CLAIMS:

1. A process for isolating humins from a feed source, comprising:

providing a feed source to a thin-film evaporator, wherein the feed source comprises:

65-90 wt.% of a multicomponent solvent comprising water and a water-miscible aprotic organic solvent; and

10-35 wt. % of a dissolved dry residue comprising, in wt.% or ppm of the total feed source:

a sugar content of 30,000-120,000 ppm;

a furan containing compound content of 2-5 wt.%;

a humin compound content of 24,000-100,000 ppm;

an organic acid content of 0.2-0.7 wt%;

a homogenous acid;

a salt; and

a metal;

wherein the feed source has a pH of between 1-4 pH; and

processing the feed source within the thin-film evaporator to provide an isolated solid material comprising:

a moisture content of 0.3-2 wt.%;

a furan containing compound content of 0.9-5 wt.%;

a sugar content of 0.1-2 wt.%;

a dioxane content of 0.02-1 wt.%; and

an ash content of 0.1-6 wt.%.

2. The process of Claim 1, further comprising washing and drying the isolated solid material to produce a washed and dried solid material.

3. The process of Claim 2, further comprising exposing the washed and dried solid material to a high temperature carbonization process to produce a carbonized solid material.

4. The process of anyone of Claims 1-3, wherein the thin-film evaporator is a horizontal thin film evaporator.

5. The process of any one of claims 1-3, wherein the thin-film evaporator is orientated at an angle between 0° to 90°, wherein 0° corresponds to the heated thin film

evaporator being oriented straight down, toward the Earth's center of mass and 180° corresponds to the heated thin film evaporator being oriented straight up, away from the Earth's center of mass.

6. The process of any one of claims 1-3, wherein the organic acid is selected from the group consisting of levulinic acid, formic acid, acetic acid, and combinations thereof.

7. The process of any one of claims 1-3, wherein the homogenous acid is selected from the group consisting of HCl, HBr, HI, H_2SO_4, H_3PO_4, oxalic acid, triflic acid, methane sulfonic acid, boron trihalides, and combinations thereof.

8. The process of any one of claims 1-3, wherein the salt is selected from the group consisting of sodium bromide, calcium bromide, sodium chloride, calcium chloride, potassium chloride, magnesium chloride, and combinations thereof.

9. A process for recovering solvent from a feed source, comprising:

providing a feed source to a thin-film evaporator, wherein the feed source comprises:

65-90 wt.% of a multicomponent solvent comprising water and a water-miscible aprotic organic solvent; and

10-35 wt. % of a dissolved dry residue comprising, in wt.% or ppm of the total feed source:

a sugar content of 30,000-120,000 ppm;

a furan containing compound content of 2-5 wt.%;

a humin compound content of 24,000-100,000 ppm;

an organic acid content of 0.2-0.7 wt%;

a homogenous acid;

a salt; and

a metal;

wherein the feed source has a pH of between 1-4 pH; and

processing the feed source within the thin-film evaporator to provide a recovered solvent material comprising:

a sugar content of at most 500 ppm;

a furan content of at most 1.6 wt.%;

a humin compound content of 300-700 ppm; and

an organic acid content of at most 2 wt.%.

10. The process of Claim 9, further comprising providing the recovered solvent material to a condenser.

11. The process of Claim 9, further comprising providing the recovered solvent material to a continuous distillation column.

12. The process of Claim 9, wherein the recovered solvent is further purified or isolated by fractional distillation.

13. The process of any one of Claims 9-12, wherein the thin-film evaporator is a horizontal thin film evaporator.

14. The process of any one of claims 9-12, wherein the thin-film evaporator is orientated at an angle between 0° to 90° , wherein 0° corresponds to the heated thin film evaporator being oriented straight down, toward the Earth's center of mass and 180° corresponds to the heated thin film evaporator being oriented straight up, away from the Earth's center of mass.

15. A composition of a solid material isolated from a feed source, comprising:

a moisture content of less than 2 wt.%;

a furan content of at least 0.9 wt.%;

a sugar content of at least 0.1 wt.%;

a moisture content of at most 2 wt.%;

a dioxane content of at most 1 wt.%;

an ash content of at most 6 wt.%.

16. The composition of Claim 15, wherein the ash content is at most 1 wt.%.

17. The composition of Claim 15, wherein the ash content is at most 0.5 wt.%.

18. The composition of Claim 15, wherein the ash content is at most 0.1 wt.%.

19. A process for isolating humins from a feed source, comprising:

providing a feed source to a thin-film evaporator, wherein the feed source comprises:

a multicomponent solvent comprising water and a water-miscible aprotic organic solvent; and

a dissolved dry residue comprising a humin compound content;

wherein the feed source has a pH of between 1-4 pH; and

processing the feed source within the thin-film evaporator to provide an isolated solid material comprising:

a moisture content of 0.3-2 wt.%;

a furan containing compound content of 0.9-5 wt.%;

a sugar content of 0.1-2 wt.%;

a dioxane content of 0.02-1 wt.%; and

an ash content of 0.1-6 wt.%.

20. A process for recovering solvent from a feed source, comprising:

providing a feed source to a thin-film evaporator, wherein the feed source comprises:

a multicomponent solvent comprising water and a water-miscible aprotic organic solvent; and

a dissolved dry residue comprising a humin compound content;

wherein the feed source has a pH of between 1-4 pH; and

processing the feed source within the thin-film evaporator to provide a recovered solvent material comprising:

a sugar content of at most 500 ppm;

a furan content of at most 1.6 wt.%;

a humin compound content of 300-700 ppm; and

an organic acid content of at most 2 wt.%.