WASHING METHOD, WASHING DEVICE, AND NON-TRANSITORY COMPUTER-READABLE STORAGE MEDIUM

CROSS REFERENCE TO RELATED APPLICATION

[0001] The present application claims priority to Chinese patent application No. 202410832873.2, filed on June 25, 2024, the contents of which are incorporated herein by reference in its entirety for all purposes.

TECHNICAL FIELD

[0002] The present disclosure relates to the field of washing machines, and in particular to a washing method, a washing device, a storage medium and a program product.

BACKGROUND

[0003] Washing machines are the most commonly used household appliances in people's daily lives. Usually, when washing clothes, people wash dark-colored and light-colored clothes separately. If dark-colored clothes and light-colored clothes are washed together, the dark-colored clothes may experience color fading, and a dye of the dark-colored clothes dissolves in the water and stains the light-colored clothes.

SUMMARY

[0004] According to a first aspect of an embodiment of the present disclosure, there is provided a washing method, including:

[0005] when a washing machine is performing washing, turning on an anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release an oxidizing active substance;

[0006] controlling the washing machine to allow water-entering, and stopping water-entering when a level of water entering the washing machine reaches a first target water level; and

[0007] when a duration of stopping water-entering reaches a first set duration, controlling the washing machine to allow water-entering, and when the level of water

entering the washing machine reaches a second target water level, stopping water-entering and washing clothes in the washing machine, wherein the second target water level is higher than the first target water level.

[0008] According to a second aspect of an embodiment of the present disclosure, there is provided a washing device, including:

[0009] a first control module configured to, when a washing machine is performing washing, turn on an anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release an oxidizing active substance;

[0010] a second control module configured to control the washing machine to allow water-entering, and stop water-entering when a level of water entering the washing machine reaches a first target water level; and

[0011] a third control module configured to, when a duration of stopping water-entering reaches a first set duration, control the washing machine to allow water-entering, and when the level of water entering the washing machine reaches a second target water level, stop water-entering and wash clothes in the washing machine, wherein the second target water level is higher than the first target water level.

[0012] According to a third aspect of an embodiment of the present disclosure, there is provided a washing device, including:

[0013] a processor; and

[0014] a memory configured to store instructions executable by the processor;

[0015] wherein the processor is configured to execute the executable instructions to implement steps of the washing method according to any embodiment in the first aspect of the present disclosure.

[0016] According to a fourth aspect of an embodiment of the present disclosure, there is provided a computer-readable storage medium having computer program instructions stored thereon, wherein when the program instructions are executed by a processor, steps of the washing method provided in the first aspect are implemented.

[0017] According to a fifth aspect of an embodiment of the present disclosure, there is provided a computer program product, including a computer program, wherein when the computer program is executed by a processor, steps of the washing method provided in the

first aspect are implemented.

[0018] It is to be understood that the foregoing general description and the following detailed description are illustrative and explanatory only and are not restrictive of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments consistent with the present disclosure and, together with the specification, serve to explain the principles of the present disclosure.

[0020] FIG. 1 is a flowchart showing a washing method according to an example embodiment.

[0021] FIG. 2 is a flowchart showing a washing method according to an example embodiment.

[0022] FIG. 3 is a flowchart showing a washing method according to an example embodiment.

[0023] FIG. 4 is a flowchart showing a washing method according to an example embodiment.

[0024] FIG. 5 is a flowchart showing a washing method according to an example embodiment.

[0025] FIG. 6 is a flowchart showing a washing method according to an example embodiment.

[0026] FIG. 7 is a schematic diagram of a washing device 700 according to an example embodiment.

[0027] FIG. 8 is a schematic diagram of a washing device 800 according to an example embodiment.

DETAILED DESCRIPTION

[0028] Example embodiments will be described in detail herein, examples of which are shown in the accompanying drawings. When the following description refers to the drawings, the same numbers in different drawings represent the same or similar elements

unless otherwise indicated. The implementations described in the following example embodiments do not represent all implementations consistent with the present disclosure. Instead, they are merely examples of devices and methods consistent with some aspects of the present disclosure as detailed in the appended claims.

[0029] The implementations described in some embodiments of the present disclosure below do not represent all implementations consistent with the present disclosure. Instead, they are merely examples of devices and methods consistent with some aspects of the present disclosure as detailed in the appended claims.

[0030] It should be noted that all actions of obtaining signals, information or data in the present disclosure are carried out in compliance with relevant data protection laws and policies of the country where a device is located with the authorization given by the corresponding owner of the device.

[0031] FIG. 1 is a flowchart of a washing method according to an example embodiment. As shown in FIG. 1, the method includes the following steps:

[0032] In step S11, when a washing machine is performing washing, an anti-color bleeding device of the washing machine is turned on, and the anti-color bleeding device is configured to release an oxidizing active substance.

[0033] For example, in an embodiment of the present disclosure, the washing machine may be a drum washing machine, a pulsator washing machine, a washer-dryer, a variable frequency washing machine, etc., and embodiments of the present disclosure do not impose specific limitations on the type, capacity, and brand of the washing machine. In addition, the anti-color bleeding device is installed at the bottom of the washing machine, and the anti-color bleeding device may be an electrolyzing device or an electrochemical device. When the anti-color bleeding device is an electrolyzing device, the electrolyzing device is turned on, and the electrolyzing device can electrolyze the water in the washing machine to generate an oxidizing substance such as chloric acid or chlorine gas or the like. When the anti-color bleeding device is an electrochemical device, the electrochemical device is turned on, and the electrochemical device can release an oxidizing active substance (such as hydroxyl, ozone, etc.).

[0034] In step S12, the washing machine is controlled to allow water-entering (in

other words, the washing machine is controlled to let water go into the washing machine), and water-entering is stopped when a level of water entering the washing machine reaches a first target water level.

[0035] For example, when washing clothes with water containing a higher concentration of oxidizing substances, the oxidizing substances react more fully with the dye from the clothes that experience color fading, and the possibility of clothes staining each other is smaller. Therefore, in order to avoid the possibility of clothes staining each other due to the low concentration of active substances in water filled into the washing machine when the level of water entering the washing machine reaches the water level for washing, the embodiment control the washing machine to stop water-entering when the level of water entering the washing machine reaches the first target water level, but the anti-color bleeding device is still kept in the turned-on state. At this time, as the anti-color bleeding device continues to release the oxidizing substance, the concentration of the oxidizing active substance in water filled into the washing machine gradually increases.

[0036] Optionally, the first target water level is lower than or equal to the height of an outer wall of an inner drum of the washing machine.

[0037] As an example, in order to ensure that water filled into the washing machine contains sufficient oxidizing substance, the first target water level can be lower than or equal to the height of the outer wall of the inner drum of the washing machine. That is, when water filled into the washing machine reaches the height of the outer wall of the inner drum of the washing machine, water filled into the washing machine does not contact the clothes to be washed in the washing machine.

[0038] In step S13, when a duration of stopping water-entering reaches a first set duration, the washing machine is controlled to allow water-entering, and when the level of water entering the washing machine reaches a second target water level, water-entering is stopped, and clothes in the washing machine are washed. The second target water level is higher than the first target water level.

[0039] As an example, during the first set duration, the anti-color bleeding device is in the turned-on state, and the concentration of oxidizing substance in the water reaching the first target water level can be increased. When the duration of stopping water-entering

reaches the first set duration, the washing machine is controlled to continue water-entering, and the water-entering is stopped when the level of the water entering in the washing machine reaches the second target water level, and the clothes in the washing machine are washed. It can be understood that the washing procedure of the washing machine in different modes may be different during the washing of clothes, and the present disclosure does not limit the washing procedure. However, if the washing procedure includes a drainage procedure, the anti-color bleeding device of the washing machine can be turned off when the washing machine discharges water. If there is a procedure of continuing to perform water-entering after the drainage is completed, the anti-color bleeding device can be turned on again when water-entering is performed.

[0040] In the above technical solutions, when the washing machine is performing washing, the anti-color bleeding device of the washing machine is turned on, and the anti-color bleeding device is configured to release an oxidizing active substance. The washing machine is controlled to allow water-entering, and the water-entering is stopped when the level of water entering the washing machine reaches the first target water level. When the duration of stopping the water-entering reaches the first set duration, the washing machine is controlled to allow water-entering, and when the level of the water entering the washing machine reaches the second target water level, water-entering is stopped, and the clothes in the washing machine are washed. The second target water level is higher than the first target water level. By making the oxidizing active substance fully mixed into the water in the washing machine within the first set duration, the possibility of the clothes being stained with each other during the washing procedure can be reduced, thereby reducing the physical loss of a user.

[0041] FIG. 2 is a flowchart of a washing method according to an example embodiment. As shown in FIG. 2, step S13 includes the following steps:

[0042] In step S131, the second target water level is determined according to a washing mode of the washing machine.

[0043] For example, usually, a washing machine has a variety of different washing modes, such as standard washing, quick washing, large item washing, etc. In different washing modes, the rotation speed for washing, water level for washing, washing time, and

washing procedure of the washing machine may be different. Therefore, the second target water level can be determined according to the washing mode selected by the user. The water level for washing corresponding to each washing mode can be preset in a washing machine controller by a washing machine manufacturer. When the washing mode is determined, the water level for washing corresponding to the washing mode can be obtained, and the water level for washing can be used as the second target water level.

[0044] In step S132, when the duration of stopping water-entering reaches the first set duration, the washing machine is controlled to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, the water-entering is stopped, and the clothes in the washing machine are washed.

[0045] FIG. 3 is a flowchart of a washing method according to an example embodiment. As shown in FIG. 3, step S13 includes the following steps:

[0046] In step S133, the second target water level is determined according to the weight of the clothes in the washing machine.

[0047] For example, in order to save water consumption when washing clothes in the washing machine, a weight sensor can be added to the washing machine. When washing clothes, the water level for washing can be determined according to the weight of the clothes to be washed obtained by the weight sensor. A relationship between the weight of the clothes to be washed and the water level for washing can be preset in the washing machine controller by the washing machine manufacturer. When the weight of the clothes to be washed is determined, the water level for washing corresponding to the weight can be obtained, and the water level for washing can be used as the second target water level. For example, the relationship between the weight of the clothes to be washed and the water level for washing can be as shown in Table 1. When the weight of the clothes to be washed is 3.5 kg, the water level for washing is 60 L, that is, the second target water level is 60 L.

Table 1: Comparison table of weight of clothes and water level for washing

Weight of clothes (kg)	Water level for washing (L)
(0~1]kg	20L
(1~3]kg	40L
(3~5]kg	60L

[0048] In step S134, when the duration of stopping water-entering reaches the first set duration, the washing machine is controlled to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, water-entering is stopped, and the clothes in the washing machine are washed.

[0049] FIG. 4 is a flowchart of a washing method according to an example embodiment. As shown in FIG. 4, step S1 3 includes the following steps:

[0050] In step S135, the clothes in the washing machine are pre-washed at a first rotation speed.

[0051] As an example, when the level of water entering the washing machine reaches the second target water level, the washing machine can be controlled to stop water-entering, and the clothes in the washing machine can be pre-washed at a first rotation speed. The first rotation speed can be a relatively small value (such as 300 rotations/minute) preset in the washing machine by the manufacturer. This method can avoid a situation that the active substance in the water does not fully react with the dye from the clothes that experience color fading at the beginning of washing and thus light-colored clothes are stained. This method can also avoid staining light-colored clothes caused by entanglement between clothes due to excessive rotation speed.

[0052] In step S136, when a duration of pre-washing of the washing machine reaches a second set time, the anti-color bleeding device is turned off and water in the washing machine is controlled to be discharged.

[0053] As an example, when the duration of pre-washing of the washing machine reaches the second set time, the active substance in the water has fully reacted with the dye(s) from the clothes that experience color fading. At this time, in order to avoid serious color fading of the clothes, resulting in a certain amount of dye(s) in the fully reacted water, the anti-color bleeding device can be turned off and the washing machine can be controlled to discharge water to remove the water containing unreacted dye(s).

[0054] In step S137, after water in the washing machine is discharged, the anti-color bleeding device is turned on.

[0055] In step S138, the washing machine is controlled to allow water-entering, the

water-entering is stopped when the level of water entering the washing machine reaches the second target water level, and the clothes in the washing machine are washed at a second rotation speed. The second rotation speed is greater than the first rotation speed.

[0056] As an example, after the washing machine has finished draining, the anti-color bleeding device can be turned on again, water can be refilled into the washing machine, water-entering can be stopped when the level of water entering the washing machine reaches the second target water level, and the clothes in the washing machine are washed at the second speed. The second speed is greater than the first speed, and the second speed can be a speed for washing corresponding to the current washing mode of the washing machine. Therefore, before washing the clothes in the washing machine at the second rotation speed, the method can also include determining the second rotation speed of the washing machine according to the washing mode of the washing machine. For example, when the washing mode is standard washing, the second rotation speed is 600 rotations/minute.

[0057] FIG. 5 is a flowchart of a washing method according to an example embodiment. As shown in FIG. 5, step S11 includes the following steps:

[0058] In step S111, when the washing machine is performing washing and anti-color bleeding washing assistance for the washing machine is started, the anti-color bleeding device is turned on. The anti-color bleeding device is configured to release an oxidizing active substance.

[0059] As an example, in order to avoid a situation where the washed clothes do not stain each other when the user washes clothes but the anti-color bleeding device is turned on, a switch for anti-color bleeding washing assistance can be added to the washing machine. When the washing machine is performing washing and the switch for anti-color bleeding washing assistance is turned on, the anti-color bleeding device can be turned on and the above steps S12 and S13 are performed for washing. Otherwise, the washing machine washes clothes in a conventional manner.

[0060] FIG. 6 is a flowchart of a washing method according to an example embodiment. As shown in FIG. 6, the method further includes the following steps:

[0061] In step S14, after the washing machine completes washing, the anti-color bleeding device is turned off and water in the washing machine is controlled to be discharged.

[0062] For example, after the washing machine finishes washing, the anti-color bleeding device can be turned off and the washing machine can be controlled to discharge water so that the water in the washing machine can be drained. It is understandable that after water in the washing machine is completely discharged, the washing machine may still have other working procedures such as spinning, drying and so on.

[0063] In the above technical solutions, when the washing machine is performing washing, the anti-color bleeding device of the washing machine is turned on, and the anti-color bleeding device is configured to release the oxidizing active substance. The washing machine is controlled to allow water-entering, and the water-entering is stopped when the level of water entering the washing machine reaches the first target water level. When the duration of stopping water-entering reaches the first set duration, the washing machine is controlled to allow water-entering, and the water-entering is stopped when the level of water entering the washing machine reaches the second target water level, and the clothes in the washing machine are washed. The second target water level is higher than the first target water level. By making the oxidizing active substance fully mixed into the water in the washing machine within the first set duration, the possibility of the clothes being stained with each other during the washing procedure can be reduced, thereby reducing the physical loss of the user.

[0064] FIG. 7 is a schematic diagram of a washing device 700 according to an example embodiment. Referring to FIG. 7, the device includes: a first control module 710, a second control module 720 and a third control module 730.

[0065] The first control module 710 is configured to, when a washing machine is performing washing, turn on an anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release an oxidizing active substance.

[0066] The second control module 720 is configured to control the washing machine to allow water-entering, and stop water-entering when a level of water entering the washing machine reaches a first target water level.

[0067] The third control module 730 is configured to, when a duration of stopping water-entering reaches a first set duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches a second target

water level, stop water-entering and wash clothes in the washing machine, wherein the second target water level is higher than the first target water level.

[0068] Optionally, the third control module 730 includes: a first control sub-module and a second control sub-module;

[0069] the first control sub-module is configured to determine the second target water level according to a washing mode of the washing machine;

[0070] the second control sub-module is configured to, when the duration of stopping water-entering reaches the first set duration, control the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stop water-entering, and wash the clothes in the washing machine.

[0071] Optionally, the first control sub-module is further configured to determine the second target water level according to the weight of the clothes in the washing machine;

[0072] the second control sub-module is configured to, when the duration of stopping water-entering reaches the first set duration, control the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stop water-entering, and wash the clothes in the washing machine.

[0073] Optionally, the third control module 730 is configured to:

[0074] pre-wash the clothes in the washing machine at a first rotation speed;

[0075] when a duration of pre-washing of the washing machine reaches a second set duration, turn off the anti-color bleeding device and control water in the washing machine to be discharged;

[0076] after the water in the washing machine is discharged, turn on the anti-color bleeding device; and

[0077] control the washing machine to allow water-entering, stop water-entering when the level of water entering the washing machine reaches the second target water level, and wash the clothes in the washing machine at a second rotation speed, wherein the second rotation speed is greater than the first rotation speed.

[0078] Optionally, the first control module 710 is configured to, when the washing machine is performing washing and anti-color bleeding washing assistance for the washing machine is started, turn on the anti-color bleeding device, wherein the anti-color bleeding

device is configured to release the oxidizing active substance.

[0079] Optionally, the third control module 730 is further configured to, after the washing machine finishes washing, turn off the anti-color bleeding device and control water in the washing machine to be discharged.

[0080] Optionally, the first target water level is lower than or equal to the height of an outer wall of an inner drum of the washing machine.

[0081] Regarding the device in the above embodiments, the specific manner in which each module performs operations has been described in detail in the embodiments of the methods, and repeated descriptions will be omitted here.

[0082] In the above technical solutions, when the washing machine is performing washing, the anti-color bleeding device of the washing machine is turned on, and the anti-color bleeding device is used to release an oxidizing active substance. The washing machine is controlled to let water go into the washing machine, and the water-entering is stopped when the level of water entering the washing machine reaches the first target water level. When the duration of stopping water-entering reaches the first set duration, the washing machine is controlled to let water go into the washing machine, and the water-entering is stopped when the level of water entering the washing machine reaches the second target water level, and the clothes in the washing machine are washed, wherein the second target water level is higher than the first target water level. By making the oxidizing active substance fully mixed into the water in the washing machine within the first set duration, the possibility of the clothes being stained with each other during the washing procedure can be reduced, thereby reducing the physical loss of the user.

[0083] Further example embodiments are listed as follows.

[0084] Optionally, when the duration of stopping water-entering reaches the first set duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering includes:

[0085] determining the second target water level according to a washing mode of the washing machine; and

[0086] when the duration of stopping water-entering reaches the first set duration,

controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering, and washing the clothes in the washing machine.

[0087] Optionally, when the duration of stopping water-entering reaches the first set duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering includes:

[0088] determining the second target water level according to a weight of the clothes in the washing machine; and

[0089] when the duration of stopping water-entering reaches the first set duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering, and washing the clothes in the washing machine.

[0090] Optionally, washing the clothes in the washing machine includes:

[0091] pre-washing the clothes in the washing machine at a first rotation speed;

[0092] when a duration of pre-washing of the washing machine reaches a second set duration, turning off the anti-color bleeding device and controlling the washing machine to discharge water;

[0093] after the water in the washing machine is discharged, turning on the anti-color bleeding device; and

[0094] controlling the washing machine to allow water-entering, stopping water-entering when the level of water entering the washing machine reaches the second target water level, and washing the clothes in the washing machine at a second rotation speed, wherein the second rotation speed is greater than the first rotation speed.

[0095] Optionally, when the washing machine is performing washing, turning on the anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release the oxidizing active substance includes:

[0096] when the washing machine is performing washing and anti-color bleeding washing assistance for the washing machine is started, turning on the anti-color bleeding device, wherein the anti-color bleeding device is configured to release the oxidizing active

substance.

[0097] Optionally, the method further includes:

[0098] after the washing machine finishes washing, turning off the anti-color bleeding device and controlling the washing machine to discharge water.

[0099] Optionally, the first target water level is lower than or equal to a height of an outer wall of an inner drum of the washing machine.

[00100] The technical solutions provided by the embodiments of the present disclosure can have the following beneficial effects:

[00101] In the above technical solutions, when the washing machine is performing washing, an anti-color bleeding device of the washing machine is turned on, and the anti-color bleeding device is configured to release an oxidizing active substance. The washing machine is controlled to allow water to enter the washing machine, and water-entering is stopped when a level of water entering the washing machine reaches a first target water level. When a duration of stopping water-entering reaches a first set duration, the washing machine is controlled to allow water-entering, and when the level of water entering the washing machine reaches a second target water level, water-entering is stopped, and the clothes in the washing machine are washed. The second target water level is higher than the first target water level. By making the oxidizing active substance fully mixed into the water in the washing machine within the first set duration, the possibility of the clothes being stained with each other during the washing procedure can be reduced, thereby reducing the physical loss of a user.

[00102] FIG. 8 is a block diagram of a washing device 800 according to an example embodiment. For example, the device 800 may be a washing machine.

[00103] Referring to FIG. 8, the device 800 may include one or more of the following components: a processing component 802, a memory 804, a power component 806, a multimedia component 808, an audio component 810, an input/output (I/O) interface 812, a sensor component 814, and a communication component 816.

[00104] The processing component 802 typically controls overall operations of the device 800, such as the operations associated with display, telephone calls, data communications, camera operations, and recording operations. The processing component

802 may include one or more processors 820 to execute instructions to perform all or part of the steps in the above described methods. Moreover, the processing component 802 may include one or more modules which facilitate the interaction between the processing component 802 and other components. For instance, the processing component 802 may include a multimedia module to facilitate the interaction between the multimedia component 808 and the processing component 802.

[00105] The memory 804 is configured to store various types of data to support the operation of the device 800. Examples of such data include instructions for any applications or methods operated on the device 800, contact data, phonebook data, messages, pictures, video, etc. The memory 804 may be implemented using any type of volatile or non-volatile memory devices, or a combination thereof, such as a static random access memory (SRAM), an electrically erasable programmable read-only memory (EEPROM), an erasable programmable read-only memory (EPROM), a programmable read-only memory (PROM), a read-only memory (ROM), a magnetic memory, a flash memory, a magnetic or optical disk.

[00106] The power component 806 provides power to various components of the device 800. The power component 806 may include a power management system, one or more power sources, and any other components associated with the generation, management, and distribution of power in the device 800.

[00107] The multimedia component 808 includes a screen providing an output interface between the device 800 and the user. In some embodiments, the screen may include a liquid crystal display (LCD) and a touch panel (TP). If the screen includes the touch panel, the screen may be implemented as a touch screen to receive input signals from the user. The touch panel includes one or more touch sensors to sense touches, swipes, and gestures on the touch panel. The touch sensors may not only sense a boundary of a touch or swipe action, but also sense a period of time and a pressure associated with the touch or swipe action. In some embodiments, the multimedia component 808 includes a front camera and/or a rear camera. The front camera and the rear camera may receive an external multimedia datum while the device 800 is in an operation mode, such as a photographing mode or a video mode. Each of the front camera and the rear camera may be a fixed optical lens system or have focus and optical zoom capability.

[00108] The audio component 810 is configured to output and/or input audio signals. For example, the audio component 810 includes a microphone ("MIC") configured to receive an external audio signal when the device 800 is in an operation mode, such as a call mode, a recording mode, and a voice recognition mode. The received audio signal may be further stored in the memory 804 or transmitted via the communication component 816. In some embodiments, the audio component 810 further includes a speaker to output audio signals.

[00109] The input/output interface 812 provides an interface between the processing component 802 and peripheral interface modules, such as a keyboard, a click wheel, buttons, and the like. The buttons may include, but are not limited to, a home button, a volume button, a starting button, and a locking button.

[00110] The sensor component 814 includes one or more sensors to provide status assessments of various aspects of the device 800. For instance, the sensor component 814 may detect an open/closed status of the device 800, relative positioning of components, e.g., the display and the keypad, of the device 800, a change in position of the device 800 or a component of the device 800, a presence or absence of user contact with the device 800, an orientation or an acceleration/deceleration of the device 800, and a change in temperature of the device 800. The sensor component 814 may include a proximity sensor configured to detect the presence of nearby objects without any physical contact. The sensor component 814 may also include a light sensor, such as a CMOS or CCD image sensor, for use in imaging applications. In some embodiments, the sensor component 814 may also include an accelerometer sensor, a gyroscope sensor, a magnetic sensor, a pressure sensor, or a temperature sensor.

[00111] The communication component 816 is configured to facilitate communication, wired or wirelessly, between the device 800 and other devices. The device 800 can access a wireless network based on a communication standard, such as WiFi, 2G, or 3G, or a combination thereof. In one example embodiment, the communication component 816 receives a broadcast signal or broadcast associated information from an external broadcast management system via a broadcast channel. In one example embodiment, the communication component 816 further includes a near field communication (NFC) module to facilitate short-range communications. For example, the NFC module may be implemented

based on a radio frequency identification (RFID) technology, an infrared data association (IrDA) technology, an ultra-wideband (UWB) technology, a Bluetooth (BT) technology, and other technologies.

[00112] In example embodiments, the device 800 may be implemented with one or more application specific integrated circuits (ASICs), digital signal processors (DSPs), digital signal processing devices (DSPDs), programmable logic devices (PLDs), field programmable gate arrays (FPGAs), controllers, micro-controllers, microprocessors, or other electronic components, for performing the above described washing methods.

[00113] In example embodiments, there is also provided a non-transitory computer-readable storage medium including instructions, such as the memory 804 including instructions executable by the processor 820 in the device 800, for performing the above-described methods. For example, the non-transitory computer-readable storage medium may be a ROM, a Random Access Memory (RAM), a CD-ROM, a magnetic tape, a floppy disc, an optical data storage device, and the like.

[00114] In another example embodiment, a computer program product is also provided. The computer program product includes a computer program, the computer program can be executed by a programmable device, and the computer program has a code portion for implementing the above-mentioned washing method(s) when the code portion is executed by the programmable device.

[00115] It should be understood that, unless otherwise specifically noted, the features of a part of various embodiments of the present disclosure may be combined with each other. As used herein, the term “and/or” includes any one of the related listed items and any combination of any two or more of the related listed items. Similarly, “at least one of…” includes any one of the related listed items and any combination of any two or more of the related listed items.

[00116] Other embodiments of the present disclosure will be apparent to those skilled in the art from consideration of the specification and practice of the disclosure disclosed here. This application is intended to cover any variations, uses, or adaptations of embodiments of the present disclosure following the general principles thereof and including such departures from the present disclosure as come within known or customary practice in the art. It is

intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the present disclosure being indicated by the following claims.

[00117] It will be appreciated that embodiments of the present disclosure are not limited to the exact construction that has been described above and illustrated in the accompanying drawings, and that various modifications and changes can be made without departing from the scope thereof. It is intended that the scope of embodiments of the present disclosure only be limited by the appended claims.

WHAT IS CLAIMED IS:

1. A washing method, comprising:

when a washing machine is performing washing, turning on an anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release an oxidizing active substance;

controlling the washing machine to allow water-entering, and stopping water-entering when a level of water entering the washing machine reaches a first target water level; and

when a duration of stopping water-entering reaches a first duration which is set for the washing machine, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches a second target water level, stopping water-entering and control the washing machine to wash clothes in the washing machine, wherein the second target water level is higher than the first target water level.

2. The method according to claim 1, wherein when the duration of stopping water-entering reaches the first set duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering comprises:

determining the second target water level according to a washing mode of the washing machine; and

when the duration of stopping water-entering reaches the first duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering, and controlling the washing machine to wash the clothes in the washing machine.

3. The method according to claim 1, wherein when the duration of stopping water-entering reaches the first duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering comprises:

determining the second target water level according to a weight of the clothes in the washing machine; and

when the duration of stopping water-entering reaches the first duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering, and controlling the washing machine to wash the clothes in the washing machine.

4. The method according to claim 1, wherein washing the clothes in the washing machine comprises:

pre-washing the clothes in the washing machine at a first rotation speed;

when a duration of pre-washing of the washing machine reaches a second duration which is set for the washing machine, turning off the anti-color bleeding device and controlling water in the washing machine to be discharged;

after the water in the washing machine is discharged, turning on the anti-color bleeding device; and

controlling the washing machine to allow water-entering, stopping water-entering when the level of water entering the washing machine reaches the second target water level, and washing the clothes in the washing machine at a second rotation speed, wherein the second rotation speed is greater than the first rotation speed.

5. The method according to claim 1, wherein turning on the anti-color bleeding device of the washing machine comprises:

when the washing machine is performing washing and anti-color bleeding washing assistance for the washing machine is started, turning on the anti-color bleeding device, wherein the anti-color bleeding device is configured to release the oxidizing active substance.

6. The method according to claim 1 or 4, further comprising:

after the washing machine finishes washing, turning off the anti-color bleeding device and controlling water in the washing machine to be discharged.

7. The method according to any one of claims 1 to 5, wherein the first target water level is lower than or equal to a height of an outer wall of an inner drum of the washing machine.

8. A washing device, comprising:

a processor; and

a memory configured to store instructions executable by the processor;

wherein the processor is configured to:

when a washing machine is performing washing, turn on an anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release an oxidizing active substance;

control the washing machine to allow water-entering, and stop water-entering when a level of water entering the washing machine reaches a first target water level; and

when a duration of stopping water-entering reaches a first duration which is set for the washing machine, control the washing machine to allow water-entering, and when the level of water entering the washing machine reaches a second target water level, stop water-entering and control the washing machine to wash clothes in the washing machine, wherein the second target water level is higher than the first target water level.

9. The device according to claim 8, wherein the processor is configured to:

determine the second target water level according to a washing mode of the washing machine; and

when the duration of stopping water-entering reaches the first duration, control the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stop water-entering, and control the washing machine to wash the clothes in the washing machine.

10. The device according to claim 8, wherein the processor is configured to:

determine the second target water level according to a weight of the clothes in the washing machine; and

when the duration of stopping water-entering reaches the first duration, control the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stop water-entering, and control the washing

machine to wash the clothes in the washing machine.

11. The device according to claim 8, wherein the processor is configured to:

control the washing machine to pre-wash the clothes in the washing machine at a first rotation speed;

when a duration of pre-washing of the washing machine reaches a second duration which is set for the washing machine, turn off the anti-color bleeding device and control water in the washing machine to be discharged;

after the water in the washing machine is discharged, turn on the anti-color bleeding device; and

control the washing machine to allow water-entering, stop water-entering when the level of water entering the washing machine reaches the second target water level, and control the washing machine to wash the clothes in the washing machine at a second rotation speed, wherein the second rotation speed is greater than the first rotation speed.

12. The device according to claim 8, wherein the processor is configured to:

when the washing machine is performing washing and anti-color bleeding washing assistance for the washing machine is started, turn on the anti-color bleeding device, wherein the anti-color bleeding device is configured to release the oxidizing active substance.

13. The device according to claim 8 or 11, the processor is further configured to:

after the washing machine finishes washing, turn off the anti-color bleeding device and control water in the washing machine to be discharged.

14. The device according to any one of claims 8 to 13, wherein the first target water level is lower than or equal to a height of an outer wall of an inner drum of the washing machine.

15. A non-transitory computer-readable storage medium having computer program instructions stored thereon, wherein when the program instructions are executed by a

processor, steps of a washing method are implemented, wherein the washing method comprises:

when a washing machine is performing washing, turning on an anti-color bleeding device of the washing machine, wherein the anti-color bleeding device is configured to release an oxidizing active substance;

controlling the washing machine to allow water-entering, and stopping water-entering when a level of water entering the washing machine reaches a first target water level; and

when a duration of stopping water-entering reaches a first duration which is set for the washing machine, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches a second target water level, stopping water-entering and control the washing machine to wash clothes in the washing machine, wherein the second target water level is higher than the first target water level.

16. The non-transitory computer-readable storage medium according to claim 15, wherein when the program instructions are executed by the processor, the following steps are performed:

determining the second target water level according to a washing mode of the washing machine; and

when the duration of stopping water-entering reaches the first duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing machine reaches the second target water level, stopping water-entering, and controlling the washing machine to wash the clothes in the washing machine.

17. The non-transitory computer-readable storage medium according to claim 15, wherein when the program instructions are executed by the processor, the following steps are performed:

determining the second target water level according to a weight of the clothes in the washing machine; and

when the duration of stopping water-entering reaches the first duration, controlling the washing machine to allow water-entering, and when the level of water entering the washing

machine reaches the second target water level, stopping water-entering, and controlling the washing machine to wash the clothes in the washing machine.

18. The non-transitory computer-readable storage medium according to claim 15, wherein when the program instructions are executed by the processor, the following steps are performed:

pre-washing the clothes in the washing machine at a first rotation speed;

when a duration of pre-washing of the washing machine reaches a second duration which is set for the washing machine, turning off the anti-color bleeding device and controlling water in the washing machine to be discharged;

after the water in the washing machine is discharged, turning on the anti-color bleeding device; and

controlling the washing machine to allow water-entering, stopping water-entering when the level of water entering the washing machine reaches the second target water level, and washing the clothes in the washing machine at a second rotation speed, wherein the second rotation speed is greater than the first rotation speed.

19. The non-transitory computer-readable storage medium according to claim 15, wherein when the program instructions are executed by the processor, the following step is performed:

when the washing machine is performing washing and anti-color bleeding washing assistance for the washing machine is started, turning on the anti-color bleeding device, wherein the anti-color bleeding device is configured to release the oxidizing active substance.

20. The non-transitory computer-readable storage medium according to claim 15, wherein when the program instructions are executed by the processor, the following step is performed:

after the washing machine finishes washing, turning off the anti-color bleeding device and controlling water in the washing machine to be discharged.