CLAIMS

1. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus, which is to provide one or more than one of external tubes (101) suspendedly installed and capable of performing temperature equalizing operation with an external gaseous environment or a liquid or solid environment which is manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body, the interior of the external tube (101) is provided with an inner tube (103), the inner diameter of the external tube (101) is larger than the outer diameter of the inner tube (103), the space defined by the diameter differentiation is formed as a heat transfer fluid path, the distal end of the external tube (101) is sealed, the distal end of the inner tube (103) is shorter than the distal end of the external tube (101) or preformed with fluid holes, the distal ends of both tubes are formed with a flow returning segment allowing the heat transfer fluid to be returned;

The front tube port of the external tube (101) and the front tube port of the inner tube (103) allow the heat transfer fluid passing an electric energy application device assembly (108) and/or a heat dissipater thereof to be transferred, wherein one of the tube ports allows the heat transfer fluid to be transferred for passing the electric energy application device assembly (108) and/or the heat dissipater thereof, and the other tube port allows the heat transfer fluid which already passed the electric energy application device assembly (108) and/or the heat dissipater thereof to be returned;

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common electric energy application device assembly (108),

or respectively leaded to a corresponding electric energy application device assembly (108), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

One or more than one of fluid pumps (105) are serially installed on the closed recycling heat transfer fluid path, the flowing direction thereof can be selected from one flowing direction or two flowing directions enabled to be switched or periodically changed;

The structure of the heat transfer fluid path formed between the mentioned electric energy application device assembly (108) and/or the heat dissipater thereof and the external tube (101) and the inner tube (103) includes one or more than one of followings:

(a) the interior of the electric energy application device assembly (108) is formed with one or more than one of heat transfer fluid paths connected in serial or in parallel to pass through, the fluid inlet port and the fluid outlet port are respectively communicated with the tube port of the external tube (101) and the tube port of the inner tube (103);

(b) the heat dissipater installed in the electric energy application device assembly (108) is formed with one or more than one of heat transfer fluid paths connected in parallel to pass through, the fluid inlet port and the fluid outlet port are respectively communicated with the tube port of the external tube (101) and the tube port of the inner tube (103);

(c) one or more than one of heat transfer fluid paths formed in the interior of the electric energy application device assembly (108) are connected in serial or in parallel with the heat transfer fluid paths formed in the heat dissipater, the fluid inlet port and the fluid outlet port are respectively communicated with the tube port of the external tube (101) and the tube port of the inner tube (103);

(d) the electric energy application device assembly (108) is formed with two or more than two of heat transfer fluid paths

connected through external tubes so as to form the fluid inlet port and the fluid outlet port respectively communicated with the tube port of the external tube (101) and the tube port of the inner tube (103), or the interior thereof is bent to the U-like shape or L-like shape, and the fluid inlet port and the flow outlet port at the same or different sides are respectively communicated with the tube port of the external tube (101) and the tube port of the inner tube (103);

(e) the exterior of the electric energy application device assembly (108) is installed with a sealed housing, thereby forming a space between the above two for allowing the heat transfer fluid to pass, the electric energy application device assembly (108) is formed with one or more than one of heat transfer fluid paths connected in serial or in parallel, one end thereof is formed with a heat transfer fluid inlet/outlet port which is leaded to the tube port of the inner tube (103), the tube port at the other end is leaded to the space formed between the housing and the electric energy application device assembly (108), and a heat transfer fluid connection port is formed on the sealed housing for being communicated with the tube port of the external tube (101);

(f) a sealed space allowing the heat transfer fluid to pass is formed between the electric energy application device assembly (108) and the heat dissipater thereof, and the exterior and the installed housing, the electric energy application device assembly (108) and/or the heat dissipater thereof is formed with one or more than one of heat transfer fluid paths connected in serial or in parallel, one end thereof is formed with a heat transfer fluid inlet/outlet port which is leaded to the tube port of the inner tube (103), the tube port at the other end is leaded to the space formed between the housing and the electric energy application device assembly (108) and/or the heat dissipater thereof, a heat transfer fluid inlet/outlet port is formed on the sealed housing for being communicated with the tube port of the external tube (101);

(g) a sealed housing is jointly formed through the exterior of the electric energy application device assembly (108) and/or the heat dissipater thereof and the matched housing, the interior of the electric energy application device assembly (108) and/or the heat dissipater thereof and the matched housing is formed with a space allowing the heat transfer fluid to pass and leaded to the tube port of the external tube (101), the electric energy application device assembly (108) and/or the heat dissipater thereof is formed with one or more than one of heat transfer fluid paths connected in serial or in parallel, one end thereof is formed with a heat transfer fluid connection port which is leaded to the tube port of the inner tube (103), the tube port at the other end is leaded to the space formed between the housing and the electric energy application device assembly (108) and/or the heat dissipater thereof, a heat transfer fluid connection port is formed on the sealed housing for being communicated with the tube port of the external tube (101);

The gaseous or liquid heat transfer fluid pumped by the fluid pump (105) passes the external tube (101) of the closed recycling heat transfer fluid path and the exposed portion of the relevant structure, thereby enabling to perform temperature equalizing operation with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump (105) can be further installed;

The mentioned electric energy application device assembly (108) includes an illumination device utilizing electric energy being converted into photo energy, e.g. an illumination device adopting LED and/or a photovoltaic, e.g. a solar panel and/or a wind power generator and/or a transformer and/or an electric driven motor, and/or a heat discharging device used for discharging heat to the exterior or an electric heater or air warmer or heat pump having the heat discharging device, and/or a cold discharging device used for discharging cold to the exterior or an air conditioner having the cold discharging device, and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the electric energy application device assembly (108).

2. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein mainly consists:

-- external tube (101): constituted by one or more than one of hollow tube members with materials having mechanical strength, the tube body is divided into a front tube body, a mid tube body and a distal tube body, wherein:

The front tube body is mainly served to be installed with the electric energy application device assembly (108);

The mid tube body is served to provide a support function and to transfer the thermal energy between the interior and the exterior of the tube;

The distal tube body is served to perform temperature equalizing operation with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

The external tube (101) includes being formed in round shape or

other geometric shapes, and being made of a material having mechanical strength and better heat conductivity or a material having heat insulation property; the mentioned external tube (101) can be optionally installed with heat transfer fins (2001) at the exterior thereof according to actual needs;

The mentioned mechanical structure between the external tube (101) and the electric energy application device assembly (108) includes one or more than one of geometrically extended structures in one dimension or two dimensions or three dimensions; as followings:

(a) formed in the linear structure;

(b) formed in the bending structure with vertical angle or certain non-vertical angle;

(c) formed in the U-shaped structure;

(d) formed in the swirl structure with one or more loops;

(e) formed in the spiral structure;

(f) formed in the wavelike bending structure oriented towards up/down or left/right;

-- inner tube (103): constituted by a tube member having an outer diameter smaller than the inner diameter of the external tube (101) and made of a hard material, e.g. metal material, or a flexible material or a soft material, e.g. plastic, or a fabric or other materials having similar properties, the inner tube (103) is formed in a linear or bended or curved shaped or can be freely deformed if being made of the flexible material or the soft material thereby being enabled to be installed in the external tube (101) without affecting the smoothness of the heat transfer fluid path, the front portion thereof is leaded to the heat transfer fluid path of the electric energy application device assembly (108) or the heat dissipater thereof installed at the front portion of the external tube (101), the distal portion thereof is leaded to the mid portion or extended to the distal portion of the external tube (101), a diameter

differentiation is formed between the outer diameter of the inner tube (103) and the inner diameter of the external tube (101) thereby forming a reversed space which can be served as the heat transfer fluid path, so the fluid path allowing the heat transfer fluid to pass is formed through the inner tube and two tube ports at two ends of the inner tube and the reserved space formed between the outer diameter of the inner tube and the inner diameter of the outer tube, and selected locations defined on the mentioned fluid path can be serially installed with one or more than one of fluid pumps (105), the space defined between the front portion of the inner tube (103) and the front portion of the external tube (101) is served to allow the electric energy application device assembly (108) to be installed;

The inner tube (103) includes being formed in round shape or other geometric shapes, and being made of (a) a hard material or flexible material or soft material having heat insulation property, or (b) a hard material or flexible material or soft material having better heat conductivity, and the exterior of the tube member is provided with a heat insulation material, or (c) a hard material or flexible material or soft material having better heat conductivity, and the interior of the tube member is provided with a heat insulation material, or (d) a hard material or flexible material or soft material having better heat conductivity;

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common electric energy application device assembly (108), or respectively leaded to a corresponding electric energy application device assembly (108), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

-- fluid pump (105): constituted by a pump driven by an electric motor, and used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- electric energy application device assembly (108): served to be disposed on a fastening and supporting structural member (100) and constituted by an illumination device driven by electric energy, and/or a power generator driven by the kinetic power provided by external gaseous or liquid fluid, and/or a device driven by photo energy for generating electric energy and also generating thermal loss, and/or a transformer and/or an electric driven motor, and/or a heat discharging device used for discharging heat to the exterior or an electric heater or air warmer or heat pump having the heat discharging device, and/or a cold discharging device used for discharging cold to the exterior or an air conditioner having the cold discharging device, and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the electric energy application device assembly (108);

According to the heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus, with the pumping operation provided by the fluid pump (105), the gaseous or liquid heat transfer fluid is allowed to pass the heat transfer fluid outlet port at the front portion of the inner tube (103), then pass the heat transfer fluid path formed on the surface or the interior of the electric energy application device assembly (108) which generates thermal loss during operation and the heat dissipater thereof, then pass the heat transfer fluid path formed by the separated space defined between the interior of the external tube (101) and the inner tube (103) thereby being leaded to the distal tube body of the external tube (101) then returned from the heat transfer fluid inlet port at the

distal end of the inner tube (103), thereby forming a closed recycling heat transfer fluid loop, or the heat transfer fluid pumped by the fluid pump (105) can pass the mentioned paths in a reverse order and in the reverse flowing direction thereby forming a closed recycling heat transfer fluid loop having reverse order and reverse flowing direction, so through the heat transfer fluid passing the outer surface of the electric energy application device assembly (108) and the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump (105) can be further installed.

3. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claims 1 or 2, wherein the front tube body of the external tube (101) which allows the electric energy application device assembly (108) to be installed can be further installed with a housing (106) for protecting the electric energy application device assembly (108), and the space formed through the surface of the electric energy application device assembly (108) or the surface of the heat dissipater thereof can be served as a heat transfer fluid path (107) for transferring the heat transfer fluid; it mainly consists:

-- external tube (101): constituted by one or more than one of hollow

tube members with materials having mechanical strength, the tube body is divided into a front tube body, a mid tube body and a distal tube body, wherein:

The front tube body is mainly served to be installed with the electric energy application device assembly (108) and the housing (106);

The mid tube body is served to provide a support function and to transfer the thermal energy between the interior and the exterior of the tube;

The distal tube body is served to perform temperature equalizing operation with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

The external tube (101) includes being formed in round shape or other geometric shapes, and being made of a material having mechanical strength and better heat conductivity or a material having heat insulation property; the mentioned external tube (101) can be optionally installed with heat transfer fins (2001) at the exterior thereof according to actual needs;

-- inner tube (103): constituted by a tube member having an outer diameter smaller than the inner diameter of the external tube (101) and made of a hard material, e.g. metal material, or a flexible material or a soft material, e.g. plastic, or a fabric or other materials having similar properties, the inner tube (103) is formed in a linear or bended or curved shaped or can be freely deformed if being made of the flexible material or the soft material thereby being enabled to be installed in the external tube (101) without affecting the smoothness of the heat transfer fluid path, the front portion thereof is leaded to the heat transfer fluid path of the electric energy application device assembly (108) or the heat dissipater thereof installed at the front portion of the

external tube (101), the distal portion thereof is leaded to the mid portion or extended to the distal portion of the external tube (101), a diameter differentiation is formed between the outer diameter of the inner tube (103) and the inner diameter of the external tube (101) thereby forming a reversed space which can be served as the heat transfer fluid path, so the fluid path allowing the heat transfer fluid to pass is formed through the inner tube and two tube ports at two ends of the inner tube and the reserved space formed between the outer diameter of the inner tube and the inner diameter of the outer tube, and selected locations defined on the mentioned fluid path can be serially installed with one or more than one of fluid pumps (105), the space defined between the front portion of the inner tube (103) and the front portion of the external tube (101) is served to allow the electric energy application device assembly (108) to be installed;

The inner tube (103) includes being formed in round shape or other geometric shapes, and being made of (a) a hard material or flexible material or soft material having heat insulation property, or (b) a hard material or flexible material or soft material having better heat conductivity, and the exterior of the tube member is provided with a heat insulation material, or (c) a hard material or flexible material or soft material having better heat conductivity, and the interior of the tube member is provided with a heat insulation material, or (d) a hard material or flexible material or soft material having better heat conductivity;

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common electric energy application device assembly (108), or respectively leaded to a corresponding electric energy application

device assembly (108), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

-- fluid pump (105): constituted by a pump driven by an electric motor, and served for being used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- housing (106): made of a material having heat conductive or heat insulation property and used for covering the exterior of the electric energy application device assembly (108) so as to be sealed relative to the exterior, the heat transfer fluid is pumped by the fluid pump (105) for flowing from the heat transfer fluid outlet port at the front portion of the inner tube (103) to the space formed by the housing (106) and the electric energy application device assembly (108), then passing the heat transfer fluid path formed by the partitioned space defined by the inner diameter of the external tube (101) and the outer diameter of the inner tube (103) to be leaded towards the distal end of the external tube (101), then returning via the heat transfer fluid inlet port at the distal end of the inner tube (103), thereby forming a closed recycling heat transfer fluid loop, or forming a closed recycling heat transfer fluid loop having opposite flowing direction through changing the fluid flowing direction in which the fluid pump (105) is pumping;

-- electric energy application device assembly (108): served to be disposed on a fastening and supporting structural member (100) and constituted by an illumination device driven by electric energy, and/or a power generator driven by the kinetic power provided by external gaseous or liquid fluid, and/or a device driven by photo energy for generating electric energy and also generating thermal loss, and/or a transformer and/or an electric driven motor, and/or a heat discharging device used for discharging heat to the exterior or an electric heater or air warmer or heat pump having the heat discharging device, and/or a cold discharging device used for discharging cold to the exterior or an

air conditioner having the cold discharging device, and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the electric energy application device assembly (108);

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is optionally installed;

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the load is overheated, the operation of electric energy application device assembly (108) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed;

According to the heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus, with the pumping operation provided by the fluid pump (105), the gaseous or liquid heat transfer fluid is allowed to pass the heat transfer fluid outlet port at the front portion of the inner tube (103), then pass the heat transfer fluid path formed on the surface or the interior of the electric energy application device assembly (108) which generates thermal loss during operation and the heat dissipater (104) thereof, then pass the heat transfer fluid path formed between the interior of the external tube (101) and the inner tube (103) thereby being leaded to the distal end of the external tube (101) then returned from the heat transfer fluid inlet port at the distal end of the inner tube (103), thereby forming a closed recycling heat transfer fluid loop, or the heat transfer fluid pumped by the fluid pump (105) can pass the mentioned paths in a reverse order and in the reverse flowing direction

thereby forming a closed recycling heat transfer fluid loop having reverse order and reverse flowing direction, so through the heat transfer fluid passing the outer surface of the electric energy application device assembly (108) and the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump (105) can be further installed.

4. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the electric illuminating device (109) is adopted as the electric energy application device assembly (108) and/or the heat dissipater (104) thereof, and the main configuration includes one or more than one of the external tube (101), the inner tube (103), the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt the electric illuminating device (109) which generates thermal loss e.g. the illumination device adopting LED, and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the electric illuminating device (109);

When two or more than two of the external tubes (101) are

installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common electric illuminating device (109), or respectively leaded to a corresponding electric illuminating device (109), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path (1041) in the interior of the electric illuminating device (109) or the heat dissipater (104) thereof, and passes the heat transfer fluid path (107) formed between the interior of the external tube (101) and the inner tube (103), so through the heat transfer fluid passing the outer surface of the electric illuminating device (109) and/or the heat dissipater (104) thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump (105) can be further installed;

-- electric illuminating device (109): related to a moveable lamp such as a desk lamp, standing lamp, working lamp, illumination lamp or a lamp installed inside or outside of a building, constituted by an illuminating device utilizing electric energy being converted into photo

energy which is composed of various gaseous lamps, solid-state LED or OLED, and other peripheral devices e.g. a light-pervious member (1061) shall be provided according to actual needs, and further including a display screen, a billboard, a signal or a warning sign operated through the photo energy of the electric illuminating device (109);

-- fluid pump (105): constituted by a pump driven by an electric motor, and served for being used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is served to provide the input voltage, the current and the working temperature to the electric illuminating device (109) and to control the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, installed in the electric illuminating device (109) or the heat dissipater (104) thereof, so when the temperature is abnormal, the operation of electric illuminating device (109) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

5. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the photovoltaic (110) is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103), the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt the

photovoltaic (110) capable of converting photo energy into electric energy and generating thermal loss, and drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the photovoltaic (110);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common photovoltaic (110), or respectively leaded to a corresponding photovoltaic (110), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path (107) on the surface or the interior of the backside substrate of the photovoltaic (110) and/or the heat dissipater (104) thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the photovoltaic (110) and/or the heat dissipater (104) thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump

(105) can be further installed;

-- photovoltaic (110): constituted by various types of photovoltaic which receives lights for generating and outputting electric energy, e.g. a solar panel, and other relevant peripheral devices;

-- fluid pump (105): constituted by a pump driven by an electric motor, and served for being used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software;, the drive control circuit device (112) is served to control the input voltage, the current and the working temperature of the photovoltaic (110) and to control the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the photovoltaic (110) is abnormal, the operation of photovoltaic (110) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

6. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the wind power generating device (111) is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103) and the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt a wind power generator (222) of the wind power generating device (111), and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally

installed according to actual needs for assisting the operation of the wind power generating device (111);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common wind power generator (222), or respectively leaded to a corresponding wind power generator (222), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path in the interior of the wind power generator (222) of the wind power generating device (111) and/or the heat dissipater thereof, or further including the heat transfer fluid path in the drive control circuit device (112) and/or the heat dissipater thereof, and the closed heat transfer fluid path is jointly defined by the inner tube (103) and the partitioned space formed between the inner tube (103) and the interior of the external tube (101) thereby allowing the heat transfer fluid to flow therein, and the temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body through the exposed portion of the external tube (101);

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump

(105) can be further installed;

-- wind power generating device (111): constituted by wind turbine blades and the wind power generator (222) driven thereby and/or the drive control circuit device (112) and other relevant peripheral devices, wherein the wind power generator (222) and/or the drive control circuit device (112) are the main components receiving the heat dissipating operation;

-- fluid pump (105): constituted by a pump driven by a wind power driven rotating shaft or driven by electric energy, used for pumping the gaseous or liquid heat transfer fluid with respect to the controlled flowing direction and flowing rate of the fluid to be pumped;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software, used for controlling the operation of the system in the wind power generating device (111), including the output voltage, the current and the working temperature of the wind power generator (222), AC and DC converting, parallel controlling of AC output electric energy and public electricity system, and controlling the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the wind power generating device (111) is abnormal, the system operation of the wind power generator (222) and/or the wind power generating device (111) can be controlled directly or through the drive control circuit device (112), and controlling the fluid pump (105); the temperature protecting device (102) is optionally installed.

7. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as

claimed in claim 1, wherein the transformer (444) is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103) and the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt a transformer (444), and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the transformer (444);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common transformer (444), or respectively leaded to a corresponding transformer (444), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path (107) in the interior of the transformer (444) or the heat dissipater thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the transformer (444) and/or the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to

allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump (105) can be further installed;

-- transformer (444): provided with winding sets, magnetic conductive wirings and an enclosure, used for outputting and inputting single-phase or three-phase (including multiple-phase) AC electric energy, or inputting and outputting pulse electric energy; the transformer includes the self-coupled or separated-winding transformer having a dry structure containing gas or wet structure containing cooling fluid, the surface or the exterior of the transformer is formed with a pipeline heat dissipating structure allowing the fluid to pass, or formed with a fluid inlet/outlet port allowing the fluid to flow in or out the internal space of the transformer; the transformer is combined on the fastening and supporting structural member (100) through a transformer support rack (445);

-- fluid pump (105): constituted by a pump driven by electric energy, and used for pumping the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state, or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is used for controlling the output voltage, the current and the working temperature of the transformer (444), and controlling the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the transformer (444) is abnormal, the operation of transformer (444) and the fluid pump (105) can be

controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

8. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the motor (333) driven by electric energy is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103) and the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt an electric driven motor (333), and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the motor (333);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common motor (333), or respectively leaded to a corresponding motor (333), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path in the interior of the electric driven motor (333) or the heat dissipater thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the motor (333) and/or the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

When the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the fluid can take advantage of the physical effect of hot ascending/cold descending to allow the fluid having higher temperature to ascend in the inner tube and the fluid having lower temperature to descend in the interior of the external tube, thereby forming a flow recycling, and/or the fluid pump (105) can be further installed;

-- motor (333): constituted by a revolving electromechanical device driven by AC or DC electric energy for outputting rotational kinetic energy thereby driving the motor driven load (334);

-- fluid pump (105): constituted by a pump driven by the electric motor, used for pumping the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is used for controlling the input voltage, the current and the working temperature of the electric driven motor (333), and controlling the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the electric driven motor (333) is abnormal, the operation of motor (333) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

9. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the front portion of the external tube (101) and the inner tube (103) can be further formed with a manifold

structure for being installed with plural the same or different electric energy application device assemblies (108) which can share the mid tube body and the distal tube body, and the main configuration includes the mentioned external tube (101), the inner tube (103), the fluid pump (105), wherein the front portion of the external tube (101) is formed with a manifold structure allowing plural electric energy application device assemblies (108) to be installed thereon, and formed with a common mid tube body and distal tube body of the external tube (101), and same or different electric energy application device assemblies (108) are respectively installed on the manifold formed on the front portion of the external tube (101), and correspondingly installed with an inner tube (103) in the external tube (101);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path on the surface or in the interior of the individual electric energy application device assembly (108) or the heat dissipater (104) thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the electric energy application device assembly (108) or the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body.

10. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the structure formed through the external tube (101) and the inner tube (103) includes one and more than one of followings:

the external tube (101) and the inner tube (103) are arranged in coaxial or in a substantially parallel manner, the space defined by the

periphery of the inner tube (103) and between the external tube (101) and the inner tube (103) is served to allow the heat transfer fluid to pass, the inner tube (103) installed in the external tube (101) is shorter than the external tube (101), a length differentiation is formed between the distal end thereof and the sealed part at the distal portion of the external tube (101) and a supporter (1033) is provided for fastening, thereby forming the space allowing the heat transfer fluid to pass;

the external tube (101) and the inner tube (103) are installed in parallel, the distal end of the inner tube (103) inside the external tube (101) is combined with the sealed part at the bottom of distal portion of the external tube (101), and the distal end of the inner tube (103) or a transversal hole (1031) or a notch (1032) penetrating the inner tube at the distal portion of the inner tube (103) are forming the space allowing the heat transfer fluid to pass;

the external tube (101) and the inner tube (103) are eccentrically arranged, the distal end of the inner tube (103) installed inside the external tube (101) is shorter, a length differentiation is formed between the distal end thereof and the sealed part at the bottom of the distal portion of the external tube (101) thereby forming a space allowing the heat transfer fluid to pass;

the external tube (101) and two or more than two of the inner tubes (103) are installed in parallel, the distal portion of the inner tube (103) installed inside the external tube (101) is shorter, a length differentiation is formed between the distal portion thereof and the sealed part at the bottom of the distal portion of the external tube (101) thereby forming a space allowing the heat transfer fluid to pass;

the external tube (101) and the inner tube (103) are arranged in coaxial or in a substantially parallel manner, the space defined by the periphery of the inner tube (103) and between the external tube (101) and the inner tube (103) is served to allow the heat transfer fluid to

pass, the inner tube (103) installed inside the external tube (101) is shorter than the external tube (101), a length differentiation is formed between the distal portion thereof and the sealed part at the bottom of the distal portion of the external tube (101) thereby forming a space allowing the heat transfer fluid to pass, a spiral flow guiding structure (2003) is further installed between the external tube (101) and the inner tube (103) thereby increasing the length of the heat transfer fluid path formed between the external tube (101) and the inner tube (103).

11. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass is formed through the space defined by the heat dissipater (104) of the electric energy application device assembly (108) and the housing (106) and the heat transfer fluid path (1041) of the heat dissipater (104), and the main configuration is that a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass is formed through the space defined by the heat dissipater (104) of the electric energy application device assembly (108) and the housing (106) and the heat transfer fluid path (1041) of the heat dissipater (104).

12. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein at least two heat transfer fluid paths (1041) of the heat dissipater (104) installed in the electric energy application device assembly (108) are connected with a U-shaped connection tube (1042) in serial, so as to constitute a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass.

13. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein through the space defined by the electric

energy application device assembly (108) and the housing (106) and the heat transfer fluid path (1081) provide by the electric energy application device assembly (108), a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass is formed.

14. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein at least two of the heat transfer fluid paths (1081) provided by the electric energy application device assembly (108) are connected in serial with a U-shaped connection tube (1042), thereby to constitute a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass.

15. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein at least one heat transfer fluid path (1081) provided by the electric energy application device assembly (108) and at least one heat transfer fluid path (1041) provided by the heat dissipater (104) thereof are connected in serial with a U-shaped connection tube (1042), thereby to constitute a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass.

16. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the applicable fields are very flexible, wherein the heat-dissipating structure having internally recycling heat transfer fluid flowing in tubes and installed in the electric energy application device assembly (108) can be one or more than one, the exposed portion of the external tube (101) enables the temperature equalizing operation to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body, the surface of the external tube (101) can be

optionally installed with external heat guiding plates (201), the portion of the surface of the external tube (101) which is disposed in the interior of the electric energy application device assembly (108) can be optionally installed with inner heat guiding plates (203), and the installation and operating direction are not limited; the main configuration is that the heat-dissipating structure having internally recycling heat transfer fluid flowing in tubes is combined and vertically installed in electric energy application device assembly (108), the fastening means can be the conventional means such as utilizing a support rod or chain or hook or a suspending hook device for fastening a standing lamp or ceiling lamp or a standing fan or ceiling fan, thereby being able to be vertically installed at the top of a building or the top of a structural unit having internal space or a moveable object.

17. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 16, wherein the installation means includes one or more than one of followings:

the heat-dissipating structure having internally recycling heat transfer fluid flowing in tubes is combined and horizontally installed in the electric energy application device assembly (108), the fastening means can be the conventional means such as horizontally installing a window-type air conditioner on a wall or the window of a freezing cabinet of a transportation vehicle, thereby being able to be horizontally installed on the lateral side of a building or the lateral side of a structural unit or a moveable object;

single electric energy application device assembly (108) is vertically installed with two or more than two of the heat-dissipating structures having internally recycling heat transfer fluid flowing in tubes, the fastening means can be the conventional means such as utilizing a support rod or chain or hook or a suspending hook device

for fastening a standing lamp or ceiling lamp or a standing fan or ceiling fan, thereby being able to be vertically installed at the top of a building or the top of a structural unit having internal space or a moveable object;

single electric energy application device assembly (108) is horizontally installed with two or more than two of the heat-dissipating structures having internally recycling heat transfer fluid flowing in tubes, the fastening means can be the conventional means such as horizontally installing a window-type air conditioner on a wall or the window of a freezing cabinet of a transportation vehicle, thereby being able to be horizontally installed on the lateral side of a building or the lateral side of a structural unit or a moveable object.

18. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the internal of the heat-dissipating structure is further configured as a conical flow guiding body (1040) having thermal conductivity, so as to reduce the flowing resistance of the internal fluid, and the top thereof is suspended through a hanging chain.

19. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the internal of the heat-dissipating structure is further configured as a conical flow guiding body (1040) having thermal conductivity, so as to reduce the flowing resistance of the internal fluid, and the top thereof is suspended through a hanging tube and a brocket.

20. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the internal of the heat-dissipating structure is further configured as a conical flow guiding body (1040)

having thermal conductivity, so as to reduce the flowing resistance of the internal fluid, and the top thereof is fixed suspended through having an extended external tube to be combined with a fixed holder (555) with connecting and fastening function and heat-dissipating property.

CLAIMS

1. A heat-dissipating structure having one or more suspended external tubes and an internally recycled heat transfer fluid and application apparatus, the one or more external tubes (101) being configured to perform temperature equalization with an external gaseous environment or a liquid or solid environment, the interior of the one or more external tubes (101) is provided with an inner tube (103), the inner tube (103) is made of a hard material or a flexible material or a soft material, the inner diameter of the external tube (101) is larger than the outer diameter of the inner tube (103), the space defined by the diameter differentiation is formed as a heat transfer fluid path, the distal end of the external tube (101) is sealed, the distal end of the inner tube (103) is shorter than the distal end of the external tube (101) or preformed with fluid holes, the distal ends of both tubes are formed with a flow returning segment allowing the heat transfer fluid to be returned;

a front tube port of the external tube (101) and a front tube port of the inner tube (103) allow the heat transfer fluid to pass an electric energy application device assembly (108) and/or a heat dissipater, wherein one of the front tube ports allows the heat transfer fluid to be transferred to pass the electric energy application device assembly (108) and/or the heat dissipater, and the other front tube port allows the heat transfer fluid which has passed the electric energy application device assembly (108) and/or the heat dissipater to be returned;

when two or more external tubes (101) are installed, the fluid paths formed by each external tube (101) and inner tube (103) can be connected in serial or in parallel and lead to a common electric energy application device assembly (108), or respectively lead to corresponding electric energy application device assemblies (108), and can be designed to share a common fluid pump (105) or respectively installed with a corresponding fluid pump (105);

the structure of the heat transfer fluid path formed between the mentioned electric energy application device assembly (108) and/or the heat dissipater and the external tube (101) and the inner tube (103) includes one or more than one of followings:

(a) the interior of the electric energy application device assembly (108) is formed with one or more heat transfer fluid paths connected in serial or in parallel to pass through the fluid inlet

port and the fluid outlet port which are respectively coupled with the tube port of the external tube (101) and the tube port of the inner tube (103);

(b) the heat dissipater installed in the electric energy application device assembly (108) is formed with one or more heat transfer fluid paths connected in parallel to pass through the fluid inlet port and the fluid outlet port which are respectively coupled with the tube port of the external tube (101) and the tube port of the inner tube (103);

(c) one or more heat transfer fluid paths formed in the interior of the electric energy application device assembly (108) are connected in serial or in parallel with the heat transfer fluid paths formed in the heat dissipater, the fluid inlet port and the fluid outlet port are respectively coupled with the tube port of the external tube (101) and the tube port of the inner tube (103);

(d) the electric energy application device assembly (108) is formed with two or more heat transfer fluid paths connected through external tubes so as to form the fluid inlet port and the fluid outlet port respectively coupled with the tube port of the external tube (101) and the tube port of the inner tube (103), or the interior thereof is bent to a U-like shape or a L-like shape, and the fluid inlet port and the flow outlet port are respectively coupled with the tube port of the external tube (101) and the tube port of the inner tube (103);

(e) the exterior of the electric energy application device assembly (108) is installed with a sealed housing, thereby forming a space between the electric energy application device assembly (108) and the sealed housing for allowing the heat transfer fluid to pass, the electric energy application device assembly (108) is formed with one or more heat transfer fluid paths connected in serial or in parallel, one end thereof is formed with a heat transfer fluid inlet/outlet port which is coupled to the tube port of the inner tube (103), the tube port at the other end is coupled to the space formed between the housing and the electric energy application device assembly (108), and a heat transfer fluid connection port is formed on the sealed housing for being coupled with the tube port of the external tube (101);

(f) a sealed space allowing the heat transfer fluid to pass is formed between the electric energy application device assembly (108) and the heat dissipater, and the exterior and the installed housing, the electric energy application device assembly (108) and/or the heat

dissipater is formed with one or more heat transfer fluid paths connected in serial or in parallel, one end thereof is formed with a heat transfer fluid inlet/outlet port which is coupled to the tube port of the inner tube (103), the tube port at the other end is coupled to the space formed between the housing and the electric energy application device assembly (108) and/or the heat dissipater, a heat transfer fluid inlet/outlet port is formed on the sealed housing for being coupled with the tube port of the external tube (101);

(g) a sealed housing is jointly formed through the exterior of the electric energy application device assembly (108) and/or the heat dissipater and a matched housing, the interior of the electric energy application device assembly (108) and/or the heat dissipater and the matched housing is formed with a space allowing the heat transfer fluid to pass and lead to the tube port of the external tube (101), the electric energy application device assembly (108) and/or the heat dissipater is formed with one or more heat transfer fluid paths connected in serial or in parallel, one end thereof is formed with a heat transfer fluid connection port which is coupled to the tube port of the inner tube (103), the tube port at the other end is coupled to the space formed between the housing and the electric energy application device assembly (108) and/or the heat dissipater, a heat transfer fluid connection port is formed on the sealed housing for being coupled with the tube port of the external tube (101);

the heat transfer fluid pumped by the fluid pump (105) passes the external tube (101) of the closed recycling heat transfer fluid path and an exposed portion of the relevant structure, thereby performing temperature equalization with the external gaseous environment or the liquid or solid environment;

when the external tube (101) is formed as a vertically upward or obliquely upward or spirally upward structure, the heat transfer fluid can take advantage of the physical effect of hot ascending/cold descending to allow the heat transfer fluid at a higher temperature to ascend in the inner tube (103) and the heat transfer fluid at a lower temperature to descend in the interior of the external tube (103), thereby aiding the recycling flow;

the electric energy application device assembly (108) includes an illumination device utilizing electric energy being converted into photo energy such as. an illumination device adopting LED, and/or a photovoltaic such as a solar panel, and/or a wind power generator, and/or a transformer, and/or an electric driven motor, and/or a heat discharging device used

for discharging heat to the exterior or an electric heater or air warmer or heat pump having the heat discharging device, and/or a cold discharging device used for discharging cold to the exterior or an air conditioner having the cold discharging device;

characterised in that :

the material of the inner tube (103) has heat insulation property, or the exterior of the inner tube (103) is provided with a heat insulation material, or the interior of the inner tube (103) is provided with a heat insulation material; and

one or more fluid pumps (105) are serially installed on the closed recycling heat transfer fluid path, wherein the flow direction of the one or more fluid pumps (105) is selected from: a single flowing direction in which fluid is pumped from the electric energy application device assembly (108) and/or the heat dissipater thereof through inner tube (103) and then flows back via external tube (101), or switchable between two flowing directions, or periodically switching between two flowing directions.

2. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein mainly consists:

-- external tube (101): constituted by one or more than one of hollow tube members with materials having mechanical strength, the tube body is divided into a front tube body, a mid tube body and a distal tube body, wherein:

The front tube body is mainly served to be installed with the electric energy application device assembly (108);

The mid tube body is served to provide a support function and to transfer the thermal energy between the interior and the exterior of the tube;

The distal tube body is served to perform temperature equalizing operation with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

The external tube (101) includes being formed in round shape or other geometric shapes, and being made of a material having mechanical strength and better heat conductivity or a material having heat insulation property; the mentioned external tube (101) can be optionally installed with heat transfer fins (2001) at the exterior thereof according to actual needs;

The mentioned mechanical structure between the external tube (101) and the electric energy application device assembly (108) includes one or more than one of geometrically extended structures in one dimension or two dimensions or three dimensions; as followings:

(a) formed in the linear structure;

(b) formed in the bending structure with vertical angle or certain non-vertical angle;

(c) formed in the U-shaped structure;

(d) formed in the swirl structure with one or more loops;

(e) formed in the spiral structure;

(f) formed in the wavelike bending structure oriented towards up/down or left/right;

-- inner tube (103): constituted by a tube member having an outer diameter smaller than the inner diameter of the external tube (101) and made of a hard material, e.g. metal material, or a flexible material or a soft material, e.g. plastic, or a fabric or other materials having similar properties, the inner tube (103) is formed in a linear or bended or curved shaped or can be freely deformed if being made of the flexible material or the soft material thereby being enabled to be installed in the external tube (101) without affecting the smoothness of the heat transfer fluid path, the front portion thereof is leaded to the heat transfer fluid path of the electric energy application device assembly (108) or the heat dissipater thereof installed at the front portion of the external tube (101), the distal portion thereof is leaded to the mid portion or extended to the distal portion of the external tube (101), a diameter differentiation is formed between the outer diameter of the inner tube (103) and the inner diameter of the external tube (101) thereby forming a reversed space which can be served as the heat transfer fluid path, so the fluid path allowing the heat transfer fluid to pass is formed through the inner

tube and two tube ports at two ends of the inner tube and the reserved space formed between the outer diameter of the inner tube and the inner diameter of the outer tube, and selected locations defined on the mentioned fluid path can be serially installed with one or more than one of fluid pumps (105), the space defined between the front portion of the inner tube (103) and the front portion of the external tube (101) is served to allow the electric energy application device assembly (108) to be installed; The inner tube (103) includes being formed in round shape or other geometric shapes;

-- fluid pump (105): constituted by a pump driven by an electric motor, and used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate; the gaseous or liquid heat transfer fluid is allowed to pass the heat transfer fluid outlet port at the front portion of the inner tube (103), then pass the heat transfer fluid path formed on the surface or the interior of the electric energy application device assembly (108) which generates thermal loss during operation and the heat dissipater thereof, then pass the heat transfer fluid path formed by the separated space defined between the interior of the external tube (101) and the inner tube (103) thereby being leaded to the distal tube body of the external tube (101) then returned from the heat transfer fluid inlet port at the distal end of the inner tube (103), thereby forming a closed recycling heat transfer fluid loop, or the heat transfer fluid pumped by the fluid pump (105) can pass the mentioned paths in a reverse order and in the reverse flowing direction thereby forming a closed recycling heat transfer fluid loop having reverse order and reverse flowing direction, so through the heat transfer fluid passing the outer surface of the electric energy application device assembly (108) and the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body.

3. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claims 1 or 2, wherein the front tube body of the external tube (101) which allows the electric energy application device assembly (108) to be installed can be further installed with a housing (106) for protecting the electric energy application device assembly (108), and the space formed through the surface of the electric energy application device assembly (108) or the surface of the heat dissipater thereof

can be served as a heat transfer fluid path (107) for transferring the heat transfer fluid; it mainly consists:

-- external tube (101): constituted by one or more than one of hollow tube members with materials having mechanical strength, the tube body is divided into a front tube body, a mid tube body and a distal tube body, wherein:

The front tube body is mainly served to be installed with the electric energy application device assembly (108) and the housing (106);

The mid tube body is served to provide a support function and to transfer the thermal energy between the interior and the exterior of the tube;

The distal tube body is served to perform temperature equalizing operation with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

The external tube (101) includes being formed in round shape or other geometric shapes, and being made of a material having mechanical strength and better heat conductivity or a material having heat insulation property; the mentioned external tube (101) can be optionally installed with heat transfer fins (2001) at the exterior thereof according to actual needs;

-- inner tube (103): constituted by a tube member having an outer diameter smaller than the inner diameter of the external tube (101) and made of a hard material, e.g. metal material, or a flexible material or a soft material, e.g. plastic, or a fabric or other materials having similar properties, the inner tube (103) is formed in a linear or bended or curved shaped or can be freely deformed if being made of the flexible material or the soft material thereby being enabled to be installed in the external tube (101) without affecting the smoothness of the heat transfer fluid path, the front portion thereof is leaded to the heat transfer fluid path of the electric energy application device assembly (108) or the heat dissipater thereof installed at the front portion of the external tube (101), the distal portion thereof is leaded to the mid portion or extended to the distal portion of the external tube (101), a diameter differentiation is formed between the outer diameter of the inner tube (103) and the inner diameter of the external tube (101) thereby forming a reversed space which can be served as the heat transfer

fluid path, so the fluid path allowing the heat transfer fluid to pass is formed through the inner tube and two tube ports at two ends of the inner tube and the reserved space formed between the outer diameter of the inner tube and the inner diameter of the outer tube, and selected locations defined on the mentioned fluid path can be serially installed with one or more than one of fluid pumps (105), the space defined between the front portion of the inner tube (103) and the front portion of the external tube (101) is served to allow the electric energy application device assembly (108) to be installed; The inner tube (103) includes being formed in round shape or other geometric shapes, -- fluid pump (105): constituted by a pump driven by an electric motor, and served for being used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- housing (106): made of a material having heat conductive or heat insulation property and used for covering the exterior of the electric energy application device assembly (108) so as to be sealed relative to the exterior, the heat transfer fluid is pumped by the fluid pump (105) for flowing from the heat transfer fluid outlet port at the front portion of the inner tube (103) to the space formed by the housing (106) and the electric energy application device assembly (108), then passing the heat transfer fluid path formed by the partitioned space defined by the inner diameter of the external tube (101) and the outer diameter of the inner tube (103) to be leaded towards the distal end of the external tube (101), then returning via the heat transfer fluid inlet port at the distal end of the inner tube (103), thereby forming a closed recycling heat transfer fluid loop, or forming a closed recycling heat transfer fluid loop having opposite flowing direction through changing the fluid flowing direction in which the fluid pump (105) is pumping;

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the load is overheated, the operation of electric energy application device assembly (108) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed; According to the heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus, with the pumping operation provided by the fluid pump (105), the gaseous or liquid heat transfer fluid is allowed to pass the heat transfer fluid outlet port at the front portion of the inner tube (103), then pass the heat transfer fluid path formed on the surface or the interior of the electric

energy application device assembly (108) which generates thermal loss during operation and the heat dissipater (104) thereof, then pass the heat transfer fluid path formed between the interior of the external tube (101) and the inner tube (103) thereby being leaded to the distal end of the external tube (101) then returned from the heat transfer fluid inlet port at the distal end of the inner tube (103), thereby forming a closed recycling heat transfer fluid loop, or the heat transfer fluid pumped by the fluid pump (105) can pass the mentioned paths in a reverse order and in the reverse flowing direction thereby forming a closed recycling heat transfer fluid loop having reverse order and reverse flowing direction, so through the heat transfer fluid passing the outer surface of the electric energy application device assembly (108) and the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body.

4. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the electric illuminating device (109) is adopted as the electric energy application device assembly (108) and/or the heat dissipater (104) thereof, and the main configuration includes one or more than one of the external tube (101), the inner tube (103), the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt the electric illuminating device (109) which generates thermal loss e.g. the illumination device adopting LED, and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the electric illuminating device (109);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common electric illuminating device (109), or respectively leaded to a corresponding electric illuminating device (109), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path (1041) in the interior of the electric illuminating device (109) or the heat dissipater (104)

thereof, and passes the heat transfer fluid path (107) formed between the interior of the external tube (101) and the inner tube (103), so through the heat transfer fluid passing the outer surface of the electric illuminating device (109) and/or the heat dissipater (104) thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

-- electric illuminating device (109): related to a moveable lamp such as a desk lamp, standing lamp, working lamp, illumination lamp or a lamp installed inside or outside of a building, constituted by an illuminating device utilizing electric energy being converted into photo energy which is composed of various gaseous lamps, solid-state LED or OLED, and other peripheral devices e.g. a light-pervious member (1061) shall be provided according to actual needs, and further including a display screen, a billboard, a signal or a warning sign operated through the photo energy of the electric illuminating device (109);

-- fluid pump (105): constituted by a pump driven by an electric motor, and served for being used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is served to provide the input voltage, the current and the working temperature to the electric illuminating device (109) and to control the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, installed in the electric illuminating device (109) or the heat dissipater (104) thereof, so when the temperature is abnormal, the operation of electric illuminating device (109) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

5. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the photovoltaic (110) is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103), the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt the photovoltaic (110) capable of converting photo energy into electric energy and generating thermal loss, and drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the photovoltaic (110);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common photovoltaic (110), or respectively leaded to a corresponding photovoltaic (110), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path (107) on the surface or the interior of the backside substrate of the photovoltaic (110) and/or the heat dissipater (104) thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the photovoltaic (110) and/or the heat dissipater (104) thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

-- photovoltaic (110): constituted by various types of photovoltaic which receives lights for generating and outputting electric energy, e.g. a solar panel, and other relevant peripheral devices;

-- fluid pump (105): constituted by a pump driven by an electric motor, and served for being used to pump the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software;, the drive control circuit device (112) is served to control the input voltage, the current and the working temperature of the photovoltaic (110) and to control the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the photovoltaic (110) is abnormal, the operation of photovoltaic (110) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

6. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the wind power generating device (111) is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103) and the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt a wind power generator (222) of the wind power generating device (111), and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the wind power generating device (111);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common wind power generator (222), or respectively leaded to a corresponding wind power generator (222), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path in the interior of the wind power generator (222) of the wind power generating device (111) and/or the heat dissipater thereof, or further including the heat transfer fluid path in the drive control circuit device (112) and/or the heat dissipater thereof, and the closed heat

transfer fluid path is jointly defined by the inner tube (103) and the partitioned space formed between the inner tube (103) and the interior of the external tube (101) thereby allowing the heat transfer fluid to flow therein, and the temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body through the exposed portion of the external tube (101);

-- wind power generating device (111): constituted by wind turbine blades and the wind power generator (222) driven thereby and/or the drive control circuit device (112) and other relevant peripheral devices, wherein the wind power generator (222) and/or the drive control circuit device (112) are the main components receiving the heat dissipating operation;

-- fluid pump (105): constituted by a pump driven by a wind power driven rotating shaft or driven by electric energy, used for pumping the gaseous or liquid heat transfer fluid with respect to the controlled flowing direction and flowing rate of the fluid to be pumped;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software, used for controlling the operation of the system in the wind power generating device (111), including the output voltage, the current and the working temperature of the wind power generator (222), AC and DC converting, parallel controlling of AC output electric energy and public electricity system, and controlling the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the wind power generating device (111) is abnormal, the system operation of the wind power generator (222) and/or the wind power generating device (111) can be controlled directly or through the drive control circuit device (112), and controlling the fluid pump (105); the temperature protecting device (102) is optionally installed.

7. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the transformer (444) is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103) and the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt a transformer (444), and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the transformer (444);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common transformer (444), or respectively leaded to a corresponding transformer (444), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path (107) in the interior of the transformer (444) or the heat dissipater thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the transformer (444) and/or the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

-- transformer (444): provided with winding sets, magnetic conductive wirings and an enclosure, used for outputting and inputting single-phase or three-phase (including multiple-phase) AC electric energy, or inputting and outputting pulse electric energy; the transformer includes the self-coupled or separated-winding transformer having a dry structure containing gas or wet structure containing cooling fluid, the surface or the exterior of the transformer is formed with a pipeline heat dissipating structure allowing the fluid to pass, or formed with a fluid inlet/outlet port allowing the fluid to flow in or out the internal space of the transformer; the transformer is combined on the fastening and supporting structural member (100) through a transformer support rack (445);

-- fluid pump (105): constituted by a pump driven by electric energy, and used for pumping the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state, or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is used for controlling the output voltage, the current and the working temperature of the transformer (444), and controlling the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the transformer (444) is abnormal, the operation of transformer (444) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

8. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the motor (333) driven by electric energy is adopted as the electric energy application device assembly (108), and the main configuration includes one or more than one of the external tube (101), the inner tube (103) and the fluid pump (105), and the electric energy application device assembly (108) is designed to adopt an electric driven motor (333), and peripheral devices, drive control circuits devices, overload protecting devices and/or temperature protection devices are optionally installed according to actual needs for assisting the operation of the motor (333);

When two or more than two of the external tubes (101) are installed and individually provided with the inner tube (103) therein, the fluid paths formed by the individual external tube (101) and the inner tube (103) thereof can be connected in serial or in parallel and leaded to a common motor (333), or respectively leaded to a corresponding motor (333), and can be designed to share a common fluid pump (105) or respectively installed with a fluid pump (105);

Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path in the interior of the electric driven motor (333) or the heat dissipater thereof, and passes

the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the motor (333) and/or the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body;

-- motor (333): constituted by a revolving electromechanical device driven by AC or DC electric energy for outputting rotational kinetic energy thereby driving the motor driven load (334);

-- fluid pump (105): constituted by a pump driven by the electric motor, used for pumping the gaseous or liquid heat transfer fluid according to the controlled flowing direction and flowing rate;

-- drive control circuit device (112): constituted by solid-state or electromechanical components, or chips and relevant operation software; the drive control circuit device (112) is used for controlling the input voltage, the current and the working temperature of the electric driven motor (333), and controlling the operation timing of the fluid pump (105);

-- temperature protecting device (102): constituted by the electromechanical thermal actuated switch or thermal braking fuse, or solid-state temperature detecting unit or solid-state temperature switch unit, so when the temperature of the electric driven motor (333) is abnormal, the operation of motor (333) and the fluid pump (105) can be controlled directly or through the drive control circuit device (112); the temperature protecting device (102) is optionally installed.

9. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the front portion of the external tube (101) and the inner tube (103) can be further formed with a manifold structure for being installed with plural the same or different electric energy application device assemblies (108) which can share the mid tube body and the distal tube body, and the main configuration includes the mentioned external tube (101), the inner tube (103), the fluid pump (105), wherein the front portion of the external tube (101) is formed with a manifold structure allowing plural electric energy application device assemblies (108) to be installed thereon,

and formed with a common mid tube body and distal tube body of the external tube (101), and same or different electric energy application device assemblies (108) are respectively installed on the manifold formed on the front portion of the external tube (101), and correspondingly installed with an inner tube (103) in the external tube (101);Wherein: the heat transfer fluid pumped by the fluid pump (105) passes the heat transfer fluid path on the surface or in the interior of the individual electric energy application device assembly (108) or the heat dissipater (104) thereof, and passes the interior of the external tube (101), so through the heat transfer fluid passing the outer surface of the electric energy application device assembly (108) or the heat dissipater thereof, and/or the exposed portion of the external tube (101), temperature equalizing operation is enabled to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body.

10. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the structure formed through the external tube (101) and the inner tube (103) includes one and more than one of followings:

the external tube (101) and the inner tube (103) are arranged in coaxial or in a substantially parallel manner, the space defined by the periphery of the inner tube (103) and between the external tube (101) and the inner tube (103) is served to allow the heat transfer fluid to pass, the inner tube (103) installed in the external tube (101) is shorter than the external tube (101), a length differentiation is formed between the distal end thereof and the sealed part at the distal portion of the external tube (101) and a supporter (1033) is provided for fastening, thereby forming the space allowing the heat transfer fluid to pass;

the external tube (101) and the inner tube (103) are installed in parallel, the distal end of the inner tube (103) inside the external tube (101) is combined with the sealed part at the bottom of distal portion of the external tube (101), and the distal end of the inner tube (103) or a transversal hole (1031) or a notch (1032) penetrating the inner tube at the distal portion of the inner tube (103) are forming the space allowing the heat transfer fluid to pass;

the external tube (101) and the inner tube (103) are eccentrically arranged, the distal end of the inner tube (103) installed inside the external tube (101) is shorter, a length differentiation

is formed between the distal end thereof and the sealed part at the bottom of the distal portion of the external tube (101) thereby forming a space allowing the heat transfer fluid to pass;

the external tube (101) and two or more than two of the inner tubes (103) are installed in parallel, the distal portion of the inner tube (103) installed inside the external tube (101) is shorter, a length differentiation is formed between the distal portion thereof and the sealed part at the bottom of the distal portion of the external tube (101) thereby forming a space allowing the heat transfer fluid to pass;

the external tube (101) and the inner tube (103) are arranged in coaxial or in a substantially parallel manner, the space defined by the periphery of the inner tube (103) and between the external tube (101) and the inner tube (103) is served to allow the heat transfer fluid to pass, the inner tube (103) installed inside the external tube (101) is shorter than the external tube (101), a length differentiation is formed between the distal portion thereof and the sealed part at the bottom of the distal portion of the external tube (101) thereby forming a space allowing the heat transfer fluid to pass, a spiral flow guiding structure (2003) is further installed between the external tube (101) and the inner tube (103) thereby increasing the length of the heat transfer fluid path formed between the external tube (101) and the inner tube (103).

11. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass is formed through the space defined by the heat dissipater (104) of the electric energy application device assembly (108) and the housing (106) and the heat transfer fluid path (1041) of the heat dissipater (104), and the main configuration is that a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass is formed through the space defined by the heat dissipater (104) of the electric energy application device assembly (108) and the housing (106) and the heat transfer fluid path (1041) of the heat dissipater (104).

12. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein at least two heat transfer fluid paths (1041) of the heat dissipater (104) installed in the electric energy application device assembly (108) are connected with a U-shaped connection tube (1042) in

serial, so as to constitute a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass.

13. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein through the space defined by the electric energy application device assembly (108) and the housing (106) and the heat transfer fluid path (1081) provide by the electric energy application device assembly (108), a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass is formed.

14. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein at least two of the heat transfer fluid paths (1081) provided by the electric energy application device assembly (108) are connected in serial with a U-shaped connection tube (1042), thereby to constitute a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass.

15. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein at least one heat transfer fluid path (1081) provided by the electric energy application device assembly (108) and at least one heat transfer fluid path (1041) provided by the heat dissipater (104) thereof are connected in serial with a U-shaped connection tube (1042), thereby to constitute a heat transfer fluid path allowing the gaseous or liquid heat transfer fluid to pass.

16. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the applicable fields are very flexible, wherein the heat-dissipating structure having internally recycling heat transfer fluid flowing in tubes and installed in the electric energy application device assembly (108) can be one or more than one, the exposed portion of the external tube (101) enables the temperature equalizing operation to be performed with the external gaseous environment or the liquid or solid environment manually installed but not disposed in the stratum or liquid of the shallow ground natural thermal energy body, the surface of the external tube (101) can be optionally installed with external heat guiding plates (201), the portion of the surface of the external tube (101) which is disposed in the interior of the electric energy application device assembly (108) can be optionally installed with inner heat guiding plates (203), and the

installation and operating direction are not limited; the main configuration is that the heat-dissipating structure having internally recycling heat transfer fluid flowing in tubes is combined and vertically installed in electric energy application device assembly (108), the fastening means can be the conventional means such as utilizing a support rod or chain or hook or a suspending hook device for fastening a standing lamp or ceiling lamp or a standing fan or ceiling fan, thereby being able to be vertically installed at the top of a building or the top of a structural unit having internal space or a moveable object.

17. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 16, wherein the installation means includes one or more than one of followings:

the heat-dissipating structure having internally recycling heat transfer fluid flowing in tubes is combined and horizontally installed in the electric energy application device assembly (108), the fastening means can be the conventional means such as horizontally installing a window-type air conditioner on a wall or the window of a freezing cabinet of a transportation vehicle, thereby being able to be horizontally installed on the lateral side of a building or the lateral side of a structural unit or a moveable object;

single electric energy application device assembly (108) is vertically installed with two or more than two of the heat-dissipating structures having internally recycling heat transfer fluid flowing in tubes, the fastening means can be the conventional means such as utilizing a support rod or chain or hook or a suspending hook device for fastening a standing lamp or ceiling lamp or a standing fan or ceiling fan, thereby being able to be vertically installed at the top of a building or the top of a structural unit having internal space or a moveable object;

single electric energy application device assembly (108) is horizontally installed with two or more than two of the heat-dissipating structures having internally recycling heat transfer fluid flowing in tubes, the fastening means can be the conventional means such as horizontally installing a window-type air conditioner on a wall or the window of a freezing cabinet of a transportation vehicle, thereby being able to be horizontally installed on the lateral side of a building or the lateral side of a structural unit or a moveable object.

18. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the internal of the heat-dissipating structure is further configured as a conical flow guiding body (1040) having thermal conductivity, so as to reduce the flowing resistance of the internal fluid, and the top thereof is suspended through a hanging chain.

19. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the internal of the heat-dissipating structure is further configured as a conical flow guiding body (1040) having thermal conductivity, so as to reduce the flowing resistance of the internal fluid, and the top thereof is suspended through a hanging tube and a brocket.

20. A heat-dissipating structure having suspended external tube and internally recycling heat transfer fluid and application apparatus as claimed in claim 1, wherein the internal of the heat-dissipating structure is further configured as a conical flow guiding body (1040) having thermal conductivity, so as to reduce the flowing resistance of the internal fluid, and the top thereof is fixed suspended through having an extended external tube to be combined with a fixed holder (555) with connecting and fastening function and heat-dissipating property.