comprising subjecting the waste material to a separation process according to specific gravity, wherein the separation process comprises contacting the waste material with an aqueous liquid selected such that a portion of said waste material sinks and another portion does not sink, so as to obtain at least two fractions, said fractions comprising at least a first fraction which comprises a low-density material and a second fraction which comprises a high-density material, thereby separating the waste material to a plurality of separated materials, wherein said aqueous liquid comprises an aqueous salt solution.

2. The method of claim 1, wherein said plurality of separated materials comprises at least two materials selected from a low-density polymeric material, a high-density polymeric material, a metal, a glass, an oil, and lignocellulose.

3. The method of any one of claims 1 and 2, further comprising processing at least one of said separated materials to thereby obtain at least one processed material selected from a processed polymeric material, a compost, a biogas, ethanol, a biodiesel fuel and a concrete.

4. The method of any one of claims 1 to 3, wherein a specific gravity of said aqueous liquid is at least 1.05.

5. The method of any one of claims 1 to 4, wherein said separation process comprises contacting the waste material with a first aqueous liquid selected such that a portion of said waste material sinks, thereby obtaining said second fraction comprising said high-density material and said first fraction comprising said low-density material, and further contacting at least one of said first fraction and said second fraction with a second aqueous liquid selected such that a portion of said fraction sinks, thereby obtaining a third fraction comprising a low-density material which does not sink in either of said aqueous liquids, a fourth fraction comprising an intermediate-density

material which sinks in one of said aqueous liquids, and a fifth fraction comprising a high-density material which sinks in both of said aqueous liquids.

6. The method of claim 5, wherein a specific gravity of one of said first aqueous liquid and said second aqueous liquid is at least 1.05, and a specific gravity of the other of said first aqueous liquid and said second aqueous liquid is no more than 1.01.

7. The method of any one of claims 5 to 6, wherein said intermediate-density material comprises a separated lignocellulose.

8. The method of any one of claims 5 to 7, wherein said low-density material in said third fraction comprises a separated low-density polymeric material.

9. The method of claim 8, wherein said low-density polymeric material comprises at least 50 weight percents polyolefins by dry weight.

10. The method of any one of claims 1 to 4, further comprising subjecting at least a portion of said first fraction which comprises a low-density material to a fermentation process.

11. The method of any one of claims 5 to 9, further comprising subjecting at least a portion of said fourth fraction which comprises an intermediate-density material to a fermentation process.

12. The method of any one of claims 10 and 11, wherein said fermentation process produces a biogas and/or ethanol.

13. The method of any one of claims 10 to 12, further comprising processing at least a portion of an organic residue remaining after said fermentation process to thereby obtain a compost.

14. The method of any one of claims 1 to 13, further comprising separating oil from said fraction which comprises a low-density material, to thereby obtain a separated oil.

15. The method of claim 14, wherein separating said oil comprises skimming said oil off of a surface of an aqueous liquid contacted with the waste material.

16. The method of any one of claims 2, 14 and 15, further comprising processing said oil to thereby obtain a biodiesel fuel.

17. The method of any one of claims 1 to 16, wherein said high-density material comprises at least one of a metal and a high-density non-metallic material, the method further comprising separating said high-density material to thereby obtain a separated metal and/or a separated high-density non-metallic material.

18. The method of claim 17, wherein said high-density non-metallic material comprises at least one of a glass and a high-density polymeric material, the method further comprising separating said high-density non-metallic material, to thereby obtain a separated glass and/or a separated high-density polymeric material.

19. The method of any one of claims 17 to 18, further comprising contacting an aggregate comprising said high-density non-metallic material with a binder to thereby form a concrete.

20. The method of any one of claims 3 and 17 to 19, wherein said concrete is a polymer concrete.

21. The method of any one of claims 1 to 20, further comprising processing a low-density material separated from the waste material to thereby obtain a processed polymeric material.

22. The method of claim 21, wherein said processing comprises heating a feedstock comprising said low density material.

23. The method of any one of claims 21 to 22, wherein said low-density material is processed together with an organic residue remaining after a fermentation process.

24. The method of any one of claims 1 to 23, further comprising shredding at least a portion of said first fraction subsequent to said contacting the waste material with said aqueous liquid.

25. A system for separating a waste material, the system comprising:

a first separator containing a first aqueous liquid and a second separator containing a second aqueous liquid, each of said first separator and said second separator being configured for separating materials in the waste material according to specific gravity so as to obtain at least two fractions,

said first aqueous liquid being selected such that a portion of said waste material sinks and another portion does not sink, thereby obtaining a first fraction which comprises a low density material and a second fraction which comprises a high density material,

said first separator and said second separator being in communication, and said second separator being configured for receiving at least one fraction from said first separator, for separating said fraction received from said first separator according to specific gravity, and for obtaining a separated lignocellulose, said second aqueous liquid being selected such that a portion of said fraction received from said first separator sinks, thereby obtaining a third fraction comprising a low-density material which does not sink in either of said aqueous liquids, a fourth fraction comprising an intermediate-density material which sinks in one of said aqueous liquids, said intermediate-density material comprising said lignocellulose, and a fifth fraction comprising a high-density material which sinks in both of said aqueous liquids,

wherein at least one of said first aqueous liquid and said second aqueous liquid comprises an aqueous salt solution.

26. The system of claim 25, further comprising at least one apparatus configured for obtaining at least two materials selected from a low-density polymeric material, a high-density polymeric material, a metal, a glass, an oil, and lignocellulose.

27. The system of any one of claims 25 and 26, further comprising at least one apparatus configured for processing at least a portion of said first fraction or said second fraction to thereby obtain at least one processed material selected from a processed polymeric material, a compost, a biogas, ethanol, a biodiesel fuel and a concrete.

28. The system of any one of claims 25 to 27, wherein a specific gravity of said first aqueous liquid or said second aqueous liquid which comprises the aqueous salt solution is at least 1.05.

29. The system of claim 28, wherein a specific gravity of one of said first aqueous liquid and said second aqueous liquid is at least 1.05, and a specific gravity of the other of said first aqueous liquid and said second aqueous liquid is no more than 1.01.

30. The system of any one of claims 25 to 29, wherein said second separator is configured for obtaining a separated low-density polymeric material, said low-density material in said third fraction comprising said low-density polymeric material.

31. A system for separating a waste material, the system comprising:

at least one separator configured for separating materials in the waste material according to specific gravity so as to obtain at least two fractions, said fractions comprising at least a first fraction which comprises a low density material and at least a second fraction which comprises a high-density material, said separator containing an aqueous liquid selected such that a portion of said waste material sinks and another portion does not sink, thereby obtaining said first fraction and said second fraction, wherein said aqueous liquid comprises an aqueous salt solution, and

a bioreactor in communication with at least one of said at least one separator, said bioreactor being configured for subjecting at least a portion of said first fraction which comprises a low-density material to a fermentation process.

32. The system of claim 31, wherein said at least one separator comprises a first separator containing a first aqueous liquid and a second separator containing a second aqueous liquid, said first separator and said second separator being in communication, and said second separator being configured for receiving at least one fraction from said first separator, and for separating said fraction received from said first separator according to specific gravity, said second aqueous liquid being selected such that a portion of said fraction received from said first separator sinks, thereby obtaining a third fraction comprising a low-density material which does not sink in either of said aqueous liquids, a fourth fraction comprising an intermediate-density material which sinks in one of said aqueous liquids, and a fifth fraction comprising a high-density material which sinks in both of said aqueous liquids,

wherein said bioreactor is in communication with said second separator, said bioreactor being configured for subjecting at least a portion of said fourth fraction which comprises an intermediate-density material to a fermentation process.

33. The system of any one of claims 31 and 32, wherein said bioreactor is configured for obtaining a biogas and/or ethanol.

34. The system of any one of claims 31 and 32, comprising an apparatus configured for collecting an organic residue in said bioreactor and processing collected organic residue to thereby obtain a compost.

35. A system for separating a waste material, the system comprising:

at least one separator configured for separating materials in the waste material according to specific gravity so as to obtain at least two fractions, said fractions comprising at least a first fraction which comprises a low density material and at least a second fraction which comprises a high-density material, said separator containing an aqueous liquid selected such that a portion of said waste material sinks and another

portion does not sink, thereby obtaining said first fraction and said second fraction, wherein said aqueous liquid comprises an aqueous salt solution, and

an oil-water separator configured for separating oil from said fraction which comprises a low-density material, to thereby obtain a separated oil.

36. The system of any one of claims 26 and 35, further comprising a subsystem configured for processing said oils to thereby obtain a biodiesel fuel.

37. The system of any one of claims 25 to 36, comprising an apparatus in communication with said separator, said apparatus being configured for receiving said high-density material from said separator, wherein said high-density material comprises at least one of a metal and a high-density non-metallic material, and for separating said high-density material, to thereby obtain a separated metal and/or a separated high-density non-metallic material.

38. A system for separating a waste material which is substantially unsorted municipal solid waste, the system comprising:

at least one separator configured for separating materials in the waste material according to specific gravity so as to obtain at least two fractions, said fractions comprising at least a first fraction which comprises a low density material and at least a second fraction which comprises a high-density material, said separator containing an aqueous liquid selected such that a portion of said waste material sinks and another portion does not sink, thereby obtaining said first fraction and said second fraction, wherein said aqueous liquid comprises an aqueous salt solution,

an apparatus in communication with said separator, said apparatus being configured for receiving said high-density material from said separator, wherein said high-density material comprises at least one of a metal and a high-density non-metallic material, and for separating said high-density material, to thereby obtain a separated metal and/or a separated high-density non-metallic material, and

a subsystem configured for grinding at least a portion of said high-density non-metallic material into an aggregate and preparing a concrete from said aggregate.

39. The system of claim 32, further comprising an apparatus configured for preparing a feedstock which comprises at least a portion of said low-density material in said third fraction and at least a portion of an organic residue in said bioreactor.

40. The system of any one of claims 25 to 39, comprising an apparatus configured for processing a low-density material separated from the waste material, to thereby obtaining a processed polymeric material.

41. A system for separating a waste material which is substantially unsorted municipal solid waste, the system comprising:

at least one separator configured for separating materials in the waste material according to specific gravity so as to obtain at least two fractions, said fractions comprising at least a first fraction which comprises a low density material and at least a second fraction which comprises a high-density material, said separator containing an aqueous liquid selected such that a portion of said waste material sinks and another portion does not sink, thereby obtaining said first fraction and said second fraction, wherein said aqueous liquid comprises an aqueous salt solution, and

an apparatus configured for processing a low-density material separated from the waste material, to thereby obtaining a processed polymeric material, wherein said processing comprises heating a feedstock comprising said low-density material.

42. The system of any one of claims 25 to 41, further comprising a shredder configured for shredding at least a portion of said first fraction subsequent to contacting the waste material with said aqueous liquid.