CLAIMS

What is claimed is:

1. A bandage for a burn wound, comprising:

a first layer, substantially comprised of a thin thermally conductive metal substrate, having a first surface and a second surface,

wherein said metal substrate's first surface has a profile, when viewed from the side, that is substantially flat and adapted to make direct contact with a burn wound, and

wherein most of said metal substrate's second surface has a non-flat, heat-dissipation-enhancing surface topography, when viewed from the side, that rises above the base plane of said aluminum substrate, and is adapted to be directly exposed to air.

2. The bandage of claim 1, wherein said thermally conductive metal substrate is substantially comprised of a metal selected from the group consisting of aluminum, silver, gold, copper, magnesium, tungsten, platinum, and a metal alloy substantially based on any other aforementioned metals.

3. The bandage of claim 1, further comprising a second outer layer, substantially comprised of a substantially polymeric material, said second layer having a first surface and a second surface,

wherein said second outer layer's first surface is adapted to mate with and cover at least two of the perimeter edges of said second surface of said first layer, but also leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second layer extends beyond said at least two perimeter edges of said first layer,

wherein said at least two perimeter edges of said first layer are bonded to a portion of the first surface of said second layer,

wherein the remainder of the first surface of said second outer layer is substantially coated with a non-toxic adhesive material adapted for use on user skin, and

wherein said first and second layers are sized and shaped to a form factor that is

adapted for use on one or more areas of a user body.

4. The bandage of claim 1, further comprising a second outer layer, substantially comprised of a substantially polymeric material, and a third intermediate layer, substantially comprised of absorbent material, each layer having a first surface and a second surface,

wherein said third intermediate absorbent layer's first surface is adapted to mate with and cover at least two of the perimeter edges of said second surface of said first layer, but leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second outer layer's first surface is adapted to mate with and cover at least two of the perimeter edges of said second surface of said third layer, but also leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second and third layers extend beyond said at least two perimeter edges of said first layer,

wherein said second outer layer extends beyond said at least two perimeter edges of said third intermediate layer,

wherein said at least two perimeter edges of said first layer are bonded to a portion of the first surface of said third intermediate layer,

wherein said at least two perimeter edges of said third intermediate layer are bonded to a portion of the first surface of said second outer layer,

wherein the remainder of the first surface of said second outer layer is substantially coated with a non-toxic adhesive material adapted for use on user skin, and

wherein said first, second, and third layers are sized and shaped to a form factor that is adapted for use on one or more areas of a user body.

5. The bandage of claim 1, wherein said non-flat, heat-dissipation-enhancing surface topography includes a plurality of heat-dissipation-enhancing protrusions, said protrusions selected from the group consisting of cone-like protrusions, half-dome-like protrusions, and pyramid-like protrusions.

6. The bandage of claim 5, wherein said plurality of heat-dissipation-enhancing

protrusions are disposed in rows on said first layer, the positioning of every row with respect to its adjacent row(s) is selected from the group consisting of staggered and non-staggered.

7. The bandage of claim 5, wherein at least one heat-dissipation-enhancing protrusion has a hole disposed from its apex toward the base plane of said thermally conductive metal substrate.

8. The bandage of claim 1, wherein said first layer includes a plurality of manufactured aeration holes in said thermally conductive metal substrate.

9. The bandage of claim 7, wherein said at least one heat-dissipation-enhancing protrusion with a hole disposed from its apex toward the base plane of said thermally conductive metal substrate has its hole extending all the way through said thermally conductive metal substrate.

10. The bandage of claim 9, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is narrower toward said second surface of said first layer and wider toward said first surface of said first layer.

11. The bandage of claim 9, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is substantially the same size along the length of said hole.

12. The bandage of claim 1, wherein the material in said thermally conductive metal substrate is comprised of an aluminum alloy containing at least 92% aluminum and about 5% magnesium.

13. The bandage of claim 12, wherein said aluminum alloy is annealed by a process comprising the step of subjecting said aluminum alloy to a temperature in the range of 775 °C to 900 °C.

14. The bandage of claim 13, further comprising the step of allowing said aluminum alloy to naturally cool; that is, non-furnace cool,

thereby substantially removing any strain hardening of said aluminum alloy and ensuring that the re-crystallization of said aluminum alloy results in substantially uniform grain growth and directional orientation.

15. The bandage of claim 3, further comprising a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with a burn wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing.

16. The bandage of claim 15, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

17. The bandage of claim 15, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

18. The bandage of claim 15, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

19. The bandage of claim 3, wherein said second layer is substantially comprised of perforated 1527-ENP ethylene vinyl acetate (EVA).

20. The bandage of claim 3, wherein said form factor is adapted to facilitate bandage application to a part of a human body selected from the group consisting of finger, thumb, toe, elbow, wrist, knee, ankle, foot, hand palm, and face.

21. The bandage of claim 3, wherein said form factor is of a shape selected from the group consisting of rectangle, square, rounded-corner rectangle, circle, oval, triangle, rounded-corner triangle, and continuous-strip roll.

22. The bandage of claim 4, further comprising a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with a burn

wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing.

23. The bandage of claim 22, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

24. The bandage of claim 22, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

25. The bandage of claim 22, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

26. The bandage of claim 4, wherein said second layer is substantially comprised of perforated 1527-ENP ethylene vinyl acetate (EVA).

27. The bandage of claim 4, wherein said third intermediate layer is substantially comprised of a material selected from the group consisting of cotton cause, silk gauze, porous plastic gauze, and hydrogel.

28. The bandage of claim 4, wherein said form factor is adapted to facilitate bandage application to a part of a human body selected from the group consisting of finger, thumb, toe, elbow, wrist, knee, ankle, foot, hand palm, and face.

29. The bandage of claim 4, wherein said form factor is of a shape selected from the group consisting of rectangle, square, rounded-corner rectangle, circle, oval, triangle, rounded-corner triangle, and continuous-strip roll.

30. A method of making a bandage for a burn wound, comprising:

providing a first layer, substantially comprised of a thin thermally conductive metal substrate, having a first surface and a second surface,

wherein said metal substrate's first surface has a profile, when viewed from the side, that is substantially flat and adapted to make direct contact with a burn wound, and

wherein most of said metal substrate's second surface has a non-flat, heat-dissipation-enhancing surface topography, when viewed from the side, that rises above the base plane of said thermally conductive metal substrate, and is adapted to be directly exposed to air.

31. The method of claim 30, wherein said thermally conductive metal substrate is substantially comprised of a metal selected from the group consisting of aluminum, silver, gold, copper, magnesium, tungsten, platinum, and a metal alloy substantially based on any other aforementioned metals.

32. The method of claim 30, further comprising the step of providing a second outer layer, substantially comprised of a substantially polymeric material, said second layer having a first surface and a second surface,

wherein said second outer layer's first surface is adapted to mate with and cover at least two of the perimeter edges of said second surface of said first layer, but also leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second layer extends beyond said at least two perimeter edges of said first layer,

wherein said at least two perimeter edges of said first layer are bonded to a portion of the first surface of said second layer,

wherein the remainder of the first surface of said second outer layer is substantially coated with a non-toxic adhesive material adapted for use on user skin, and

wherein said first and second layers are sized and shaped to a form factor that is adapted for use on one or more areas of a user body.

33. The method of claim 30, further comprising the steps of providing a second outer layer substantially comprised of a substantially polymeric material, and providing a third

intermediate layer, substantially comprised of absorbent material, each layer having a first surface and a second surface,

wherein said third intermediate absorbent layer's first surface is adapted to mate with and cover at least two of the perimeter edges of said second surface of said first layer, but leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second outer layer's first surface is adapted to mate with and cover at least two of the perimeter edges of said second surface of said third layer, but also leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second and third layers extend beyond said at least two perimeter edges of said first layer,

wherein said second outer layer extends beyond said at least two perimeter edges of said third intermediate layer,

wherein said at least two perimeter edges of said first layer are bonded to a portion of the first surface of said third intermediate layer,

wherein said at least two perimeter edges of said third intermediate layer are bonded to a portion of the first surface of said second outer layer,

wherein the remainder of the first surface of said second outer layer is substantially coated with a non-toxic adhesive material adapted for use on user skin, and

wherein said first, second, and third layers are sized and shaped to a form factor that is adapted to one or more areas of a user body.

34. The method of claim 30, wherein said non-flat, heat-dissipation-enhancing surface topography includes a plurality of heat-dissipation-enhancing protrusions, said protrusions selected from the group consisting of cone-like protrusions, half-dome-like protrusions, and pyramid-like protrusions.

35. The method of claim 34, wherein said plurality of heat-dissipation-enhancing protrusions are disposed in rows on said first layer, the positioning of every row with respect to its adjacent row(s) is selected from the group consisting of staggered and non-staggered.

36. The method of claim 34, wherein at least one heat-dissipation-enhancing protrusion has a hole disposed from its apex toward the base plane of said thermally conductive metal substrate.

37. The method of claim 30, wherein said first layer includes a plurality of manufactured aeration holes in said thermally conductive metal substrate.

38. The method of claim 36, wherein said at least one heat-dissipation-enhancing protrusion with a hole disposed from its apex toward the base plane of said thermally conductive metal substrate has its hole extending all the way through said thermally conductive metal substrate.

39. The method of claim 38, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is narrower toward said second surface of said first layer and wider toward said first surface of said first layer.

40. The method of claim 38, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is substantially the same size along the length of said hole.

41. The method of claim 30, wherein the material in said thermally conductive metal substrate is comprised of an aluminum alloy containing at least 92% aluminum and about 5% magnesium.

42. The method of claim 41, wherein said aluminum alloy is annealed by a process comprising the step of subjecting said aluminum alloy to a temperature in the range of 775 °C to 900 °C.

43. The method of claim 42, further comprising the step of allowing said aluminum alloy to naturally cool; that is, non-furnace cool,

thereby substantially removing any strain hardening of said aluminum alloy and ensuring that the re-crystallization of said aluminum alloy results in substantially uniform grain growth and directional orientation.

44. The method of claim 32, further comprising the step of providing a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with a burn

wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing.

45. The method of claim 32, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

46. The method of claim 32, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

47. The method of claim 32, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

48. The method of claim 32, wherein said second layer is substantially comprised of perforated 1527-ENP ethylene vinyl acetate (EVA).

49. The method of claim 32, wherein said form factor is adapted to facilitate bandage application to a part of a human body selected from the group consisting of finger, thumb, toe, elbow, wrist, knee, ankle, foot, hand palm, and face.

50. The method of claim 32, wherein said form factor is of a shape selected from the group consisting of rectangle, square, rounded-corner rectangle, circle, oval, triangle, rounded-corner triangle, and continuous-strip roll.

51. The method of claim 33, further comprising the step of providing a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with a burn wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing.

52. The method of claim 51, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

53. The method of claim 51, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

54. The method of claim 51, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

55. The method of claim 33, wherein said second layer is substantially comprised of perforated 1527-ENP ethylene vinyl acetate (EVA).

56. The method of claim 33, wherein said third intermediate layer is substantially comprised of a material selected from the group consisting of cotton cause, silk gauze, porous plastic gauze, and hydrogel.

57. The method of claim 33, wherein said form factor is adapted to facilitate bandage application to a part of a human body selected from the group consisting of finger, thumb, toe, elbow, wrist, knee, ankle, foot, hand palm, and face.

58. The method of claim 33, wherein said form factor is of a shape selected from the group consisting of rectangle, square, rounded-corner rectangle, circle, oval, triangle, rounded-corner triangle, and continuous-strip roll.

59. A method of using a bandage according to claim 1, comprising the steps of:

obtaining a bandage according to claim 1;

applying said bandage to a burn wound with the first surface of said first layer in direct contact with said burn wound; and

securing said bandage in position over said burn wound by applying adhesive medical tape along some or all of the edges of said bandage and extending to the tissue surrounding non-burned tissue,

wherein the top side of said bandage first layer is mostly left uncovered and exposed to the ambient environment.

60. The method of claim 59, wherein said thermally conductive metal substrate is substantially comprised of a metal selected from the group consisting of aluminum, silver, gold, copper, magnesium, tungsten, platinum, and a metal alloy substantially based on any other aforementioned metals.

61. The method of claim 59, wherein said non-flat, heat-dissipation-enhancing surface topography includes a plurality of heat-dissipation-enhancing protrusions, said protrusions selected from the group consisting of cone-like protrusions, half-dome-like protrusions, and pyramid-like protrusions.

62. The method of claim 61, wherein said plurality of heat-dissipation-enhancing protrusions are disposed in rows on said first layer, the positioning of every row with respect to its adjacent row(s) is selected from the group consisting of staggered and non-staggered.

63. The method of claim 61, wherein at least one heat-dissipation-enhancing protrusion has a hole disposed from its apex toward the base plane of said thermally conductive metal substrate.

64. The method of claim 59, wherein said first layer includes a plurality of manufactured aeration holes in said thermally conductive metal substrate.

65. The method of claim 63, wherein said at least one heat-dissipation-enhancing protrusion with a hole disposed from its apex toward the base plane of said thermally conductive metal substrate has its hole extending all the way through said thermally conductive metal substrate.

66. The method of claim 65, wherein said hole disposed in at least one heat-dissipation-

enhancing protrusion has a diameter that is narrower toward said second surface of said first layer and wider toward said first surface of said first layer.

67. The method of claim 65, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is substantially the same size along the length of said hole.

68. The method of claim 59, wherein the material in said thermally conductive metal substrate is comprised of an aluminum alloy containing at least 92% aluminum and about 5% magnesium.

69. The method of claim 68, wherein said aluminum alloy is annealed by a process comprising the step of subjecting said aluminum alloy to a temperature in the range of 775 °C to 900 °C.

70. The method of claim 69, wherein said annealing process further comprises the step of allowing said aluminum alloy to naturally cool; that is, non-furnace cool,

thereby substantially removing any strain hardening of said aluminum alloy and ensuring that the re-crystallization of said aluminum alloy results in substantially uniform grain growth and directional orientation.

71. The method of claim 59, wherein said bandage further comprises a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with a burn wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing;

the method further comprising the steps of:

observing said thermochromic indicator member;

if said thermochromic indicator member indicates that said burn wound is too

warm, then continuing the application of said bandage on said burn wound to further cooling of said burn wound;

if said thermochromic indicator member indicates that said burn wound has cooled sufficiently, then removing said bandage from said burn wound and applying a different medical dressing to said burn wound; and

repeating the previous steps as necessary until said bandage has been removed from said burn wound.

72. The method of claim 71, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

73. The method of claim 71, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

74. The method of claim 71, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

75. The method of claim 71, wherein said different medical dressing is any one or combination of dressings selected from the group consisting of medicinal compounds, therapeutic compounds, and sterile gauze-based or cotton-based bandages.

76. The method of claim 59, wherein said bandage has a form factor adapted to facilitate bandage application to a part of a human body selected from the group consisting of finger, thumb, toe, elbow, wrist, knee, ankle, foot, hand palm, and face.

77. The method of claim 59, wherein said bandage has a form factor with a shape selected from the group consisting of rectangle, square, rounded-corner rectangle, circle, oval, triangle, rounded-corner triangle, and continuous-strip roll.

78. The method of claim 59, further comprising the step of subjecting the exposed thermally conductive metal substrate of said applied bandage to forced-air cooling.

79. A method of using a bandage according to claim 4, comprising the steps of:

obtaining a bandage according to claim 2;

applying said bandage to a burn wound with the first surface of said first layer in direct contact with said burn wound; and

securing said bandage in position over said burn wound with said adhesive material disposed on the first side of said second layer of said bandage.

80. The method of claim 79, wherein said thermally conductive metal substrate is substantially comprised of a metal selected from the group consisting of aluminum, silver, gold, copper, magnesium, tungsten, platinum, and a metal alloy substantially based on any other aforementioned metals.

81. The method of claim 79, wherein said non-flat, heat-dissipation-enhancing surface topography includes a plurality of heat-dissipation-enhancing protrusions, said protrusions selected from the group consisting of cone-like protrusions, half-dome-like protrusions, and pyramid-like protrusions.

82. The method of claim 81, wherein said plurality of heat-dissipation-enhancing protrusions are disposed in rows on said first layer, the positioning of every row with respect to its adjacent row(s) is selected from the group consisting of staggered and non-staggered.

83. The method of claim 81, wherein at least one heat-dissipation-enhancing protrusion has a hole disposed from its apex toward the base plane of said thermally conductive metal substrate.

84. The method of claim 79, wherein said first layer includes a plurality of manufactured aeration holes in said thermally conductive metal substrate.

85. The method of claim 83, wherein said at least one heat-dissipation-enhancing protrusion with a hole disposed from its apex toward the base plane of said thermally conductive metal substrate has its hole extending all the way through said thermally conductive metal substrate.

86. The method of claim 85, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is narrower toward said second surface of said

first layer and wider toward said first surface of said first layer.

87. The method of claim 85, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is substantially the same size along the length of said hole.

88. The method of claim 79, wherein the material in said thermally conductive metal substrate is comprised of an aluminum alloy containing at least 92% aluminum and about 5% magnesium.

89. The method of claim 88, wherein said aluminum alloy is annealed by a process comprising the step of subjecting said aluminum alloy to a temperature in the range of 775 °C to 900 °C.

90. The method of claim 89, wherein said annealing process further comprises the step of allowing said aluminum alloy to naturally cool; that is, non-furnace cool,

thereby substantially removing any strain hardening of said aluminum alloy and ensuring that the re-crystallization of said aluminum alloy results in substantially uniform grain growth and directional orientation.

91. The method of claim 79, wherein said bandage further comprises a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with a burn wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing;

the method further comprising the steps of:

observing said thermochromic indicator member;

if said thermochromic indicator member indicates that said burn wound is too warm, then continuing the application of said bandage on said burn wound to

further cooling of said burn wound;

if said thermochromic indicator member indicates that said burn wound has cooled sufficiently, then removing said bandage from said burn wound and applying a different medical dressing to said burn wound; and

repeating the previous steps as necessary until said bandage has been removed from said burn wound.

92. The method of claim 91, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

93. The method of claim 91, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

94. The method of claim 91, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

95. The method of claim 91, wherein said different medical dressing is any one or combination of dressings selected from the group consisting of medicinal compounds, therapeutic compounds, and sterile gauze-based or cotton-based bandages.

96. The method of claim 79, wherein said second layer is substantially comprised of perforated 1527-ENP ethylene vinyl acetate (EVA).

97. The method of claim 79, wherein said form factor is adapted to facilitate bandage application to a part of a human body selected from the group consisting of finger, thumb, toe, elbow, wrist, knee, ankle, foot, hand palm, and face.

98. The method of claim 79, wherein said form factor is of a shape selected from the group consisting of rectangle, square, rounded-corner rectangle, circle, oval, triangle, rounded-corner triangle, and continuous-strip roll.

99. The method of claim 79, wherein said third intermediate layer is substantially comprised of a material selected from the group consisting of cotton cause, silk gauze, porous plastic gauze, and hydrogel.

100. The method of claim 79, further comprising the step of subjecting the exposed thermally conductive metal substrate of said applied bandage to forced-air cooling.

CLAIMS

1. A bandage for a burn wound, comprising:
a first layer, substantially comprised of a thin thermally conductive metal substrate, having a first surface and a second surface,

wherein said metal substrate's first surface has a profile, when viewed from a side, that is substantially flat and adapted to make direct contact with said burn wound,

wherein most of said metal substrate's second surface has a non-flat, heat-dissipation-enhancing surface topography, when viewed from the side, that rises above a base plane of said thermally conductive metal substrate, and is adapted to be directly exposed to air,

wherein said non-flat, heat-dissipation-enhancing surface topography includes a plurality of heat-dissipation-enhancing protrusions, said protrusions selected from the group consisting of substantially cone shaped protrusions, substantially half-dome shaped protrusions, and substantially pyramid shaped protrusions, and

wherein at least one heat-dissipation-enhancing protrusion has a hole disposed from its apex toward the base plane of said thermally conductive metal substrate.

2. A bandage for a burn wound, comprising:
a first layer, substantially comprised of a thin thermally conductive metal substrate, having a first surface and a second surface,

wherein said metal substrate's first surface has a profile, when viewed from a side, that is substantially flat and adapted to make direct contact with said burn wound,

wherein most of said metal substrate's second surface has a non-flat, heat-dissipation-enhancing surface topography, when viewed from the side, that rises above a base plane of said thermally conductive metal substrate, and is adapted to be directly exposed to air, and

wherein said first layer includes a plurality of manufactured aeration holes in said thermally conductive metal substrate.

3. The bandage of claim 1, wherein said at least one heat-dissipation-enhancing protrusion with a hole disposed from its apex toward the base plane of said thermally conductive metal substrate has its hole extending all the way through said thermally conductive metal substrate.

4. The bandage of claim 3, wherein said hole disposed in at least one heat-dissipation-

enhancing protrusion has a diameter that is narrower toward said second surface of said first layer and wider toward said first surface of said first layer.

5. The bandage of claim 3, wherein said hole disposed in at least one heat-dissipation-enhancing protrusion has a diameter that is substantially the same size along the length of said hole.

6. A bandage for a burn wound, comprising:

a first layer, substantially comprised of a thin thermally conductive metal substrate, having a first surface and a second surface,

wherein said metal substrate's first surface has a profile, when viewed from a side, that is substantially flat and adapted to make direct contact with said burn wound, and

wherein most of said metal substrate's second surface has a non-flat, heat-dissipation-enhancing surface topography, when viewed from the side, that rises above a base plane of said thermally conductive metal substrate, and is adapted to be directly exposed to air;

a second outer layer, substantially comprised of a substantially polymeric material, said second layer having a first surface and a second surface,

wherein said second outer layer's first surface is adapted to mate with and cover at least two perimeter edges of said second surface of said first layer, but also leaving most of said first layer's second surface uncovered and exposed to the air,

wherein said second layer extends beyond said at least two perimeter edges of said first layer,

wherein said at least two perimeter edges of said first layer are bonded to a portion of the first surface of said second layer,

wherein a remainder of the first surface of said second outer layer is substantially coated with a non-toxic adhesive material adapted for use on user skin, and

wherein said first and second layers are sized and shaped to a form factor that is adapted for use on one or more areas of a user body; and

a thermochromic indicator member,

wherein said thermochromic indicator member is in thermal communication with said burn wound via said first layer, and

wherein said thermochromic indicator member is comprised of material calibrated to:

indicate to a user when a burn on which said bandage is applied is still too warm for safe removal of said bandage, based on a predetermined threshold, and

indicate to a user when a burn has cooled to at least a predetermined threshold such that said bandage can be safely removed and/or changed-out for a new medical dressing.

7. The bandage of claim 6, wherein said thermochromic indicator member provides color-based user indications as to the thermal status of the burn to which said bandage is applied.

8. The bandage of claim 6, wherein said thermochromic indicator member provides icon-based user indications as to the thermal status of the burn to which said bandage is applied.

9. The bandage of claim 6, wherein said thermochromic indicator member is comprised of material selected from the group consisting of thermochromic liquid crystals, leuco dyes, and thermochromic inks.

10. A method of making a bandage for a burn wound, comprising: providing a first layer, substantially comprised of a thin thermally conductive metal substrate, having a first surface and a second surface,

wherein said metal substrate's first surface has a profile, when viewed from the side, that is substantially flat and adapted to make direct contact with a burn wound, and

wherein most of said metal substrate's second surface has a non-flat, heat-dissipation-enhancing surface topography, when viewed from the side, that rises above the base plane of said thermally conductive metal substrate, and is adapted to be directly exposed to air.

11. The method of claim 10, wherein said thermally conductive metal substrate is substantially comprised of a metal selected from the group consisting of aluminum, silver, gold, copper, magnesium, tungsten, platinum, and a metal alloy substantially based on any other aforementioned metals.