CLAIMS

1. A tobacco unit of a heatable tobacco product comprising:

- a tobacco material, and
- a heat-transmitting material integrally attached to the tobacco material to form a single composite material,

wherein the tobacco unit receives heat from a heating element coupled to the heatable tobacco product, and the heat-transmitting material is arranged to form a plurality of heat transmitting paths for distributing heat across the tobacco unit such that the entire tobacco material of the tobacco unit is homogenously heated at a temperature lower than a combustion temperature of the tobacco material for generating an aerosol for inhalation.

2. The tobacco unit according to claim 1, wherein the heat-transmitting material comprises a plurality of heat-transmitting fibers, homogeneously dispersed in the tobacco material in random orientations.

3. The tobacco unit according to claim 1, wherein the heat-transmitting material comprises one or more heat-transmitting layers, each heat-transmitting layer being attached to the tobacco material on at least one surface.

4. The tobacco unit according to any one of the preceding claims, wherein the heat-transmitting material comprises one or more of the following materials: - aluminium, copper, metallic alloys, graphite, conductive polymeric materials, any combinations thereof.

5. The tobacco unit according to any one of the preceding claims comprising a binder material for attaching the heat-transmitting material to the tobacco material.

6. The tobacco unit according to any one of the preceding claims further comprising one or more aerosol former materials.

7. The tobacco unit according to any one of the preceding claims, wherein the weight percentage of the heat-transmitting material in the tobacco unit is in the range of 0.5% -10%.

8. The tobacco unit according to any one of claims 2, 4 to 7, wherein the length of the heat-transmitting fibers are in the range of 1 mm to 20 mm.

9. The tobacco unit according to any one of claims 3 to 7, wherein the thickness of the one or more heat-transmitting layers are in the range of 0.05 mm to 1 mm.

10. A heatable tobacco product for use with a heating device comprising:

- a tobacco unit according to any one of claims 1 to 9 at a first end of the heatable tobacco product, and
- one or more filter elements located downstream of the tobacco unit.

11. The heatable tobacco product according to claim 10, further comprising one or more tubular support elements.

12. The heatable tobacco product according to claim 11, wherein the one or more tubular support elements comprise one or more of the following: - an inner tube located at the immediate downstream of the tobacco unit; an outer tube located at the extreme downstream of the heatable tobacco product.

13. The heatable tobacco product according to any one of claims 10 to 12, wherein the one or more filter elements comprise one or more materials from the following: at least one metallic material; at least one natural or synthetic fibrous material; at least one polymeric material; at least one resin material; and any combinations thereof.

14. The heatable tobacco product according to any one of claims 10 to 13, wherein the one or more filter elements comprise one or more of the following materials:- natural plant fibers; natural animal fibers; carbonized plant fibers, carbonized animal fibers;

synthetic polymer fibers; natural resin material; synthetic polymer resin; any combinations or derivatives thereof.

15. The heatable tobacco product according to any one of claims 10 to 14, wherein the one or more filter elements comprises one or more of the following materials: - cotton; jute; hemp; bamboo fibers; bamboo charcoal fibers; wool; silk; nylon; polyester fibers; polyimide fibers; polylactic acid (PLA); polyethylene (PE); polyethylene terephthalate (PET); polyethylene ether ketones (PEEK); polypropylene (PP); polytetrafluoroethylene (PTFE); polyvinylchloride (PVC); cellulose acetate (CA), starch based polymers, liquid crystal polymer material (LCP); polyacrylonitrile (PAN); polysiloxane or silicone; natural or synthetic rubber; paper; paper yarn; paper net; cork; carbon; graphene; any combinations or derivatives thereof.

16. The heatable tobacco product according to any one of claims 13 to 15, wherein the one or more materials forming the one or more filter elements are resistant to deformation or degradation when heated at temperatures of 180ºC and above.

17. The heatable tobacco product according to any one of claims 10 to 16, wherein the one or more filter elements comprise one or more of the following types of filter:- fibrous tow filter, film filter, foil filter, mesh filter, fabric filter, fabric mesh filter, sheet filter, wrapped filament filter, spongy filter, laminated filter, wafer filter, honey-comb structure filter, extruded or moulded filter, paper filter, paper yarn filter, flat woven or braided filter, flat net filter.

18. The heatable tobacco product according to any one of claims 10 to 17, wherein the one or more filter elements comprise at least one net filter.

19. The heatable tobacco product according to claim 18, wherein the at least one net filter comprises a plurality of randomized aerosol paths.

20. The heatable tobacco product according to any one of claims 10 to 19, wherein the one or more filter elements are formed from one or more natural materials obtained

from one or more of the following plant parts: - leaf, bark, trunk, fruit, seed, stem, flower, pollen, branch, root, sap, pulp, resin bagasse, calyx of the respective flora.

21. The heatable tobacco product according to any one of claims 10 to 20, wherein the one or more filter elements are formed from one or more sliced materials.

22. The heatable tobacco product according to claim 21, wherein the one or more sliced materials are in one or more of the following forms:- a I-shape or straight cut, an H-shape, an N-shape, a Z-shape, a zig-zag or S-shape, any non-linear and non-symmetrical shapes.

23. The heatable tobacco product according to any one of claims 10 to 22, wherein the one or more filter element comprises cellulose acetate (CA) in one or more of the following forms:- crushed or powder form, granule or pellet form, filament form, strip form, fibers or hardened fibers of any shape, threads, yarns, braided ropes, and flakes.

24. The heatable tobacco product according to any one of claims 10 to 23, wherein the one or more filter elements comprise a granule-filled filter, wherein the granule-filled filter comprises one or more granulated materials encased in at least one filter material.

25. The heatable tobacco product according to any one of claims 10 to 24, wherein at least one filter element is placed at the immediate downstream of the tobacco unit, the at least one filter element comprises a recess area for accommodating a part of the heating element protruding from the tobacco unit.

26. The heatable tobacco product according to any one of claims 10 to 25, wherein the one or more filter elements comprise at least one aerosol channel to facilitate aerosol flow.

27. The heatable tobacco product according to any one of claims 10 to 26, further comprising one or more overwraps circumscribing at least part of the heatable tobacco product.

28. The heatable tobacco product according to claim 27, wherein the one or more overwraps comprise one or more of the following materials: -natural plant fibers; natural animal fibers; carbonized plant fibers; carbonized animal fibers; synthetic polymer fibers.

29. The heatable tobacco product according to claim 27, wherein the one or more overwraps comprise one or more of the following materials: - jute; hemp; bamboo fibers; bamboo charcoal fibers; wool; silk; nylon; polyester fibers; polyimide fibers; polylactic acid (PLA); polyethylene (PE); polyethylene terephthalate (PET); polyethylene ether ketones (PEEK); polypropylene (PP); polytetrafluoroethylene (PTFE); polyvinylchloride (PVC), cellulose acetate (CA), starch based polymers, liquid crystal polymer material (LCP); polyacrylonitrile (PAN); polysiloxane or silicone; natural or synthetic rubber, cork, carbon, graphene, paper, paper yarn, paper net.

30. The heatable tobacco product according to any one of claims 27 to 29, wherein the one or more overwraps comprise one or more of the following: woven fabric materials formed from any type of fibers; non-woven fabric materials formed from any type of fibers.

31. The heatable tobacco product according to any one of claim 27 to 30, wherein the one or more overwraps further comprise one or more metallic foils.

32. The heatable tobacco product according to any one of claims 28 to 31, wherein the one or more materials forming the one or more overwraps are resistant to deformation and degradation when heated at temperatures of 180°C and above.

33. The heatable tobacco product according to any one of claims 26 to 32, wherein at least two overwraps are laminated into one single sheet material.

34. The heatable tobacco product according to any one of claims 27 to 33, wherein the one or more overwraps further comprise one or more heat insulating layers formed from

one or more of the following materials:- heat insulation food grade glue; high temperature resistant film.

35. The heatable tobacco product according to any one of claims 10 to 34, wherein the heatable tobacco product is adapted to be removably coupled to the heating device.

36. The heatable tobacco product according to any one of claims 10 to 34, wherein the heatable tobacco product is integrally attached to the heating device.

37. The heatable tobacco product according to any one of claims 10 to 36, wherein the heating device is configured to heat the tobacco unit of the heatable tobacco product at a set temperature under a constant power supply operational mode.

38. The heatable tobacco product according to claim 37, wherein the set temperature is in the range of between 280°C to 400°C.

39. The heatable tobacco product according to any one of claims 10 to 38, wherein the heating device is further configured to heat the tobacco unit during one or more heating cycles, each heating cycle comprising a first heating period where the tobacco unit is heated at a first heating temperature, and a second heating period where the tobacco unit is heated at a lower second heating temperature.

40. The heatable tobacco product according to claim 39, wherein the heating device is configured to turn off electrical power of the heating element during the second heating period of each heating cycle under a power-saving operational mode.

41. The heating tobacco product according to any one of claims 10 to 40, wherein the heating device is further configured to control the operating temperature of the heating element to be in the range of between 280ºC and 400ºC.

42. The heatable tobacco product according to any one of claims 13 to 41, wherein the one or more materials forming the one or more filter elements are odourless and non-toxic materials.

43. A heating device attached to a heatable tobacco product, the heating device comprising:

- one or more heating elements arranged to produce and transmit heat to a heatable tobacco product coupled to the heating device, the heatable tobacco product comprising a tobacco unit according to any one of claims 1 to 9; and
- an electronic control unit for controlling the operation of the heating device, wherein the tobacco unit receives heat from the one or more heating elements, and the heat-transmitting material of the tobacco unit is arranged to form a plurality of heat transmitting paths for distributing heat across the tobacco unit such that the entire tobacco material of the tobacco unit is homogenously heated at a temperature lower than a combustion temperature of the tobacco material for generating an aerosol for inhalation.

44. The heating device according to claim 43 further comprising a switch arranged to selectively activate the heating device.

45. The heating device according to claim 43 or 44 further comprising a power source unit for supplying electrical power to the heating device.

46. The heating device according to any one of claims 43 to 45, wherein the switch comprises an insulating sheet adapted for putting the power source unit in an open electric circuit.

47. The heating device according to any one of claims 43 to 46, wherein the heating device is integrally attached to the heatable tobacco product.

48. The heating device according to any one of claims 43 to 46, wherein the heating device is removably attached to the heatable tobacco product.

49. The heating device according to any one of claims 43 to 48, wherein the heating device is configured to heat the tobacco unit of the heatable tobacco product at a set temperature under a constant power supply operational mode.

50. The heating device according to claim 49, wherein the set temperature is in the range of between 280°C and 400°C.

51. The heating device according to any one of claims 43 to 50, wherein the heating device is further configured to heat the tobacco unit during one or more heating cycles, each heating cycle comprising a first heating period where the tobacco unit is heated at a first heating temperature, and a second heating period where the tobacco unit is heated at a lower second heating temperature.

52. The heating device according to claim 51, wherein the heating device is configured to turn off electrical power of the heating element during the second heating period of each heating cycle under a power-saving operational mode.

53. The heating device according to any one of claims 43 to 52, wherein the heating device is further configured to control the operating temperature of the heating element to be between 200ºC and 400ºC.

54. The heating device according to any one of claims 10 to 53, wherein the one or more heating elements are arranged in one or more of the following configurations:- a coil, a straight or corrugated ribbon, a strip of wires, a needle, a plate, any other three-dimensional shapes.

55. A method of producing a tobacco unit according to claim 2 for use in a heatable tobacco product, the method comprising the steps of:

- providing a homogenized tobacco material,
- preparing a solution containing at least a binding agent,
- preparing a plurality of heat-transmitting fibers,

- mixing the homogenized tobacco material, the heat-transmitting fibers and the solution to form a slurry,
- casting the slurry into a reconstituted tobacco material comprising heat-transmitting fibers homogeneously dispersed therein,
- forming the reconstituted material into a rod-like shape, further sized into a plurality of tobacco units for incorporating into the heatable tobacco product, wherein the tobacco unit receives heat from a heating element, and the heat-transmitting fibers are arranged to form a plurality of heat transmitting paths for distributing heat across the tobacco unit such that the entire tobacco material of the tobacco unit is homogenously heated at a temperature below a combustion temperature of the tobacco material for generating an aerosol for inhalation.

56. The method according to claim 55, wherein the heat-transmitting fibers are formed from aluminium, copper, metallic alloys, graphite, conductive polymeric materials, or any combinations thereof.

57. A method of producing a tobacco unit according to claim 3, the method comprising the steps of:

- providing a cast tobacco sheet material,
- providing a thin layer of heat-transmitting material,
- joining at least one cast tobacco sheet material and at least one heat-transmitting layer to form into a laminar sheet,
- forming the laminar sheet into a rod-like shape, further sized into a tobacco unit for incorporating into the heatable tobacco product, wherein the tobacco unit is receives heat from a heating element coupled to the heatable tobacco product, and the at least one heat-transmitting layer is arranged to form a plurality of heat transmitting paths for distributing heat across the tobacco unit such that the entire tobacco material of the tobacco unit is homogenously heated at a temperature below a combustion temperature of the tobacco material for generating an aerosol for inhalation.

58. A method of producing a tobacco unit according to claim 3, the method comprising the steps of:

- providing a heat-transmitting layer,
- preparing a homogenized tobacco material,
- depositing the homogenized tobacco material on at least one surface of the heat-transmitting layer with a binding agent to form a laminar sheet with at least one layer of tobacco material and at least one heat transmitting layer,
- forming the laminar sheet into a rod-like shape, further sized into a tobacco unit for incorporating into the heatable tobacco product, wherein the tobacco unit receives heat from a heating element coupled to the heatable tobacco product, and the at least one heat-transmitting layer is adapted to form a plurality of heat transmitting paths for distributing heat across the tobacco unit such that the entire tobacco material of the tobacco unit is homogenously heated at a temperature below a combustion temperature of the tobacco material for generating an aerosol for inhalation.

59. The method according to claim 58 comprising a further step of pressing the at least one tobacco sheet material and the at least one heat-transmitting layer to form a laminate.

60. The method according to any one of claims 57 to 59, wherein the heat-transmitting layer comprises thin foils of aluminium, copper, metallic alloys, graphite, conductive polymeric materials, or any combinations thereof.