WHAT IS CLAIMED IS:

1. A device for generating an inhalable aerosol comprising an electronic heater comprising:

    a. an oven comprising an oven chamber; and
    b. a heater circuit attached to the oven, wherein the heater circuit heats as current is passed therethrough thereby conductively heating the oven and a vaporizable material in the oven to generate the inhalable aerosol.

2. The device of claim 1, wherein the heater circuit comprises a polyimide thin film.

3. The device of claim 1 or 2, wherein the heater circuit is soldered to a printed circuit board.

4. The device of any one of claims 1-3, wherein the heater circuit comprises an etched copper-clad polyimide film, a constantan-clad polyimide film, an electrically insulated die-cut constantan sheet, an electrically insulated die-cut copper sheet, an electrically insulated stamped constantan sheet, or an electrically insulated stamped copper sheet.

5. The device of any one of claims 1-4, wherein the heater circuit comprises polyimide to electrically insulate the heater circuit from adjacent conductive elements in the device.

6. The device of any one of claims 1-5, wherein the oven comprises a stainless steel tube and a high temperature capable plastic, and wherein the stainless steel tube is thermal pressed, ultrasonic bonded, adhesive bonded, mechanically joined, or over molded into the high temperature capable plastic.

7. The device of claim 6, wherein the thermal pressing, ultrasonic bonding, adhesive bonding, mechanically joining, or over molding of the stainless steel tube into the high temperature capable plastic forms a dust seal that prevents one or more of, dust from an internal insulation material from escaping the device and entering the oven chamber, and dust from entering an internal chamber of the device.

8. The device of any one of the claims 6-7, wherein the plastic comprises a thermoplastic selected from the group consisting of: polyphenylene sulfide (PPS), polyetherimide (PEI), and liquid crystal polymer (LCP).

9. The device of any one of the claims 6-8, wherein the thermal pressing comprises heat staking or heat swaging.

10. The device of any one of the claims 6-9, wherein the oven comprises an o-ring between the plastic and stainless steel.

11. The device of any one of the claims 1-10, wherein the device comprises a mouthpiece.

12. The device of claim 11, wherein the mouthpiece is integrated into the device.

13. The device of claim 11, wherein the mouthpiece is split such that half of the mouthpiece is removable.

14. The device of claim 13, wherein the removable portion of the mouthpiece conforms to the contour of the device.

15. The device of any one of the claims 1-14, wherein the vaporizable material is directly in the oven chamber without placing the vaporizable material in a cartridge

16. The device of any one of the claims 1-14, wherein the vaporizable material is contained in a cartridge and the cartridge is placed directly in the oven chamber.

17. The device of any one of the claims 1-16, wherein the vaporizable material comprises loose leaf tobacco, a loose leaf plant material, or a botanical.

18. The device of any one of the claims 1-16, wherein the vaporizable material comprises any compound or material that can be vaporized at a relatively low temperature.

19. The device of claim 1, wherein the heater circuit is dimensioned to contour an outer surface of the oven such that heat conductively transfers from the heater circuit to the outer surface of the oven thereby heating the vaporizable material contained inside the oven chamber.

20. A device for generating an inhalable aerosol comprising:

a. an electronic heater comprising an oven, an oven chamber, and a heater circuit contacting the oven; and
b. internal insulation;

wherein the electronic heater is sealed by a dust seal to prevent dust from the internal insulation from entering the oven chamber.

21. The device of claim 20, wherein the oven comprises a stainless steel tube and a high temperature capable plastic, and wherein the stainless steel tube has been thermal pressed, ultrasonic bonded, adhesive bonded, mechanically joined, or over molded into the high temperature capable plastic.

22. The device of claim 21, wherein the thermal pressing, ultrasonic bonding, adhesive bonding, mechanically joining, or over molding of the stainless steel tube into the high temperature capable plastic forms the dust seal.

23. The device of any one of the claims 21-22, wherein the plastic comprises a thermoplastic selected from the group consisting of: polyphenylene sulfide (PPS), polyetherimide (PEI), and liquid crystal polymer (LCP).

24. The device of any one of the claims 21-23, wherein the thermal pressing comprises heat staking or heat swaging.

25. The device of any one of the claims 21-24, wherein the oven comprises an o-ring between the plastic and the stainless steel tube.

26. The device of any one of the claims 20-25, wherein the dust seal prevents environmental dust from entering an internal chamber of the device.

27. The device of any one of the claims 20-26, wherein the insulation is aerogel insulation.

28. The device of any one claims 20-27, wherein the device comprises a mouthpiece.

29. The device of claim 28, wherein the mouthpiece is integrated into the device.

30. The device of claim 28, wherein the mouthpiece is split such that half of the mouthpiece is removable, and wherein the removable portion of the mouthpiece conforms to the contour of the device.

31. A method for generating an inhalable aerosol comprising, providing a device comprising:

c. an electronic heater comprising an oven, an oven chamber, and a heater circuit contacting the oven; and
d. internal insulation ,

wherein the electronic heater is sealed by a dust seal to prevent dust from the internal insulation from entering the oven chamber.

32. The method of claim 31, wherein the oven comprises a stainless steel tube and a high temperature capable plastic, and wherein forming the dust seal comprises one or more of thermal pressing, ultrasonic bonding, adhesive bonding, mechanically joining, or over molding the oven into the high temperature capable plastic.

33. The method of claim 32, wherein the plastic comprises a thermoplastic selected from the group consisting of: polyphenylene sulfide (PPS), polyetherimide (PEI), and liquid crystal polymer (LCP).

34. The method of any one of the claims 32-33, wherein the thermal pressing comprises heat staking or heat swaging.

35. The method of any one of the claims 32-33, wherein the oven comprises an o-ring between the plastic and the stainless steel tube.

36. The method of any one of the claims 31-35, wherein the dust seal prevents environmental dust from entering an internal chamber of the device.

37. The method of any one of the claims 31-36, wherein the insulation is aerogel insulation.

38. The method of any one claims 31-37, wherein the device comprises a mouthpiece.

39. The method of claim 38, wherein the mouthpiece is integrated into the device.

40. The method of claim 38, wherein the mouthpiece is split such that half of the mouthpiece is removable, and wherein the removable portion of the mouthpiece conforms to the contour of the device.

41. A device for generating an inhalable aerosol comprising:

e. a body;
f. a vaporization chamber inside the body; and
g. a lid comprising:
    i. a magnetic attachment;
    ii. a closed position, wherein the lid is magnetically attached to the body and covers the vaporization chamber;
    iii. a pivoted position, wherein the lid is magnetically attached to the body and one side of the lid is pivoted away from the vaporization chamber; and
    iv. a removed position, wherein the lid is removed from the body.

42. The device of claim 41, wherein the magnetic attachment is configured to allow detachment and re-attachment of the lid from the body.

43. The device of any one of the claims 41-42, wherein the magnetic attachment forms a hinge about which the lid swivels away from the body of the device when a force is exerted on the lid.

44. The device of claim 43, wherein the hinge comprises two magnets in the lid and two magnets correspondingly placed in the body of the device so as to form the hinge around which the lid swivels.

45. The device of any one of the claims 41-44, wherein a magnetic force is overcome to remove the lid from the body of the device.

46. The device of any one of claims 41-45, wherein removal of the lid from the body of the device allows access to the vaporization chamber.

47. The device of any one of claims 40-46, wherein the lid comprises a snap attachment that maintains the lid in the closed position and/or prevents accidental opening of the lid.

48. The device of any one of claims 41-47, wherein the magnetic attachment maintains the lid in the closed position and/or prevents accidental opening of the lid.

49. The device of any one of the claims, 41-48, wherein the lid is recessed into the body of the device.

50. The device of claim 41, wherein the lid is a mouthpiece.

51. The device of claim 50, wherein the mouthpiece swivels or slides to reveal the vaporization chamber.

52. The device of any one of the claims 41-51, wherein the vaporizable material is directly in the vaporization chamber without placing the vaporizable material in a cartridge.

53. The device of any one of the claim 41-51, wherein the vaporizable material is contained in a cartridge and the cartridge is placed directly in the vaporization chamber.

54. A method for generating an inhalable aerosol comprising, providing a device comprising:

h. a body;
i. a vaporization chamber; and
j. a lid comprising:
    i. a magnetic attachment;
    ii. a closed position, wherein the lid is magnetically attached to the body and covers the vaporization chamber;
    iii. a pivoted position, wherein the lid is magnetically attached to the body and one side of the lid is pivoted away from the vaporization chamber; and
    iv. a removed position, wherein the lid is removed from the body.

55. The method of claim 54, wherein the magnetic attachment is configured to allow detachment and re-attachment of the lid from the body.

56. The method of any one of the claims 54-55, wherein the magnetic attachment forms a hinge about which the lid swivels away from the body of the device when a force is exerted on the lid.

57. The method of claim 56, wherein forming the hinge comprises placing two magnets in the lid and correspondingly placing two magnets in the body of the device so as to form the hinge around which the lid swivels.

58. The method of any one of the claims 54-57, wherein a magnetic force is overcome to remove the lid from the body of the device.

59. The method of any one of claims 54-58, wherein removal of the lid from the body of the device allows access to the vaporization chamber.

60. The method of any one of claims 54-59, wherein the lid comprises a snap attachment that maintains the lid in the closed position and/or prevents accidental opening of the lid.

61. The method of any one of claims 54-60, wherein the magnetic attachment maintains the lid in the closed position and/or prevents accidental opening of the lid.

62. The method of any one of the claims, 54-61, wherein the lid is recessed into the body of the device.

63. The method of claim 54, wherein the lid is a mouthpiece.

64. The method of claim 63, wherein the mouthpiece swivels or slides to reveal the vaporization chamber.

65. A device for generating an inhalable aerosol comprising, an electronic heater and a sensor comprising an accelerometer or a vibration sensor, wherein the device is programmed to convert between three modes of operation based on the sensor, the three modes of operation comprising:

a. an on mode;
b. a standby mode; and
c. an off mode.

66. The device of claim 65, wherein the standby mode comprises a standby temperature of the electronic heater, the standby temperature being 5 °C to 30 °C less than the main operating temperature.

67. The device of claim 66, wherein the main operating temperature is 165 °C.

68. The device of any one of claims 65-67, wherein the device is programmed to convert from the on mode to the standby mode based on a length of time, a lack of movement of the device, a position of the device, placement of the device in a charger, or a combination thereof.

69. The device of any one of the claims 65-68, wherein the sensor further comprises a capacitive touch sensor or other tactile sensor.

70. The device of claim 69, wherein the sensor monitors a thermistor configured to detect if the heater is being loaded by a user puffing on the device.

71. The device of any one of claims 65-70, wherein the device is configured to convert from standby mode to on mode when the sensor detects movement of the device, movement of the device from a vertical position to a horizontal position, movement of the device from a horizontal position to a vertical position, movement indicating a user has picked up the device, removal of the device from a charger, touch by a user, puffing on the device by a user, pressing of a button on the device, or any combination thereof.

72. The device of any one of claims 65-71, wherein the device converts from standby mode to off mode after a period of time in which the device was not in use.

73. The device of any one of claims 65-72, wherein the device is configured to convert from off mode to on mode by a button on the device being pressed, by removal of the device from a charger, or by moving the device.

74. The device of any one of claims 65-73, wherein when the device is in standby mode, battery power is conserved relative to when the device is in the on mode and/or a temperature of the heater is lower than when the device is in on mode.

75. The device of any one of claims 65-74, the heater comprises a proportional integral derivative control loop that controls an operating temperature of the device.

76. The device of any one of claims 65-75, wherein a set point temperature of the electronic heater is fixed or user-selectable.

77. The device of any one of claims 65-76, wherein the device comprises a single button interface.

78. The device of claim 77, wherein the single button interface is coupled to a printed circuit board, and wherein the single button interface is configured to turn the electronic heater on, off, and to wake the electronic heater from standby mode.

79. The device of any one of the claims 65-78, wherein the device comprises a mouthpiece.

80. The device of claim 79, wherein the mouthpiece is integrated into the device.

81. The device of claim 79, wherein the mouthpiece is split such that half of the mouthpiece is removable.

82. The device of claim 81, wherein the removable portion of the mouthpiece conforms to the contour of the device.

83. A method of generating an inhalable aerosol comprising, providing a device comprising an electronic heater and a sensor comprising an accelerometer or a vibration sensor, wherein the device is programmed to convert between three modes of operation based on the sensor, the three modes of operation comprising:

d. an on mode;
e. a standby mode; and
f. an off mode.

84. The method of claim 83, wherein the standby mode comprises a standby temperature of the electronic heater, the standby temperature being 5 °C to 30 °C less than a main operating temperature.

85. The method of claim 84, wherein the main operating temperature is 165 °C.

86. The method of any one of claims 83-85, wherein the device is programmed to convert from the on mode to the standby mode based on a length of time, a lack of movement, a position of the device, placement of the device in a charger, or a combination thereof.

87. The method of any one of claims 83-86, wherein the sensor further comprises a capacitive touch sensor or other tactile sensor.

88. The method of claim 86, wherein the sensor monitors a thermistor to detect if the heater is being loaded by a user puffing on the device.

89. The method of any one of claims 83-86, wherein the device is configured to convert from standby mode to on mode when the sensor detects movement of the device, movement of the device from a vertical position to a horizontal position, movement of the device from a horizontal position to a vertical position, movement indicating a user has picked up the device, removal of the device from a charger, touch by a user, or any combination thereof.

90. The method of any one of claims 83-89, wherein the device converts from standby mode to off mode after a period of time in which the device is not in use.

91. The method of any one of claims 83-90, wherein the device is configured to convert from off mode to on mode by a button on the device being pressed, by removal of the device from a charger, or by moving the device.

92. The method of any one of claims 83-91, wherein when the device is in standby mode, battery power is conserved relative to when the device is in the on mode and/or a temperature of the heater is lower than when the device is in on mode.

93. The method of any one of claims 83-92, wherein the heater comprises a proportional integral derivative control loop that controls an operating temperature of the device.

94. The method of any one of claims 83-93, wherein a set point temperature of the electronic heater is fixed or user-selectable.

95. The method of any one of claims 83-94, wherein the device further comprises a single button interface.

96. The method of claim 95, wherein the single button interface is coupled to a printed circuit board, and wherein the single button interface is configured to turn the electronic heater on, off, and to wake the electronic heater from standby mode.

97. The device of any one of the claims 83-96, wherein the device comprises a mouthpiece.

98. The method of claim 97, wherein the mouthpiece is integrated into the device.

99. The method of claim 97, wherein the mouthpiece is split such that half of the mouthpiece is removable.

100. The method of claim 99, wherein the removable portion of the mouthpiece conforms to the contour of the device.

101. A device for generating an inhalable aerosol comprising a single button interface configured to operate the device.

102. The device of claim 101,wherein the single button interface is configured to turn the device on, turn the device off, and wake the device from a sleep mode.

103. The device of claim 101 or 102, wherein the device comprises an electronic heater, and wherein the temperature of the electronic heater is fixed or user-selectable.

104. The device of claim 103, wherein the single button interface is configured to control a temperature selection of the electronic heater.

105. The device of claim 104, wherein the device comprises a visual indicator of the temperature selection, an audible indicator of the temperature selection and/or a vibration indicator of the temperature selection

106. The device of any one of the claims 101-105, wherein the device comprises an LED, and wherein pressing the single button interface for a duration of time or a number of presses causes the device to change the LED intensity.

107. The device of claim 106, wherein the device comprises a battery, and wherein pressing the single button interface for a duration of time or a number of presses causes the device to report the battery level by a change in LED intensity and/or LED blinking.

108. The device of any one of the claims 101-107, wherein the device comprises an accelerometer or a vibration sensor, and wherein the device is programmed to convert between three modes of operation based on the sensor, the three modes of operation comprising an on mode, a standby mode, and an off mode.

109. The device of claim 108, wherein the device is programmed to convert from the on mode to the standby mode based on a length of time, a lack of movement of the device, a position of the device, placement of the device in a charger, or a combination thereof.

110. The device of any one of claims 108-109, wherein the device is configured to convert from standby mode to on mode when the sensor detects movement of the device, movement of the device from a vertical position to a horizontal position, movement of the device from a horizontal position to a vertical position, movement indicating a user has picked up the device, removal of the device from a charger, touch by a user, puffing on the device by a user, pressing of a button on the device, or any combination thereof.

111. The device of any one of claims 108-110, wherein the device is configured to convert from off mode to on mode by a button on the device being pressed, by removal of the device from a charger, or by moving the device.

112. The device of any one of the claims 101-111, wherein pressing the single button interface for 1 second turns the device on, pressing the single button interface for 5 seconds disables a motion-based low power standby and automatic shut-down, and pressing the single button interface or a for longer than 10 seconds turns the device off.

113. The device of any one of the claims 101-112, wherein the device comprises a second button.

114. The device of claim 113, wherein the second button is configured to operate the device, turn the device on, turn the device off, wake the device from a sleep mode, control a temperature selection of the electronic heater, change the LED intensity, report a battery level, disable a motion-based low power standby, disable an automatic shut-down, or a combination thereof.

115. A device for generating an inhalable aerosol comprising:

g. a mouthpiece;

h. a mechanism to toggle the mouthpiece between a retracted and an extended position; and

i. a sensor configured to turn the device on based on the sensor's detection of the mouthpiece in the extended position, wherein the device generates an inhalable aerosol when it is on.

116. The device of claim 115, wherein the mechanism is a push-push mechanism.

117. The device of any one of claims 115-116, wherein the sensor is configured to turn the device off based on the sensor's detection of the mouthpiece in the retracted position.

118. The device of any one of claims 115-117, wherein the device comprises a magnet in the mouthpiece and the sensor comprises a reed switch or a hall effect sensor.

119. The device of claim 118, wherein the sensor is configured to detect when the mouthpiece is in the retracted position.

120. The device of any one of claims 115-119, wherein the device comprises a body.

121. The device of claim 120, wherein the mouthpiece in the retracted position is fully within the body.

122. The device of claim 120, wherein the mouthpiece in the retracted position is substantially within the body such that a portion of the mouthpiece extends beyond the end out of the body of the device.

123. The device of any one of claims 115-122, wherein the mouthpiece is integrated into the device.

124. A method for generating an inhalable aerosol comprising, providing a device comprising:

j. a mouthpiece;

k. a mechanism to toggle the mouthpiece between a retracted and an extended position; and

l. a sensor configured to turn the device on based on the sensor's detection of the position of the mouthpiece in the extended position, wherein the device generates an inhalable aerosol when the device is turned on.

125. The method of claim 124, wherein the mechanisms is a push-push mechanism.

126. The method of any one of claims 124-125, wherein the sensor is configured to turn the device off based on the sensor's detection of the mouthpiece in the retracted position.

127. The method of any one of claims 124-126, wherein the device comprises a magnet in the mouthpiece and the sensor comprises a reed switch or a hall effect sensor.

128. The method of claim 127, wherein the sensor is configured to detect when the mouthpiece is in the retracted position.

129. The method of any one of the claims 124-128, wherein the device comprises a body.

130. The method of claim 129, wherein the mouthpiece in the retracted position is fully within the body.

131. The method of claim 129, wherein the mouthpiece in the retracted position is substantially within the body such that a portion of the mouthpiece extends beyond the end of the body of the device.

132. The method of any one of the claims 124-131, wherein the mouthpiece is integrated into the device.

CLAIMS

1. A device (600) for generating an inhalable aerosol comprising:

a. a body;

b. an aerosol generator in the body comprising a vaporization chamber, wherein the aerosol generator is configured to generate an inhalable aerosol from a vaporisable material in the vaporisation chamber wherein such inhalable aerosol is deliverable to a user; and

c. a lid (676) removably coupled to the body of the device (600), wherein the lid (676) is configured to cover the vaporisation chamber;

characterised in that the device (600) further comprises a magnetic hinge about which a first side of the lid (676) can swivel away from the body of the device (600) into an open position when a force is exerted on a second side of the lid (676) in an opposite direction toward the body of the device, and the lid (676) can be removed entirely by overcoming the magnetic force of the hinge.

2. The device of claim 1, wherein the hinge comprises two magnets in the lid (676) and two magnets correspondingly placed in the body of the device (600) so as to form the hinge around which the lid (676) swivels.

3. The device of claim 1 or 2, wherein removal of the lid (676) from the body of the device (600) allows access to the vaporization chamber.

4. The device of any preceding claim, wherein the lid comprises a magnetic attachment or snap attachment configured to maintain the lid (676) in the closed position and/or prevent accidental opening of the lid (676).

5. The device of any preceding claim, wherein the lid (676) is recessed into the body of the device (600).

6. The device of any preceding claim, wherein the vaporization chamber is configured to accept the vaporizable material directly without placing the vaporizable material in a cartridge.

7. The device of any one of claims 1 to 5, wherein the vaporization chamber is configured to accept a cartridge containing the vaporizable material.

8. The device of any preceding claim, wherein an underside of the lid (676) is chamfered.