Claims

What is claimed is:

1. A method for bonding two biodegradable materials comprising:

configuring a carrier, said carrier comprising a composite material with fibrillated cellulose having independently derived plant fibers, said composite material being free from toxic chemical additives, said chemical additives adapted for improving dry tensile strength, enhanced oil barrier, gas and/or liquid impermeability, a dry tensile modulus, or a dry tensile index;

wherein the composite material comprises properties of:

an oxygen transmission rate of 8000 cm^3 m^{-2} 24 h^1 or less,

a water vapor transmission rate of 3000 g m^{-2} 24 h^1 or less,

a dry tensile strength of 30 MPa or higher,

a dry tensile modulus of 4 GPa or higher, and

a dry tensile index of 45 Nm g^1 or higher;

wherein the carrier comprises walls connected to a base at one end for defining a volume, said carrier further comprising a lip extending from the other end of the walls;

configuring a cover having a portion thereof to engage the lip of the carrier at an engagement zone;

infusing a filler at the engagement zone; and

enclosing the volume defined by the carrier via sealing the cover and the carrier having the infused filler bonding at a mechanical interlocking design with one or more protrusions or tongues and a frictional fit to holes in the engagement zone,

wherein the filler comprises a composite of fibrillated cellulose and independent of an adhesive.

2. The method of claim 1, wherein the carrier comprises a bowl, a capsule, a cup, or a tray.

3. The method of claim 1, wherein the cover comprises a lid, a cap, a membrane, or a film.

4. The method of claim 1, further comprising applying negative or positive pressure to the engagement zone.

5. The method of claim 1, wherein the portion of the cover comprises one or more protrusions for fitting to one or more holes on the lip of the carrier.

6. The method of claim 1, wherein the lip of the carrier comprises one or more protrusions for fitting to one or more holes of the portion of the cover.

7. The method of claim 1, further comprising inserting edible items to the volume of the

carrier before infusing the filler at the engagement zone to enclose the volume defined by the carrier.

8. A method for bonding two biodegradable materials comprising:

configuring a carrier, said carrier comprising a composite material with fibrillated cellulose having independently derived plant fibers, said composite material being free from toxic chemical additives, said chemical additives adapted for improving dry tensile strength, enhanced oil barrier, gas and/or liquid impermeability, a dry tensile modulus, or a dry tensile index;

wherein the composite material comprises properties of:

an oxygen transmission rate of 8000 cm^3 m^{-2} 24 h^1 or less,

a water vapor transmission rate of 3000 g m^{-2} 24 h^1 or less,

a dry tensile strength of 30 MPa or higher,

a dry tensile modulus of 4 GPa or higher, and

a dry tensile index of 45 Nm g^1 or higher;

wherein the carrier comprises walls connected to a base at one end for defining a volume, said carrier further comprising a lip extending from the other end of the walls;

configuring a cover having a portion thereof to engage the lip of the carrier at an engagement zone;

infusing a filler at the engagement zone; and

enclosing the volume defined by the carrier via sealing the cover and the carrier having the infused filler bonding at a mechanical interlocking design with one or more protrusions or tongues and a frictional fit to holes in the engagement zone,

wherein the filler comprises a composite of fibrillated cellulose and independent of an adhesive.