

**TEMPERATURE CONTROL SYSTEM HAVING
ADJACENTLY-INSTALLED TEMPERATURE EQUALIZER AND
HEAT TRANSFER FLUID AND APPLICATION DEVICE THEREOF**

5 BACKGROUND OF THE INVENTION

(a) Field of the Invention

The present invention provides a temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof, in which one or more adjacently-installed
10 temperature equalizer formed with a heat transferring adjacent surface is provided, a fluid channel thereof is utilized for allowing a heat transfer fluid to pass thereby enabling to perform temperature equalizing heat transfer with the external surface and/or the internal surface of an object (103) disposed to the adjacent surface.

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(b) Description of the Prior Art

A conventional electric motor, a power generator or a transformer would generate iron loss or copper loss due to the loading getting greater, so the temperature thereof is raised and the efficiency is lowered or the
20 machine itself may be damaged; due to the environmental temperature changes or the thermal loss caused by the machine being operated, a precision machine or a multi dimension measurement device would generate heat thereby being deformed because of thermal expansion and cold shrinkage, under the situation of inhomogeneous material or dissymmetrical
25 geometric shape, when the temperature distribution and the setting status is altered in a greater magnitude, the deformation would become more server and the precision is greatly affected; when the working temperature of a conventional semiconductor unit, a photovoltaic, a LED or a rechargeable battery or a liquid crystal display is overly high or overly low, the
30 performance would be deteriorated, if a solution of the ambient environment

being treated with constant temperature control for improving the performance to be adopted, the required equipment is very costly and consumes large amount of electric energy.

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SUMMARY OF THE INVENTION

The present invention provides a temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof, in which one or more adjacently-installed temperature equalizer formed with a heat transferring adjacent surface is provided, a fluid channel thereof is utilized for allowing a heat transfer fluid to pass thereby enabling to perform temperature equalizing heat transfer with the external surface and/or the internal surface of an object (103) disposed to the adjacent surface; the temperature controlling object (103) includes a rechargeable battery or a liquid crystal display, a semiconductor substrate, a heat dissipater, an air conditioning heat exchanger, or a machine housing of a precision machine or a multi dimension measurement device, or a selected location at the exterior and/or the interior of the machine housing, through pumping the external heat transfer fluid for cooling or heating, the adjacently-installed object (103) is enabled to be processed with the heat transfer for being cooled or heated, thereby preventing the working temperature of the semiconductor unit, the photovoltaic, the LED or the rechargeable battery or the liquid crystal display from being overly high or overly low and avoiding the performance deterioration; and/or when being applied in an electric motor, a power generator or a transformer with its loading getting greater or the environmental temperature getting higher, the overheating and performance deterioration and the burning damage can be prevented, when being applied in the precision machine or the multi dimension measurement device, the geometric shape of the machine housing can be ensured to be stable and the precision can also be ensured.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic view illustrating the adjacently-installed temperature equalizer being adjacently installed on an external surface of an object (103) according to the present invention.

5 FIG. 2 is a schematic view illustrating the adjacently-installed temperature equalizer being adjacently installed on an internal surface of the object (103) according to the present invention.

FIG. 3 is a perspective view illustrating the adjacently-installed temperature equalizer with its opened surface being provided with heat
10 insulating property according to the present invention.

FIG. 4 is a perspective view illustrating the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property according to the present invention.

FIG. 5 is a schematic view illustrating a temperature control system
15 being structured by a single adjacently-installed temperature equalizer (1000) being connected in series with a fluid valve (120) through a pipeline (1004) according to the present invention.

FIG. 6 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers
20 (1000a), (1000b) being connected in series through a pipeline (1004) then connected in series with a fluid valve (120) according to the present invention.

FIG. 7 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers
25 (1000a), (1000b) being respectively connected in series with a fluid valve through a pipeline (1004) then being connected in parallel according to the present invention.

FIG. 8 is a schematic view illustrating a temperature control system being structured by adjacently-installed temperature equalizers (1000a),
30 (1000b) being connected in series with a fluid valve (120b) through a

pipeline (1004) and adjacently-installed temperature equalizers (1000c), (1000d) being connected in series with a fluid valve (120a) through the pipeline (1004) then connected in parallel according to the present invention.

5 FIG. 9 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c) and fluid valves (120a), (120b) being connected in series through a pipeline (1004), and fluid valves (120c), (120d) being served to provide the bypass control according to the present invention.

10 FIG. 10 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) connected in series and in parallel through a pipeline (1004), a fluid valve (120a) being connected in series between the adjacently-installed temperature equalizer (1000a) and the
15 adjacently-installed temperature equalizer (1000b), a fluid valve (120c) being connected in series between the adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d), a communicating pipeline is installed between the fluid valve (120a) and the fluid valve (120c) for providing the bypass control according to the present
20 invention.

 FIG. 11 is a schematic view illustrating a temperature control system being structured by a single adjacently-installed temperature equalizer (1000) installed with a temperature sensor (TS120) being connected in series with a fluid valve (120) through a pipeline (1004) and controlled by an electric
25 control unit (ECU100) according to the present invention.

 FIG. 12 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) respectively installed with a temperature sensor (TS120a), (TS120b) being connected in series through a pipeline (1004) then
30 connected in series with a fluid valve (120) and controlled by an electric

control unit (ECU100) according to the present invention.

FIG. 13 is a schematic view illustrating a temperature control system being structured by adjacently-installed temperature equalizers (1000a), (1000b) being respectively installed with a temperature sensor (TS120a), (TS120b), wherein the adjacently-installed temperature equalizer (1000a) being connected in series with a fluid valve (120a) through a pipeline (1004), the adjacently-installed temperature equalizer (1000b) being connected in series with a fluid valve (120b) through the pipeline (1004) then being connected in parallel and controlled by an electric control unit (ECU100) according to the present invention.

FIG. 14 is a schematic view illustrating a temperature control system being structured by adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) being respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), (TS120d), wherein the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b) and a fluid valve (120b) being in sequence connected in series through a pipeline (1004), the adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d) and a fluid valve (120d) being in sequence connected in series through the pipeline (1004) then being connected in parallel and controlled by an electric control unit (ECU100) according to the present invention.

FIG. 15 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c) being respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), wherein the adjacently-installed temperature equalizer (1000a), a fluid valve (120a), the adjacently-installed temperature equalizer (1000b), a fluid valve (120b) and the adjacently-installed temperature equalizer (1000c) being in sequence connected in series through a pipeline (1004), and fluid valves (120c), (120d)

being connected in series then connected in parallel between the fluid inlet and outlet end, the fluid valve (120c) and the fluid valve (120a) being controlled by an electric control unit (ECU100) for being communicated for operation, the fluid valve (120d) and the fluid valve (120b) being controlled
5 by the electric control unit (ECU100) for being communicated for operation thereby providing the bypass control and controlled by the electric control unit (ECU100) according to the present invention.

FIG. 16 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers
10 (1000a), (1000b), (1000c), (1000d) being respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), (TS120d), the adjacently-installed temperature equalizer (1000a), a fluid valve (120a) and the adjacently-installed temperature equalizer (1000b) being in sequence connected in series through a pipeline (1004), the adjacently-installed
15 temperature equalizer (1000c), a fluid valve (120c) and the adjacently-installed temperature equalizer (1000d) being in sequence connected in series through the pipeline (1004), then being connected in parallel, a communicating pipeline being installed between the fluid valve (120a) and the fluid valve (120c), the fluid valves (120a), (120b) being
20 served to provide the bypass control and controlled by an electric control unit (ECU100) according to the present invention.

FIG. 17 is a schematic view illustrating a temperature control system being structured by single adjacently-installed temperature equalizer (1000) being connected in series with a temperature actuated fluid valve (TV120)
25 through a pipeline (1004) and controlled by the temperature actuated fluid valve (TV120) according to the present invention.

FIG. 18 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) being connected in series through a pipeline (1004) then
30 being connected in series with a temperature actuated fluid valve (TV120)

and controlled by the temperature actuated fluid valve (TV120) according to the present invention.

FIG. 19 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) being respectively connected in series with a temperature actuated fluid valve (TV120a), (TV120b) through a pipeline (1004) then being connected in parallel and controlled by the temperature actuated fluid valve (TV120a), (TV120b) according to the present invention.

FIG. 20 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) being connected in series through a pipeline (1004) then being connected in series with a temperature actuated fluid valve (TV120b), (TV120d) and controlled by the temperature actuated fluid valve (TV120b), (TV120d), and being connected in parallel according to the present invention.

FIG. 21 is a schematic view illustrating a temperature control system being structured by an adjacently-installed temperature equalizer (1000a), a temperature actuated fluid valve (TV120a), an adjacently-installed temperature equalizer (1000b), a temperature actuated fluid valve (TV120b) and an adjacently-installed temperature equalizer (1000c) being in sequence connected in series through a pipeline (1004), temperature actuated fluid valves (TV120c), (TV120d) being connected in series then connected in parallel between the fluid inlet end and the fluid outlet end of the pipeline (1004), a communicating pipeline being installed between the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c), a communicating pipeline being installed between the temperature actuated fluid valve (TV120b) and the temperature actuated fluid valve (TV120d) so as to provide the bypass control according to the present invention.

FIG. 22 is a schematic view illustrating a temperature control system

being structured by an adjacently-installed temperature equalizer (1000a), a temperature actuated fluid valve (TV120a) and an adjacently-installed temperature equalizer (1000b) being in sequence connected in series through a pipeline (1004), an adjacently-installed temperature equalizer (1000c), a temperature actuated fluid valve (TV120c) and an adjacently-installed temperature equalizer (1000d) being in sequence connected in series through the pipeline (1004), then being connected in parallel and leaded to the fluid inlet end and the fluid outlet end of the pipeline (1004), the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c) being served to provide the bypass control according to the present invention.

FIG. 23 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property being installed on a surface of a revolving electric machine (2000) according to the present invention.

FIG. 24 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property being installed on a surface of a tool machine body (3000) according to the present invention.

FIG. 25 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property being installed on a surface of a transformer (4000) according to the present invention.

FIG. 26 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property being installed on a surface of a revolving electric machine (2000) according to the present invention.

FIG. 27 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property being installed on a surface of a

tool machine body (3000) according to the present invention.

FIG. 28 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property being installed on a surface of a transformer (4000) according to the present invention.

DESCRIPTION OF MAIN COMPONENT SYMBOLS

- 103 : Object
- 120 、 120a 、 120b 、 120c 、 120d : Fluid valve
- 1000 、 1000a 、 1000b 、 1000c 、 1000d : Adjacently-installed temperature equalizer
- 1001 : Fluid channel
- 1002 、 1003 : Fluid inlet/outlet port
- 1004 : Pipeline
- 1005 : Thermal energy transferring surface
- 1010 : Heat insulation layer
- 1011 : Heat dissipating sheet
- 1012 、 1013 : Fluid pipe opening
- 2000 : Revolving electric machine
- 3000 : Tool machine body
- 4000 : Transformer
- 5000 : External surface of the object
- 5001 : Internal surface of the object
- TS120 、 TS120a 、 TS120b 、 TS120c 、 TS120d : Temperature sensor
- TV120 、 TV120a 、 TV120b 、 TV120c 、 TV120d : Temperature actuated fluid valve
- ECU100 : Electric control unit
- IP100 : Input control device
- PS100 : Power supply device

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A conventional electric motor, a power generator or a transformer would generate iron loss or copper loss due to the loading getting greater, so the temperature thereof is raised and the efficiency is lowered or the machine itself may be damaged; due to the environmental temperature changes or the thermal loss caused by the machine being operated, a precision machine or a multi dimension measurement device would generate heat thereby being deformed because of thermal expansion and cold shrinkage, under the situation of inhomogeneous material or dissymmetrical geometric shape, when the temperature distribution and the setting status is altered in a greater magnitude, the deformation would become more server and the precision is greatly affected; when the working temperature of a conventional semiconductor unit, a photovoltaic, a LED or a rechargeable battery or a liquid crystal display is overly high or overly low, the performance would be deteriorated, if a solution of the ambient environment being treated with constant temperature control for improving the performance to be adopted, the required equipment is very costly and consumes large amount of electric energy;

The present invention provides a temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof, in which one or more adjacently-installed temperature equalizer (1000) formed with a heat transferring adjacent surface is provided, a fluid channel (1001) thereof is utilized for allowing a heat transfer fluid to pass thereby enabling to perform temperature equalizing heat transfer with the external surface (5000) and/or the internal surface (5001) of an object disposed to the adjacent surface; the temperature controlling object (103) includes a rechargeable battery or a liquid crystal display, a semiconductor substrate, a heat dissipater, an air conditioning heat exchanger, or a machine housing of a precision machine or a multi dimension measurement device, or a selected location at the exterior and/or

the interior of the machine housing; through the pumping the external heat transfer fluid for cooling or heating and allowing the fluid to pass a fluid pipe opening (1012), the fluid channel (1001) and a fluid pipe opening (1013) at another end, the adjacently-installed object (103) is enabled to be
5 processed with the heat transfer for being cooled or heated, thereby preventing the working temperature of the semiconductor unit, the photovoltaic, the LED or the rechargeable battery or the liquid crystal display from being overly high or overly low and avoiding the performance deterioration; and/or when being applied in an electric motor, a power
10 generator or a transformer with its loading getting greater or the environmental temperature getting higher, the overheating and performance deterioration and the burning damage can be prevented, when being applied in the precision machine or the multi dimension measurement device, the geometric shape of the machine housing can be ensured to be stable and the
15 precision can also be ensured.

FIG. 1 is a schematic view illustrating the adjacently-installed temperature equalizer being adjacently installed on an external surface of an object (103) according to the present invention.

FIG. 2 is a schematic view illustrating the adjacently-installed
20 temperature equalizer being adjacently installed on an internal surface of the object (103) according to the present invention.

According to the temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof, the adjacently-installed temperature equalizer
25 adjacently installed on the object (103) is made of a heat conductive material, and composed of an adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property or an adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property, and fastened on a heat transferring
30 structural surface of the object (103) by a means of adhering, pressing,

soldering, riveting or screwing;

FIG. 3 is a perspective view illustrating the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property according to the present invention.

5 As shown in FIG. 3, the adjacently-installed temperature equalizer (1000) is made of a material having better heat transferring property, such as gold, silver, copper, aluminum, magnesium aluminum alloy, iron or ceramic, and formed with a fluid channel (1001), and a fluid inlet/outlet port (1002) and a fluid inlet/outlet port (1003) at two ends of the fluid channel (1001)
10 for being connected with a pipeline for allowing the gaseous, or liquid, or gaseous converting into liquid or liquid converting into gaseous fluid to be inputted or outputted; the adjacently-installed temperature equalizer (1000) is formed with a thermal energy transferring surface (1005), and beside the thermal energy transferring surface (1005), other opened surfaces are
15 respectively formed with a heat insulation layer (1010) for preventing or reducing the heat transfer of radiating, transferring and convecting to the exterior;

The means for adjacently installing the adjacently-installed temperature equalizer (1000) with single fluid channel (1001) on the object (103)
20 includes being fastened on the heat transferring structural surface of the object (103) by a means of adhering, pressing, soldering, riveting or screwing.

FIG. 4 is a perspective view illustrating the adjacently-installed temperature equalizer with its opened surface being provided with heat
25 transferring property according to the present invention.

As shown in FIG. 4, the adjacently-installed temperature equalizer (1000) is made of a material having better heat transferring property, such as gold, silver, copper, aluminum, magnesium aluminum alloy, iron or ceramic, and formed with a fluid channel (1001), and a fluid inlet/outlet port (1002)
30 and a fluid inlet/outlet port (1003) at two ends of the fluid channel (1001)

for being connected with a pipeline for allowing the gaseous, or liquid, or gaseous converting into liquid or liquid converting into gaseous fluid to be inputted or outputted; the fluid channel (1001) is formed with a thermal energy transferring surface (1005), and beside the thermal energy transferring surface (1005), other opened surfaces are respectively formed with the structure, such as a heat dissipating sheet (1011) in the wing sheet structure, for facilitating thermal energy to be transferred, convected or radiated to the exterior thereby transferring heat to the exterior;

The means for adjacently installing the adjacently-installed temperature equalizer (1000) with single fluid channel (1001) on the object (103) includes being fastened on the heat transferring structural surface of the object (103) by a means of adhering, pressing, soldering, riveting or screwing.

According to the temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof, the adjacently-installed temperature equalizer (1000) is adjacently installed on the heat transferring surface of the object (103) for transferring thermal energy to the object (103), the fluid passing the fluid channel (1001) of the adjacently-installed temperature equalizer (1000) can be further combined with a fluid amount control device and/or a flowing direction control device and/or a temperature sensor and/or an electric control unit and/or an input control device and/or a power supply device and/or a temperature actuated fluid valve, for controlling ON/OFF, fluid amount, flowing direction of the fluid passing the fluid channel (1001) of the adjacently-installed temperature equalizer (1000);

FIG. 5 to FIG. 10 illustrate the temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof being applied for structuring a temperature control system in which one or more than one adjacently-installed temperature equalizer installed on the heat transferring surface of the object

(103) being installed with one or more than one fluid valve;

FIG. 5 is a schematic view illustrating a temperature control system being structured by a single adjacently-installed temperature equalizer (1000) being connected in series with a fluid valve (120) through a pipeline (1004) according to the present invention.

As shown in FIG. 5, the temperature control system is structured by series connecting a single adjacently-installed temperature equalizer (1000) with the fluid valve (120) through the pipeline (1004), wherein the fluid valve (120) is directly operated by manual force or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizer (1000), thereby regulating the thermal energy transferred to the location where the object (103) is disposed.

FIG. 6 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) being connected in series through a pipeline (1004) then connected in series with a fluid valve (120) according to the present invention.

As shown in FIG. 6, the temperature control system is structured by series connecting the adjacently-installed temperature equalizers (1000a), (1000b) through the pipeline (1004) then further series connecting with the fluid valve (120); wherein the fluid valve (120) connected in series is directly operated by manual force or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b) connected in series, thereby regulating the thermal energy transferred to the location

where the object (103) is disposed.

FIG. 7 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) being respectively connected in series with a fluid valve through a pipeline (1004) then being connected in parallel according to the present invention.

As shown in FIG. 7, the temperature control system is structured by series connecting the adjacently-installed temperature equalizer (1000a) with the fluid valve (120a) through the pipeline (1004) and series connecting the adjacently-installed temperature equalizer (1000b) with the fluid valve (120b) through the pipeline (1004) then the two temperature equalizers respectively in two pipelines being connected in parallel; wherein the individual fluid valve (120a), (120b) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the corresponding adjacently-installed temperature equalizers (1000a), (1000b) connected in series, thereby regulating the thermal energy transferred to the location where the object (103) is disposed.

FIG. 8 is a schematic view illustrating a temperature control system being structured by adjacently-installed temperature equalizers (1000a), (1000b) being connected in series with a fluid valve (120b) through a pipeline (1004) and adjacently-installed temperature equalizers (1000c), (1000d) being connected in series with a fluid valve (120a) through the pipeline (1004) then connected in parallel according to the present invention.

As shown in FIG. 8, the temperature control system is structured by series connecting the adjacently-installed temperature equalizers (1000a), (1000b) with the fluid valve (120b) through the pipeline (1004) and series

connecting the adjacently-installed temperature equalizers (1000c), (1000d) being connected in series with the fluid valve (120a) through the pipeline (1004) then parallel connecting said temperature equalizers respectively in two pipelines; wherein the individual fluid valve (120b), (120d) is
5 respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a),
10 (1000b), (1000c), (1000d) installed at different locations of the object (103), thereby regulating the thermal energy transferred to the location where the object (103) is disposed.

FIG. 9 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers
15 (1000a), (1000b), (1000c) and fluid valves (120a), (120b) being connected in series through a pipeline (1004), and fluid valves (120c), (120d) being served to provide the bypass control according to the present invention.

As shown in FIG. 9, the temperature control system is structured by series connecting the adjacently-installed temperature equalizers (1000a),
20 (1000b), (1000c) and the fluid valves (120a), (120b) through the pipeline (1004), and connecting the series-connected fluid valves (120c), (120d) among two inlet/outlet ends of the pipeline (1004) and the fluid valve (120a) and the fluid valve (120b), wherein the fluid valve (120c) and the fluid valve (120d) being served to provide the bypass control; wherein the individual
25 fluid valve (120a), (120b), (120c), (120d) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the
30 adjacently-installed temperature equalizers (1000a), (1000b), (1000c)

installed at different locations of the object (103), thereby regulating the thermal energy transferred to the location where the object (103) is disposed.

FIG. 10 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) connected in series and in parallel through a pipeline (1004), a fluid valve (120a) being connected in series between the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b), a fluid valve (120c) being connected in series between the adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d), a communicating pipeline is installed between the fluid valve (120a) and the fluid valve (120c) for providing the bypass control according to the present invention.

As shown in FIG. 10, the temperature control system is structured by series-parallel connecting plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) through the pipeline (1004), series connecting the fluid valve (120a) between the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b), series connecting the fluid valve (120c) between the adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d), and a communicating pipeline is installed between the fluid valve (120a) and the fluid valve (120c) for providing bypass control; wherein the individual fluid valve (120a), (120c) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) installed at different locations of the object (103), thereby regulating the thermal energy transferred to the

location where the object (103) is disposed.

FIG. 11 to FIG. 16 illustrate the temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof being applied for structuring a temperature control system in which one or more than one adjacently-installed temperature equalizer installed on the heat transferring surface of the object (103) being installed with a temperature sensor, an electric control unit and a regulated fluid valve;

FIG. 11 is a schematic view illustrating a temperature control system being structured by a single adjacently-installed temperature equalizer (1000) installed with a temperature sensor (TS120) being connected in series with a fluid valve (120) through a pipeline (1004) and controlled by an electric control unit (ECU100) according to the present invention.

As shown in FIG. 11, the single adjacently-installed temperature equalizer (1000) installed with the temperature sensor (TS120) is connected in series with the fluid valve (120) through the pipeline (1004) and controlled by the electric control unit (ECU100), thereby structuring temperature control system; wherein the electric control unit (ECU100) receives the signal of an input control device (IP100) and the signal sensed by the temperature sensor (TS120) for controlling the fluid valve (120) to be ON/OFF or controlling the passing fluid amount, so as to control the fluid amount passing the adjacently-installed temperature equalizer (1000), thereby altering the thermal energy transferred to the object (103); wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted

signals or operative commands;

--A power supply device (PS100) is served to provide electric energy for the system operation.

FIG. 12 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) respectively installed with a temperature sensor (TS120a), (TS120b) being connected in series through a pipeline (1004) then connected in series with a fluid valve (120) and controlled by an electric control unit (ECU100) according to the present invention.

As shown in FIG. 12, the plural adjacently-installed temperature equalizers (1000a), (1000b) respectively installed with a temperature sensor (TS120a), (TS120b) are connected in series through the pipeline (1004) then connected in series with the fluid valve (120) and controlled by the electric control unit (ECU100), thereby structuring the temperature control system; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signal sensed by the temperature sensor (TS120a), (TS120b) for controlling the fluid valve (120) to be ON/OFF or controlling the passing fluid amount, so as to control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), thereby altering the thermal energy transferred to the object (103); wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

--The power supply device (PS100) is served to provide electric energy for the system operation.

FIG. 13 is a schematic view illustrating a temperature control system being structured by adjacently-installed temperature equalizers (1000a), (1000b) being respectively installed with a temperature sensor (TS120a), (TS120b), wherein the adjacently-installed temperature equalizer (1000a) being connected in series with a fluid valve (120a) through a pipeline (1004), the adjacently-installed temperature equalizer (1000b) being connected in series with a fluid valve (120b) through the pipeline (1004) then being connected in parallel and controlled by an electric control unit (ECU100) according to the present invention.

As shown in FIG. 13, the adjacently-installed temperature equalizers (1000a), (1000b) are respectively installed with the temperature sensor (TS120a), (TS120b); wherein the adjacently-installed temperature equalizer (1000a) is connected in series with the fluid valve (120a) through the pipeline (1004), the adjacently-installed temperature equalizer (1000b) is connected in series with the fluid valve (120b) through the pipeline (1004), and then the two temperature equalizers (1000a, 1000b) respectively one two pipelines are connected in parallel and controlled by the electric control unit (ECU100), thereby structuring the temperature control system; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signal sensed by the temperature sensor (TS120a), (TS120b) for respectively controlling the fluid valve (120a), (120b) to be ON/OFF or controlling the passing fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit

devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

5 --The power supply device (PS100) is served to provide electric energy for the system operation.

FIG. 14 is a schematic view illustrating a temperature control system being structured by adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) being respectively installed with a temperature
10 sensor (TS120a), (TS120b), (TS120c), (TS120d), wherein the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b) and a fluid valve (120b) being in sequence connected in series through a pipeline (1004), the adjacently-installed temperature equalizer (1000c) and the
15 adjacently-installed temperature equalizer (1000d) and a fluid valve (120d) being in sequence connected in series through the pipeline (1004) then being connected in parallel and controlled by an electric control unit (ECU100) according to the present invention.

As shown in FIG. 14, the adjacently-installed temperature equalizers
20 (1000a), (1000b), (1000c), (1000d) are respectively installed with the temperature sensor (TS120a), (TS120b), (TS120c), (TS120d); wherein the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b) and the fluid valve (120b) are in sequence connected in series through the pipeline (1004), the
25 adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d) and the fluid valve (120d) are in sequence connected in series through the pipeline (1004) then the temperature equalizers respectively on two pipelines are connected in parallel and controlled by the electric control unit (ECU100), thereby
30 structuring the temperature control system; wherein the electric control unit

(ECU100) receives the signal of the input control device (IP100) and the signal sensed by the temperature sensor (TS120a), (TS120b), (TS120c), (TS120d) for respectively controlling the fluid valve (120b), (120d) to be ON/OFF or controlling the fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

--The power supply device (PS100) is served to provide electric energy for the system operation.

FIG. 15 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c) being respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), wherein the adjacently-installed temperature equalizer (1000a), a fluid valve (120a), the adjacently-installed temperature equalizer (1000b), a fluid valve (120b) and the adjacently-installed temperature equalizer (1000c) being in sequence connected in series through a pipeline (1004), and fluid valves (120c), (120d) being connected in series then connected in parallel between the fluid inlet and outlet end, the fluid valve (120c) and the fluid valve (120a) being controlled by an electric control unit (ECU100) for being communicated for operation, the fluid valve (120d) and the fluid valve (120b) being controlled

by the electric control unit (ECU100) for being communicated for operation thereby providing the bypass control and controlled by the electric control unit (ECU100) according to the present invention.

As shown in FIG. 15, the plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c) are respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), wherein the adjacently-installed temperature equalizer (1000a), the fluid valve (120a), the adjacently-installed temperature equalizer (1000b), the fluid valve (120b) and the adjacently-installed temperature equalizer (1000c) are in sequence connected in series through the pipeline (1004), and the fluid valves (120c), (120d) are connected in series then connected in parallel between the fluid inlet and outlet end, the fluid valve (120c) and the fluid valve (120a) are controlled by the electric control unit (ECU100) for being communicated for operation, the fluid valve (120d) and the fluid valve (120b) are controlled by the electric control unit (ECU100) for being communicated for operation thereby the temperature control system providing the bypass control and controlled by the electric control unit (ECU100) is structured; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signals sensed by the temperature sensors (TS120a), (TS120b), (TS120c), (TS120d) for respectively controlling the fluid valves (120a), (120b), (120c), (120d) to be ON/OFF or controlling the passing fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit

devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

5 --The power supply device (PS100) is served to provide electric energy for the system operation.

FIG. 16 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) being respectively installed with a
10 temperature sensor (TS120a), (TS120b), (TS120c), (TS120d), the adjacently-installed temperature equalizer (1000a), a fluid valve (120a) and the adjacently-installed temperature equalizer (1000b) being in sequence connected in series through a pipeline (1004), the adjacently-installed temperature equalizer (1000c), a fluid valve (120c) and the
15 adjacently-installed temperature equalizer (1000d) being in sequence connected in series through the pipeline (1004), then being connected in parallel, a communicating pipeline being installed between the fluid valve (120a) and the fluid valve (120c), the fluid valves (120a), (120b) being served to provide the bypass control and controlled by an electric control
20 unit (ECU100) according to the present invention.

As shown in FIG. 16, the plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) are respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), (TS120d), the adjacently-installed temperature equalizer (1000a), the fluid valve (120a)
25 and the adjacently-installed temperature equalizer (1000b) are in sequence connected in series through the pipeline (1004), the adjacently-installed temperature equalizer (1000c), the fluid valve (120c) and the adjacently-installed temperature equalizer (1000d) are in sequence connected in series through the pipeline (1004), then being connected in
30 parallel, the communicating pipeline is installed between the fluid valve

(120a) and the fluid valve (120c), so that the fluid valves (120a), (120b) is served to provide the bypass control and controlled by the electric control unit (ECU100), thereby structuring the temperature control system; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signals sensed by the temperature sensors (TS120a), (TS120b), (TS120c), (TS120d) for respectively controlling the fluid valves (120a), (120b) to be ON/OFF or controlling the passing fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed;

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

--The power supply device (PS100) is served to provide electric energy for the system operation.

FIG. 17 to FIG. 22 illustrate the temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof being applied for structuring a temperature control system in which one or more than one adjacently-installed temperature equalizer installed on the heat transferring surface of the object (103) being installed with a temperature actuated fluid valve;

FIG. 17 is a schematic view illustrating a temperature control system being structured by single adjacently-installed temperature equalizer (1000) being connected in series with a temperature actuated fluid valve (TV120)

through a pipeline (1004) and controlled by the temperature actuated fluid valve (TV120) according to the present invention.

As shown in FIG. 17, the temperature actuated fluid valve (TV120) is a fluid valve enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, installed on the adjacently-installed temperature equalizer (1000) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the corresponding adjacently-installed temperature equalizer (1000) along with the sensed temperature, thereby regulating the thermal energy transferred by the adjacently-installed temperature equalizer (1000) to the location where the object (103) is disposed.

FIG. 18 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) being connected in series through a pipeline (1004) then being connected in series with a temperature actuated fluid valve (TV120) and controlled by the temperature actuated fluid valve (TV120) according to the present invention.

As shown in FIG. 18, the temperature actuated fluid valve (TV120) is a fluid valve enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, installed on the adjacently-installed temperature equalizers (1000a), (1000b) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the corresponding adjacently-installed temperature equalizer (1000a), (1000b) along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b) to the location where the object (103) is disposed.

FIG. 19 is a schematic view illustrating a temperature control system being structured by plural adjacently-installed temperature equalizers (1000a), (1000b) being respectively connected in series with a temperature

actuated fluid valve (TV120a), (TV120b) through a pipeline (1004) then being connected in parallel and controlled by the temperature actuated fluid valve (TV120a), (TV120b) according to the present invention.

As shown in FIG. 19, the temperature actuated fluid valve (TV120a) is
5 connected in series with the adjacently-installed temperature equalizer (1000a), the temperature actuated fluid valve (TV120b) is connected in series with the adjacently-installed temperature equalizer (1000b) then the two are connected in parallel, the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120b) are fluid valves enabled
10 to be ON/OFF or alter the passing fluid amount along with the sensed temperature, installed on the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the corresponding
15 adjacently-installed temperature equalizers (1000a), (1000b) along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b) to the location where the object (103) is disposed.

FIG. 20 is a schematic view illustrating a temperature control system
20 being structured by plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) being connected in series through a pipeline (1004) then being connected in series with a temperature actuated fluid valve (TV120b), (TV120d) and controlled by the temperature actuated fluid valve (TV120b), (TV120d), and being connected in parallel according
25 to the present invention.

As shown in FIG. 20, the temperature actuated fluid valve (TV120b) and the adjacently-installed temperature equalizers (1000a), (1000b) are connected in series, the temperature actuated fluid valve (TV120d) and the adjacently-installed temperature equalizers (1000c), (1000d) are connected
30 in series, then two lines are connected in parallel, the temperature actuated

fluid valve (TV120b) and the temperature actuated fluid valve (TV120d) are fluid valves enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, respectively installed on the adjacently-installed temperature equalizer (1000b) and the
5 adjacently-installed temperature equalizer (1000d) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b) connected in series and the adjacently-installed temperature equalizers (1000c), (1000d) connected in series along with the
10 sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b), (1000c), (1000d) to the location where the object (103) is disposed.

FIG. 21 is a schematic view illustrating a temperature control system being structured by an adjacently-installed temperature equalizer (1000a), a
15 temperature actuated fluid valve (TV120a), an adjacently-installed temperature equalizer (1000b), a temperature actuated fluid valve (TV120b) and an adjacently-installed temperature equalizer (1000c) being in sequence connected in series through a pipeline (1004), temperature actuated fluid valves (TV120c), (TV120d) being connected in series then connected in
20 parallel between the fluid inlet end and the fluid outlet end of the pipeline (1004), a communicating pipeline being installed between the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c), a communicating pipeline being installed between the temperature actuated fluid valve (TV120b) and the temperature actuated
25 fluid valve (TV120d) so as to provide the bypass control according to the present invention.

As shown in FIG. 21, the adjacently-installed temperature equalizer (1000a), the temperature actuated fluid valve (TV120a), the adjacently-installed temperature equalizer (1000b), the temperature actuated
30 fluid valve (TV120b) and the adjacently-installed temperature equalizer

(1000c) are in sequence connected in series through the pipeline (1004), the temperature actuated fluid valves (TV120c), (TV120d) are firstly connected in series then connected in parallel between the fluid inlet end and the fluid outlet end of the pipeline (1004), a communicating pipeline is installed
5 between the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c), and a communicating pipeline is installed between the temperature actuated fluid valve (TV120b) and the temperature actuated fluid valve (TV120d) so as to structure a temperature control system providing bypass control; wherein the temperature actuated fluid
10 valves (TV120a), (TV120b), (TV120c), (TV120d) are fluid valves enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, respectively installed on the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount
15 passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) connected in parallel along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b), (1000c) to the location where the object (103) is disposed.

20 FIG. 22 is a schematic view illustrating a temperature control system being structured by an adjacently-installed temperature equalizer (1000a), a temperature actuated fluid valve (TV120a) and an adjacently-installed temperature equalizer (1000b) being in sequence connected in series through a pipeline (1004), an adjacently-installed temperature equalizer (1000c), a
25 temperature actuated fluid valve (TV120c) and an adjacently-installed temperature equalizer (1000d) being in sequence connected in series through the pipeline (1004), then being connected in parallel and leaded to the fluid inlet end and the fluid outlet end of the pipeline (1004), the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve
30 (TV120c) being served to provide the bypass control according to the

present invention.

As shown in FIG. 22, the adjacently-installed temperature equalizer (1000a), the temperature actuated fluid valve (TV120a) and the adjacently-installed temperature equalizer (1000b) are in sequence
5 connected in series through the pipeline (1004), the adjacently-installed temperature equalizer (1000c), the temperature actuated fluid valve (TV120c) and the adjacently-installed temperature equalizer (1000d) are in sequence connected in series through the pipeline (1004), then the two lines being connected in parallel and leaded to the fluid inlet end and the fluid
10 outlet end of the pipeline (1004), the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c) are served to provide the bypass control, thereby structuring a temperature control system; wherein the temperature actuated fluid valves (TV120a), (TV120c) are fluid valves enabled to be ON/OFF or alter the passing fluid amount along with
15 the sensed temperature, respectively installed on the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) and/or the object (103), the function is to control the fluid amount passing the individual adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) along with the sensed temperature, thereby regulating the thermal
20 energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b), (1000c), (1000d) to the location where the object (103) is disposed.

According to the present invention, the temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and
25 application device thereof is able to be widely applied in various fields, for example: a rechargeable battery or a liquid crystal display, a semiconductor substrate, a heat dissipater, an air conditioning heat exchanger, or a machine housing of a precision machine or a multi dimension measurement device, or a selected location at the exterior and/or the interior of the machine body,
30 through pumping the external heat transfer fluid for cooling or heating, the

adjacently-installed object (103) is enabled to be processed with the heat transfer for being cooled or heated, thereby preventing the working temperature of the semiconductor unit, the photovoltaic, the LED or the rechargeable battery or the liquid crystal display from being overly high or
5 overly low and avoiding the performance deterioration; and/or when being applied in an electric motor, a power generator or a transformer with its loading getting greater or the environmental temperature getting higher, the overheating and performance deterioration and the burning damage can be prevented, when being applied in the precision machine or the multi
10 dimension measurement device, the geometric shape of the machine housing can be ensured to be stable and the precision can also be ensured; when the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property is adopted, the object (103) can be disposed on a surface of the adjacently-installed temperature equalizer with
15 its opened surface being provided with heat insulating property, thereby (a) heat transferring property being provided; or (b) a heat insulation layer or a heat insulation structure being provided for preventing or reducing the heat transfer of radiating, transferring and convecting.

FIG. 23 is a schematic view illustrating an application in which the
20 adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property being installed on a surface of a revolving electric machine (2000) according to the present invention.

As shown in FIG. 23, a part of the outer surface defined on the housing of the revolving electric machine (2000) is provided with great heat
25 conductive property and covered by the adjacently-installed temperature equalizer, the residual outer surface can be totally or partially provided with a heat insulation layer (1010).

FIG. 24 is a schematic view illustrating an application in which the
30 adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property being installed on a surface of a tool

machine body (3000) according to the present invention.

As shown in FIG. 24, a part of the outer surface defined on the housing of the tool machine body (3000) is provided with great heat conductive property and covered by the adjacently-installed temperature equalizer, the residual outer surface can be totally or partially provided with a heat insulation layer (1010).

FIG. 25 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property being installed on a surface of a transformer (4000) according to the present invention.

As shown in FIG. 25, a part of the outer surface defined on the housing of the transformer (4000) is provided with great heat conductive property and covered by the adjacently-installed temperature equalizer, the residual outer surface can be totally or partially provided with a heat insulation layer (1010).

FIG. 26 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property being installed on a surface of a revolving electric machine (2000) according to the present invention.

As shown in FIG. 26, a part of the outer surface defined on the housing of the revolving electric machine (2000) is provided with great heat conductive property and covered by the adjacently-installed temperature equalizer, the residual outer surface can be totally or partially formed with a structure having function of transferring, radiating or convecting heat to the exterior.

FIG. 27 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property being installed on a surface of a tool machine body (3000) according to the present invention.

As shown in FIG. 27, a part of the outer surface defined on the housing

of the tool machine body (3000) is provided with great heat conductive property and covered by the adjacently-installed temperature equalizer, the residual outer surface can be totally or partially formed with a structure having function of transferring, radiating or convecting heat to the exterior.

- 5 FIG. 28 is a schematic view illustrating an application in which the adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property being installed on a surface of a transformer (4000) according to the present invention.

- 10 As shown in FIG. 28, a part of the outer surface defined on the housing of the transformer (4000) is provided with great heat conductive property and covered by the adjacently-installed temperature equalizer, the residual outer surface can be totally or partially formed with a structure having function of transferring, radiating or convecting heat to the exterior.

15

CLAIMS

1. A temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof, in which one or more adjacently-installed temperature equalizer (1000) formed with a heat transferring adjacent surface is provided, a fluid channel (1001) thereof is utilized for allowing a heat transfer fluid to pass thereby enabling to perform temperature equalizing heat transfer with the external surface (5000) and/or the internal surface (5001) of an object disposed to the adjacent surface; the temperature controlling object (103) includes a rechargeable battery or a liquid crystal display, a semiconductor substrate, a heat dissipater, an air conditioning heat exchanger, or a machine housing of a precision machine or a multi dimension measurement device, or a selected location at the exterior and/or the interior of the machine housing; through the pumping the external heat transfer fluid for cooling or heating and allowing the fluid to pass a fluid pipe opening (1012), the fluid channel (1001) and a fluid pipe opening (1013) at another end, the adjacently-installed object (103) is enabled to be processed with the heat transfer for being cooled or heated, thereby preventing the working temperature of the semiconductor unit, the photovoltaic, the LED or the rechargeable battery or the liquid crystal display from being overly high or overly low and avoiding the performance deterioration; and/or when being applied in an electric motor, a power generator or a transformer with its loading getting greater or the environmental temperature getting higher, the overheating and performance deterioration and the burning damage can be prevented, when being applied in the precision machine or the multi dimension measurement device, the geometric shape of the machine housing can be ensured to be stable and the precision can also be ensured;

The adjacently-installed temperature equalizer (1000) is adjacently installed on the heat transferring surface of the object (103) for

transferring thermal energy to the object (103), the fluid passing the fluid channel (1001) of the adjacently-installed temperature equalizer (1000) can be further combined with a fluid amount control device and/or a flowing direction control device and/or a temperature sensor and/or an electric control unit and/or an input control device and/or a power supply device and/or a temperature actuated fluid valve, for controlling ON/OFF, fluid amount, flowing direction of the fluid passing the fluid channel (1001) of the adjacently-installed temperature equalizer (1000).

2. A temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof as claimed in claim 1, wherein the adjacently-installed temperature equalizer (1000) is an adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property, and the adjacently-installed temperature equalizer (1000) is made of a material having better heat transferring property, such as gold, silver, copper, aluminum, magnesium aluminum alloy, iron or ceramic, and formed with a fluid channel (1001), and a fluid inlet/outlet port (1002) and a fluid inlet/outlet port (1003) at two ends of the fluid channel (1001) for being connected with a pipeline for allowing the gaseous, or liquid, or gaseous converting into liquid or liquid converting into gaseous fluid to be inputted or outputted; the adjacently-installed temperature equalizer (1000) is formed with a thermal energy transferring surface (1005), and beside the thermal energy transferring surface (1005), other opened surfaces are respectively formed with a heat insulation layer (1010) for preventing or reducing the heat transfer of radiating, transferring and convecting to the exterior;

The means for adjacently installing the adjacently-installed temperature equalizer (1000) with single fluid channel (1001) on the object (103) includes being fastened on the heat transferring structural surface of the object (103) by a means of adhering, pressing, soldering,

riveting or screwing

3. A temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof as claimed in claim 1, wherein the adjacently-installed temperature equalizer (1000) is an adjacently-installed temperature equalizer with its opened surface being provided with heat transferring property, and the adjacently-installed temperature equalizer (1000) is made of a material having better heat transferring property, such as gold, silver, copper, aluminum, magnesium aluminum alloy, iron or ceramic, and formed with a fluid channel (1001), and a fluid inlet/outlet port (1002) and a fluid inlet/outlet port (1003) at two ends of the fluid channel (1001) for being connected with a pipeline for allowing the gaseous, or liquid, or gaseous converting into liquid or liquid converting into gaseous fluid to be inputted or outputted; the fluid channel (1001) is formed with a thermal energy transferring surface (1005), and beside the thermal energy transferring surface (1005), other opened surfaces are respectively formed with the structure, such as a heat dissipating sheet (1011) in the wing sheet structure, for facilitating thermal energy to be transferred, convected or radiated to the exterior thereby transferring heat to the exterior;

The means for adjacently installing the adjacently-installed temperature equalizer (1000) with single fluid channel (1001) on the object (103) includes being fastened on the heat transferring structural surface of the object (103) by a means of adhering, pressing, soldering, riveting or screwing.

4. A temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof as claimed in claim 1, wherein a temperature control system is structured, in which one or more than one adjacently-installed temperature equalizer installed on the heat transferring surface of the object (103) being

installed with one or more than one fluid valve, and the main constitution includes:

- 1) the temperature control system is structured by series connecting a single adjacently-installed temperature equalizer (1000) with the fluid valve (120) through the pipeline (1004), wherein the fluid valve (120) is directly operated by manual force or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizer (1000), thereby regulating the thermal energy transferred to the location where the object (103) is disposed; or
- 2) the temperature control system is structured by series connecting the adjacently-installed temperature equalizers (1000a), (1000b) through the pipeline (1004) then further series connecting with the fluid valve (120); wherein the fluid valve (120) connected in series is directly operated by manual force or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b) connected in series, thereby regulating the thermal energy transferred to the location where the object (103) is disposed; or
- 3) the temperature control system is structured by series connecting the adjacently-installed temperature equalizer (1000a) with the fluid valve (120a) through the pipeline (1004) and series connecting the adjacently-installed temperature equalizer (1000b) with the fluid valve (120b) through the pipeline (1004) then the two temperature equalizers respectively in two pipelines being connected in parallel;

wherein the individual fluid valve (120a), (120b) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the corresponding adjacently-installed temperature equalizers (1000a), (1000b) connected in series, thereby regulating the thermal energy transferred to the location where the object (103) is disposed; or

4) the temperature control system is structured by series connecting the adjacently-installed temperature equalizers (1000a), (1000b) with the fluid valve (120b) through the pipeline (1004) and series connecting the adjacently-installed temperature equalizers (1000c), (1000d) being connected in series with the fluid valve (120a) through the pipeline (1004) then parallel connecting said temperature equalizers respectively in two pipelines; wherein the individual fluid valve (120b), (120d) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) installed at different locations of the object (103), thereby regulating the thermal energy transferred to the location where the object (103) is disposed; or

5) the temperature control system is structured by series connecting the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) and the fluid valves (120a), (120b) through the pipeline (1004), and connecting the series-connected fluid valves (120c), (120d) among two inlet/outlet ends of the pipeline (1004) and the fluid valve (120a)

and the fluid valve (120b), wherein the fluid valve (120c) and the fluid valve (120d) being served to provide the bypass control; wherein the individual fluid valve (120a), (120b), (120c), (120d) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) installed at different locations of the object (103), thereby regulating the thermal energy transferred to the location where the object (103) is disposed; or

6) the temperature control system is structured by series-parallel connecting plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) through the pipeline (1004), series connecting the fluid valve (120a) between the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b), series connecting the fluid valve (120c) between the adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d), and a communicating pipeline is installed between the fluid valve (120a) and the fluid valve (120c) for providing bypass control; wherein the individual fluid valve (120a), (120c) is respectively and/or jointly operated by manual force directly or indirectly operated by mechanical force or electromagnetic force or air pressure force or hydraulic force controlled by manual force for controlling the fluid valve to be ON/OFF or controlling the fluid amount, so as to regulate the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) installed at different locations of the object (103), thereby regulating the thermal energy

transferred to the location where the object (103) is disposed.

5. A temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof as claimed in claim 1, wherein a temperature control system is structured, in which one or more than one adjacently-installed temperature equalizer installed on the heat transferring surface of the object (103) being installed with a temperature sensor, an electric control unit and a regulated fluid valve, and the means of constitution includes:

- 1) the single adjacently-installed temperature equalizer (1000) installed with the temperature sensor (TS120) is connected in series with the fluid valve (120) through the pipeline (1004) and controlled by the electric control unit (ECU100), thereby structuring temperature control system; wherein the electric control unit (ECU100) receives the signal of an input control device (IP100) and the signal sensed by the temperature sensor (TS120) for controlling the fluid valve (120) to be ON/OFF or controlling the passing fluid amount, so as to control the fluid amount passing the adjacently-installed temperature equalizer (1000), thereby altering the thermal energy transferred to the object (103); wherein
- The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;
- Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;
- Power supply device (PS100) is served to provide electric energy for the system operation; or
- 2) the plural adjacently-installed temperature equalizers (1000a), (1000b)

respectively installed with a temperature sensor (TS120a), (TS120b) are connected in series through the pipeline (1004) then connected in series with the fluid valve (120) and controlled by the electric control unit (ECU100), thereby structuring the temperature control system; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signal sensed by the temperature sensor (TS120a), (TS120b) for controlling the fluid valve (120) to be ON/OFF or controlling the passing fluid amount, so as to control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), thereby altering the thermal energy transferred to the object (103); wherein

- The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;
- Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;
- Power supply device (PS100) is served to provide electric energy for the system operation; or

3) the adjacently-installed temperature equalizers (1000a), (1000b) are respectively installed with the temperature sensor (TS120a), (TS120b); wherein the adjacently-installed temperature equalizer (1000a) is connected in series with the fluid valve (120a) through the pipeline (1004), the adjacently-installed temperature equalizer (1000b) is connected in series with the fluid valve (120b) through the pipeline (1004), and then the two temperature equalizers (1000a, 1000b) respectively one two pipelines are connected in parallel and controlled by the electric control unit (ECU100), thereby structuring the

temperature control system; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signal sensed by the temperature sensor (TS120a), (TS120b) for respectively controlling the fluid valve (120a), (120b) to be ON/OFF or controlling the passing fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

--Power supply device (PS100) is served to provide electric energy for the system operation; or

4) the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) are respectively installed with the temperature sensor (TS120a), (TS120b), (TS120c), (TS120d); wherein the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b) and the fluid valve (120b) are in sequence connected in series through the pipeline (1004), the adjacently-installed temperature equalizer (1000c) and the adjacently-installed temperature equalizer (1000d) and the fluid valve (120d) are in sequence connected in series through the pipeline (1004) then the temperature equalizers respectively on two pipelines are connected in parallel and controlled by the electric control unit

(ECU100), thereby structuring the temperature control system; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signal sensed by the temperature sensor (TS120a), (TS120b), (TS120c), (TS120d) for respectively controlling the fluid valve (120b), (120d) to be ON/OFF or controlling the fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

--The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;

--Power supply device (PS100) is served to provide electric energy for the system operation; or

5) the plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c) are respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), wherein the adjacently-installed temperature equalizer (1000a), the fluid valve (120a), the adjacently-installed temperature equalizer (1000b), the fluid valve (120b) and the adjacently-installed temperature equalizer (1000c) are in sequence connected in series through the pipeline (1004), and the fluid valves (120c), (120d) are connected in series then connected in parallel between the fluid inlet and outlet end, the fluid valve (120c) and the fluid valve (120a) are controlled by the electric control unit

(ECU100) for being communicated for operation, the fluid valve (120d) and the fluid valve (120b) are controlled by the electric control unit (ECU100) for being communicated for operation thereby the temperature control system providing the bypass control and controlled by the electric control unit (ECU100) is structured; wherein the electric control unit (ECU100) receives the signal of the input control device (IP100) and the signals sensed by the temperature sensors (TS120a), (TS120b), (TS120c), (TS120d) for respectively controlling the fluid valves (120a), (120b), (120c), (120d) to be ON/OFF or controlling the passing fluid amount, so as to respectively control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

- The electric control unit (ECU100): constituted by one or more than one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;
- Input control device (IP100): constituted by the human-machine interface device and subjected to receive manual input or receive inputted signals or operative commands;
- Power supply device (PS100) is served to provide electric energy for the system operation; or

6) the plural adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) are respectively installed with a temperature sensor (TS120a), (TS120b), (TS120c), (TS120d), the adjacently-installed temperature equalizer (1000a), the fluid valve (120a) and the adjacently-installed temperature equalizer (1000b) are

in sequence connected in series through the pipeline (1004), the adjacently-installed temperature equalizer (1000c), the fluid valve (120c) and the adjacently-installed temperature equalizer (1000d) are in sequence connected in series through the pipeline (1004), then
5 being connected in parallel, the communicating pipeline is installed between the fluid valve (120a) and the fluid valve (120c), so that the fluid valves (120a), (120b) is served to provide the bypass control and controlled by the electric control unit (ECU100), thereby structuring the temperature control system; wherein the electric control unit
10 (ECU100) receives the signal of the input control device (IP100) and the signals sensed by the temperature sensors (TS120a), (TS120b), (TS120c), (TS120d) for respectively controlling the fluid valves (120a), (120b) to be ON/OFF or controlling the passing fluid amount, so as to respectively control the fluid amount passing the
15 adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) thereby altering the thermal energy transferred by the individual adjacently-installed temperature equalizer to the location where the object (103) is disposed; wherein

--The electric control unit (ECU100): constituted by one or more than
20 one of followings, including: 1) electromechanical circuit device; 2) solid state electronic circuit device; 3) devices consisted of microprocessor, or single chip control unit, software, operation program and peripheral circuit devices;

--Input control device (IP100): constituted by the human-machine
25 interface device and subjected to receive manual input or receive inputted signals or operative commands;

--Power supply device (PS100) is served to provide electric energy for the system operation.

6. A temperature control system having adjacently-installed temperature
30 equalizer and heat transfer fluid and application device thereof as

claimed in claim 1, wherein a temperature control system is structured, in which one or more than one adjacently-installed temperature equalizer installed on the heat transferring surface of the object (103) being installed with a temperature actuated fluid valve, and the main constitutions include:

- 1) the temperature actuated fluid valve (TV120) is a fluid valve enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, installed on the adjacently-installed temperature equalizer (1000) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the corresponding adjacently-installed temperature equalizer (1000) along with the sensed temperature, thereby regulating the thermal energy transferred by the adjacently-installed temperature equalizer (1000) to the location where the object (103) is disposed; or
- 2) the temperature actuated fluid valve (TV120) is a fluid valve enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, installed on the adjacently-installed temperature equalizers (1000a), (1000b) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the corresponding adjacently-installed temperature equalizer (1000a), (1000b) along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b) to the location where the object (103) is disposed; or
- 3) the temperature actuated fluid valve (TV120a) is connected in series with the adjacently-installed temperature equalizer (1000a), the temperature actuated fluid valve (TV120b) is connected in series with the adjacently-installed temperature equalizer (1000b) then the two are connected in parallel, the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120b) are fluid

valves enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, installed on the adjacently-installed temperature equalizer (1000a) and the adjacently-installed temperature equalizer (1000b) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the corresponding adjacently-installed temperature equalizers (1000a), (1000b) along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b) to the location where the object (103) is disposed; or

4) the temperature actuated fluid valve (TV120b) and the adjacently-installed temperature equalizers (1000a), (1000b) are connected in series, the temperature actuated fluid valve (TV120d) and the adjacently-installed temperature equalizers (1000c), (1000d) are connected in series, then two lines are connected in parallel, the temperature actuated fluid valve (TV120b) and the temperature actuated fluid valve (TV120d) are fluid valves enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, respectively installed on the adjacently-installed temperature equalizer (1000b) and the adjacently-installed temperature equalizer (1000d) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b) connected in series and the adjacently-installed temperature equalizers (1000c), (1000d) connected in series along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b), (1000c), (1000d) to the location where the object (103) is disposed; or

5) the adjacently-installed temperature equalizer (1000a), the temperature actuated fluid valve (TV120a), the adjacently-installed

temperature equalizer (1000b), the temperature actuated fluid valve (TV120b) and the adjacently-installed temperature equalizer (1000c) are in sequence connected in series through the pipeline (1004), the temperature actuated fluid valves (TV120c), (TV120d) are firstly
 5 connected in series then connected in parallel between the fluid inlet end and the fluid outlet end of the pipeline (1004), a communicating pipeline is installed between the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c), and a communicating pipeline is installed between the temperature actuated
 10 fluid valve (TV120b) and the temperature actuated fluid valve (TV120d) so as to structure a temperature control system providing bypass control; wherein the temperature actuated fluid valves (TV120a), (TV120b), (TV120c), (TV120d) are fluid valves enabled to be ON/OFF or alter the passing fluid amount along with the sensed
 15 temperature, respectively installed on the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) and/or the object (103), the function of the individual temperature actuated fluid valve is to control the fluid amount passing the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) connected in
 20 parallel along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b), (1000c) to the location where the object (103) is disposed; or
 6) the plural adjacently-installed temperature equalizer (1000a), the
 25 temperature actuated fluid valve (TV120a) and the adjacently-installed temperature equalizer (1000b) are in sequence connected in series through the pipeline (1004), the adjacently-installed temperature equalizer (1000c), the temperature actuated fluid valve (TV120c) and the adjacently-installed
 30 temperature equalizer (1000d) are in sequence connected in series

through the pipeline (1004), then the two lines being connected in parallel and leaded to the fluid inlet end and the fluid outlet end of the pipeline (1004), the temperature actuated fluid valve (TV120a) and the temperature actuated fluid valve (TV120c) are served to provide the bypass control, thereby structuring a temperature control system; wherein the temperature actuated fluid valves (TV120a), (TV120c) are fluid valves enabled to be ON/OFF or alter the passing fluid amount along with the sensed temperature, respectively installed on the adjacently-installed temperature equalizers (1000a), (1000b), (1000c) and/or the object (103), the function is to control the fluid amount passing the individual adjacently-installed temperature equalizers (1000a), (1000b), (1000c), (1000d) along with the sensed temperature, thereby regulating the thermal energy transferred by the individual adjacently-installed temperature equalizer (1000a), (1000b), (1000c), (1000d) to the location where the object (103) is disposed.

7. A temperature control system having adjacently-installed temperature equalizer and heat transfer fluid and application device thereof as claimed in claim 1, wherein being widely applied in various fields, for example: a rechargeable battery or a liquid crystal display, a semiconductor substrate, a heat dissipater, an air conditioning heat exchanger, or a machine housing of a precision machine or a multi dimension measurement device, or a selected location at the exterior and/or the interior of the machine body, through pumping the external heat transfer fluid for cooling or heating, the adjacently-installed object (103) is enabled to be processed with the heat transfer for being cooled or heated, thereby preventing the working temperature of the semiconductor unit, the photovoltaic, the LED or the rechargeable battery or the liquid crystal display from being overly high or overly low and avoiding the performance deterioration; and/or when being applied in an electric motor, a power generator or a transformer with its loading getting greater

or the environmental temperature getting higher, the overheating and performance deterioration and the burning damage can be prevented, when being applied in the precision machine or the multi dimension measurement device, the geometric shape of the machine housing can be
5 ensured to be stable and the precision can also be ensured; when the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property is adopted, the object (103) can be disposed on a surface of the adjacently-installed temperature equalizer with its opened surface being provided with heat insulating property,
10 thereby (a) heat transferring property being provided; or (b) a heat insulation layer or a heat insulation structure being provided for preventing or reducing the heat transfer of radiating, transferring and convecting.

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