thermoplastic waste and a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire fibers to obtain a melt;

- processing the melt, the processing comprises at least cooling the melt to obtain a composite material comprising:

- organic element;

- thermoplastic element; and

- at least one element selected from the group consisting of vulcanized rubber and tire fibers.

Within the same aspect there is also provided a process comprising:

- subjecting at least organic waste and thermoplastic waste to at least one processing step selected from the group consisting of drying, particulating, mixing and heating under shear forces, to obtain a first component;

- mixing while heating under shear forces the first component with a second component comprising an element selected from the group consisting of vulcanized rubber and tire cords, to obtain a melt; and

- processing the melt, where the processing comprises at least cooling to obtain a composite material comprising:

- organic element;

- thermoplastic element; and

- at least one additional element selected from the group consisting of vulcanized rubber and tire cords.

Yet, within this aspect of the invention, there is provided a process comprising:

- mixing while heating under shear forces a first component comprising processed waste with a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords to obtain a melt; and

- processing the melt, wherein the processing comprises at least cooling to obtain a composite material comprising:

- organic element;

- thermoplastic element; and

- at least one element selected from the group consisting of vulcanized rubber and tire cords

In one embodiment, the first component is processed unsorted waste. The processed unsorted waste may be obtained by mixing and heating dried and particulated SUW, under shear forces and finally extruded as explained in detail in co-pending PCT/IL2010/000027, ~~which is hereby incorporated by reference.~~ In one embodiment, the processing of the SUW comprises at least one of

CLAIMS:

1. A composite material comprising a blend of a first component and a second component, the first component comprising an organic element comprising organic fibers and a thermoplastic element and the second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords

wherein the amount of the second component is at least 50% w/w out of the composite material,

wherein the composite material is in the form of an extrudate; and

wherein the density of the composite material as an extrudate is above 1.2g/cm^3.

2. The composite material of claim 1, wherein the amount of the first component is between ~~about~~ 10% ~~weight to weight~~ (w/w) to ~~about~~ 50% w/w of the total weight of the composite material.

3. The composite material of claim 1, wherein the amount of thermoplastic element in the composite material is between 1% w/w to ~~about~~ 30% w/w of the composite material and the amount of organic element is between ~~about~~ 10% w/w to ~~about~~ 49% w/w of the composite material.

4. The composite material of claim 1, wherein the amount of the second component is between 50 % w/w to about 90 % w/w of the composite material.

5. The composite material of claim 1, wherein the amount of the second component is not more than about 90 % w/w of the composite material, the amount of the vulcanized rubber in the composite material is not more than ~~about~~ 80% w/w of the composite material and the amount of the tire cords is not more than ~~about~~ 30% w/w of the composite material.

6. The composite material of claim 5, wherein the amount of the vulcanized rubber is between ~~about~~ 20% w/w to ~~about~~ 89% w/w in the composite material, and the amount of the tire cords is between ~~about~~ 1% w/w to ~~about~~ 30% w/w.

7. The composite material of claim 1, wherein the second component consists of vulcanized rubber.

8. The composite material of claim 1, wherein the second component consists of tire cords.

9. The composite material of claim 1, wherein the vulcanized rubber consists of tire rubber.

10. The composite material of claim 9, wherein the tire rubber is selected from the group consisting of tire slit, chipped tires, ground rubber, rubber powder and crumb rubber.

11. The composition material of claim 1, wherein the tire cords are fibers selected from the group consisting of polyester, polyamide, polyvinyl alcohol and rayon.

12. The composite material of claim 1, comprising plastics selected from the group consisting of polyethylene, polyvinylchloride, polystyrene (PS and high impact PS, HIPS), acrylonitrilebutadienestyrene (ABS) and polypropylene.

13. The composite material of claim 1, comprising polyvinylchloride.

14. The composite material of claim 1, being injectable.

15. The composite material of claim 1, having thermoplastic properties.

16. The composite material of any one of claim 1, comprising at least one additive selected from the group consisting of an absorbent, a plasticizer, a binder, carbon black, a UV blocker, a metal, a weight additive, sand, silica and a pigment.

17. The composite material of claim 1, wherein the organic element and thermoplastic element originate from substantially unsorted waste (SUW).

18. The composite material of claim 1, comprising at least one inorganic material selected from the group consisting of metal, sand and clay.

19. The composite material of claim 1, having at least one of the following properties:

Charpy impact of at least 7 KJ/m2,

maximum tensile strength of at least 1.3 MPa,

modulus of elasticity of at least 80 MPa ,

elongation at brake of at least 2 %,

flexural strength of at least 2 MPa, and

flexural modulus of at least 300 MPa.

20. A process comprising:

- mixing while heating under shear forces a first component comprising organic waste comprising organic fibers and thermoplastic waste with a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords; the amount of the second component is at least 50 % w/w out of the composite material, to obtain a melt;

- processing the melt, the processing comprises at least extruding the melt; and

- cooling the extruded melt to obtain a composite material.~~comprising:~~

~~- organic element;~~

~~- thermoplastic element; and~~

~~- at least one element selected from the group consisting of vulcanized rubber and tire~~

~~cords.~~

21. A process comprising:

- subjecting at least organic waste comprising organic fibers and thermoplastic waste to at least one processing step selected from the group consisting of drying, particulating, mixing and heating under shear forces, to obtain a first component;
- mixing while heating under shear forces the first component with a second component comprising an element selected from the group consisting of vulcanized rubber and tire cords, to obtain a melt; and
- processing the melt, where the processing comprises at least cooling to obtain a composite material in the form of an extrudate, wherein the amount of the second component is at least 50 % w/w out of the composite material. ~~comprising:~~

~~- organic element;~~

~~- thermoplastic element; and~~

~~- at least one element selected from the group consisting of vulcanized rubber and tire cords.~~

22. A process comprising:

- mixing while heating under shear forces a first component comprising processed waste with a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords to obtain a melt; and
- processing the melt, wherein the processing comprises at least cooling to obtain a composite material in the form of an extrudate comprising:
- organic element comprising organic fibers;
- thermoplastic element, ~~; and~~

~~- at least one element selected from the group consisting of vulcanized rubber and tire cords.~~

wherein the amount of the second component is at least 50 % w/w out of the composite material.

23. The process of claim 22, wherein the first component is in particulate form.

24. The process of claim 22, wherein the first component and the second component are mixed before mixing while heating under shear forces.

25. The process of claim 24, wherein the first component is in an amount between ~~about~~ 10% out of the total weight of the combined amount of the first component and second component (w/w) to ~~about~~ 50% w/w and the second component is in an amount of

between about 50 % w/w to about 90 % w/w of the combined amount of the first component and the second component.

26. The process of claim 25, wherein the amount of thermoplastic waste is between 1% w/w to ~~about~~ 30% w/w of the combined amount of the first component and the second component and the amount of organic waste is between ~~about~~ 10% w/w to ~~about~~ 49% of the combined amount of the first component and second component.

27. The process of claim 25, wherein the first component is obtained from substantially unsorted waste after being subjected to at least one of processing step selected from drying, particulating, and mixing while heating under shear forces.

28. The process of claim 27, wherein the amount of the second component is not more than about 90 % w/w of the composite material, the amount of vulcanized rubber is between ~~about~~ 20% to ~~about~~ 80% w/w of the combined first component and second component and the amount of the tire cords is between null and ~~about~~ 30% w/w of the combined first component and second component.

29. The process of claim 22, wherein the tire rubber is selected from the group consisting of tire slit, chipped tires, ground rubber and crumb rubber and the tire cords are selected from the group consisting of at least one of polyester, polyamide, polyvinyl alcohol and rayon.

30. The process of claim 22, wherein heating under shear forces is at a machine setting temperature in the range of between ~~about~~ 100°C to ~~about~~ 200°C.

31. The process of claim 30, comprising adding prior to, or during, the mixing while heating under shear forces at least one plastic selected from the group consisting of polyethylene, polyvinylchloride, polystyrene and polypropylene, the amount of plastic added being such to obtain in the melt an amount of thermoplastic material in a range of between 1% and 49%.

32. The process of claim 31, wherein the mixing while heating under shear forces is performed in a compounder selected from the group consisting of an extruder, an internal mixer, a two rolls mill, a co-kneader and a continuous mixer.

33. The process of claim 32, wherein the first component is in particulate form, the particulate having a size of between ~~about~~ 0.01 mm and ~~about~~ 2.5 in diameter.

34. The process of claim 33, comprising adding prior to, or during the mixing while heating at least one additive selected from the group consisting of absorbent, a binder, a plasticizer.

35. The process of claim 34, wherein the mixing while heating under shear forces at an applied pressure as dictated by the conditions and parameters detailed herein.

36. The process of claim 35 wherein the first component is substantially unsorted domestic waste.

37. The process of claim 36, comprising re-processing the composite material, the re-processing comprises heating the composite material to a temperature of between 100°C to 200°C and at least one process step selected from the group consisting of extruding, compression molding, injection molding whereby an article of manufacture is obtained.

38. A process comprising providing a composite material according to any one of Claims 1 to 19, and processing the composite material, the processing comprises heating the composite material a temperature of between 100°C to 200°C and at least one of process step selected from the group consisting of extruding, compression molding, injection molding whereby an article of manufacture is obtained.

39. The process of claim 38, comprising adding prior to or during the heating at least one reinforcing element selected from the group consisting of bitumen, coarse aggregate and sand.

thermoplastic waste and a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire fibers to obtain a melt;

- processing the melt, the processing comprises at least cooling the melt to obtain a composite material comprising:

- organic element;

- thermoplastic element; and

- at least one element selected from the group consisting of vulcanized rubber and tire fibers.

Within the same aspect there is also provided a process comprising:

- subjecting at least organic waste and thermoplastic waste to at least one processing step selected from the group consisting of drying, particulating, mixing and heating under shear forces, to obtain a first component;

- mixing while heating under shear forces the first component with a second component comprising an element selected from the group consisting of vulcanized rubber and tire cords, to obtain a melt; and

- processing the melt, where the processing comprises at least cooling to obtain a composite material comprising:

- organic element;

- thermoplastic element; and

- at least one additional element selected from the group consisting of vulcanized rubber and tire cords.

Yet, within this aspect of the invention, there is provided a process comprising:

- mixing while heating under shear forces a first component comprising processed waste with a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords to obtain a melt; and

- processing the melt, wherein the processing comprises at least cooling to obtain a composite material comprising:

- organic element;

- thermoplastic element; and

- at least one element selected from the group consisting of vulcanized rubber and tire cords

In one embodiment, the first component is processed unsorted waste. The processed unsorted waste may be obtained by mixing and heating dried and particulated SUW, under shear forces and finally extruded as explained in detail in co-pending PCT/IL2010/000027.

In one embodiment, the processing of the SUW comprises at least one of

CLAIMS:

1. A composite material comprising a blend of a first component and a second component, the first component comprising an organic element comprising organic fibers and a thermoplastic element and the second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords

wherein the amount of the second component is at least 50% w/w out of the composite material,

wherein the composite material is in the form of an extrudate; and

wherein the density of the composite material as an extrudate is above 1.2g/cm^3.

2. The composite material of claim 1, wherein the amount of the first component is between 10% w/w to 50% w/w of the total weight of the composite material.

3. The composite material of claim 1, wherein the amount of thermoplastic element in the composite material is between 1% w/w to 30% w/w of the composite material and the amount of organic element is between 10% w/w to 49% w/w of the composite material.

4. The composite material of claim 1, wherein the amount of the second component is between 50 % w/w to about 90 % w/w of the composite material.

5. The composite material of claim 1, wherein the amount of the second component is not more than about 90 % w/w of the composite material, the amount of the vulcanized rubber in the composite material is not more than 80% w/w of the composite material and the amount of the tire cords is not more than 30% w/w of the composite material.

6. The composite material of claim 5, wherein the amount of the vulcanized rubber is between 20% w/w to 89% w/w in the composite material, and the amount of the tire cords is between 1% w/w to 30% w/w.

7. The composite material of claim 1, wherein the second component consists of vulcanized rubber.

8. The composite material of claim 1, wherein the second component consists of tire cords.

9. The composite material of claim 1, wherein the vulcanized rubber consists of tire rubber.

10. The composite material of claim 9, wherein the tire rubber is selected from the group consisting of tire slit, chipped tires, ground rubber, rubber powder and crumb rubber.

11. The composition material of claim 1, wherein the tire cords are fibers selected from the group consisting of polyester, polyamide, polyvinyl alcohol and rayon.

12. The composite material of claim 1, comprising plastics selected from the group consisting of polyethylene, polyvinylchloride, polystyrene (PS and high impact PS, HIPS), acrylonitrilebutadienestyrene (ABS) and polypropylene.

13. The composite material of claim 1, comprising polyvinylchloride.

14. The composite material of claim 1, being injectable.

15. The composite material of claim 1, having thermoplastic properties.

16. The composite material of any one of claim 1, comprising at least one additive selected from the group consisting of an absorbent, a plasticizer, a binder, carbon black, a UV blocker, a metal, a weight additive, sand, silica and a pigment.

17. The composite material of claim 1, wherein the organic element and thermoplastic element originate from substantially unsorted waste (SUW).

18. The composite material of claim 1, comprising at least one inorganic material selected from the group consisting of metal, sand and clay.

19. The composite material of claim 1, having at least one of the following properties:

Charpy impact of at least 7 KJ/m2,

maximum tensile strength of at least 1.3 MPa,

modulus of elasticity of at least 80 MPa ,

elongation at brake of at least 2 %,

flexural strength of at least 2 MPa, and

flexural modulus of at least 300 MPa.

20. A process comprising:

- mixing while heating under shear forces a first component comprising organic waste comprising organic fibers and thermoplastic waste with a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords; the amount of the second component is at least 50 % w/w out of the composite material, to obtain a melt;

- processing the melt, the processing comprises at least extruding the melt; and

- cooling the extruded melt to obtain a composite material.

21. A process comprising:

- subjecting at least organic waste comprising organic fibers and thermoplastic waste to at least one processing step selected from the group consisting of drying, particulating, mixing and heating under shear forces, to obtain a first component;

- mixing while heating under shear forces the first component with a second component

comprising an element selected from the group consisting of vulcanized rubber and tire cords, to obtain a melt; and

- processing the melt, where the processing comprises at least cooling to obtain a composite material in the form of an extrudate, wherein the amount of the second component is at least 50 % w/w out of the composite material.

22. A process comprising:

- mixing while heating under shear forces a first component comprising processed waste with a second component comprising at least one element selected from the group consisting of vulcanized rubber and tire cords to obtain a melt; and

- processing the melt, wherein the processing comprises at least cooling to obtain a composite material in the form of an extrudate comprising:

- organic element comprising organic fibers;

- thermoplastic element,

wherein the amount of the second component is at least 50 % w/w out of the composite material.

23. The process of claim 22, wherein the first component is in particulate form.

24. The process of claim 22, wherein the first component and the second component are mixed before mixing while heating under shear forces.

25. The process of claim 24, wherein the first component is in an amount between 10% out of the total weight of the combined amount of the first component and second component (w/w) to 50% w/w and the second component is in an amount of between about 50 % w/w to about 90 % w/w of the combined amount of the first component and the second component.

26. The process of claim 25, wherein the amount of thermoplastic waste is between 1% w/w to 30% w/w of the combined amount of the first component and the second component and the amount of organic waste is between 10% w/w to 49% of the combined amount of the first component and second component.

27. The process of claim 25, wherein the first component is obtained from substantially unsorted waste after being subjected to at least one of processing step selected from drying, particulating, and mixing while heating under shear forces.

28. The process of claim 27, wherein the amount of the second component is not more than about 90 % w/w of the composite material, the amount of vulcanized rubber is between 20% to 80% w/w of the combined first component and second component and the

amount of the tire cords is between null and 30% w/w of the combined first component and second component.

29. The process of claim 22, wherein the tire rubber is selected from the group consisting of tire slit, chipped tires, ground rubber and crumb rubber and the tire cords are selected from the group consisting of at least one of polyester, polyamide, polyvinyl alcohol and rayon.

30. The process of claim 22, wherein heating under shear forces is at a machine setting temperature in the range of between 100°C to 200°C.

31. The process of claim 30, comprising adding prior to, or during, the mixing while heating under shear forces at least one plastic selected from the group consisting of polyethylene, polyvinylchloride, polystyrene and polypropylene, the amount of plastic added being such to obtain in the melt an amount of thermoplastic material in a range of between 1% and 49%.

32. The process of claim 31, wherein the mixing while heating under shear forces is performed in a compounder selected from the group consisting of an extruder, an internal mixer, a two rolls mill, a co-kneader and a continuous mixer.

33. The process of claim 32, wherein the first component is in particulate form, the particulate having a size of between 0.01 mm and 2.5 in diameter.

34. The process of claim 33, comprising adding prior to, or during the mixing while heating at least one additive selected from the group consisting of absorbent, a binder, a plasticizer.

35. The process of claim 34, wherein the mixing while heating under shear forces at an applied pressure as dictated by the conditions and parameters detailed herein.

36. The process of claim 35 wherein the first component is substantially unsorted domestic waste.

37. The process of claim 36, comprising re-processing the composite material, the re-processing comprises heating the composite material to a temperature of between 100°C to 200°C and at least one process step selected from the group consisting of extruding, compression molding, injection molding whereby an article of manufacture is obtained.

38. A process comprising providing a composite material according to any one of Claims 1 to 19, and processing the composite material, the processing comprises heating the composite material a temperature of between 100°C to 200°C and at least one of process step selected from the group consisting of extruding, compression molding, injection

molding whereby an article of manufacture is obtained.

39. The process of claim 38, comprising adding prior to or during the heating at least one reinforcing element selected from the group consisting of bitumen, coarse aggregate and sand.