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(54) **PROMPTING METHOD AND APPARATUS FOR COOKER HOOD, DEVICE, STORAGE MEDIUM, AND COOKER HOOD**

AUFFORDERUNGSVERFAHREN UND -VORRICHTUNG FÜR DUNSTABZUGSHAUBE, VORRICHTUNG, SPEICHERMEDIUM UND DUNSTABZUGSHAUBE

PROCÉDÉ ET APPAREIL DE SOUFFLAGE POUR HOTTE DE CUISINIÈRE, DISPOSITIF, SUPPORT DE STOCKAGE ET HOTTE DE CUISINIÈRE

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Description

TECHNICAL FIELD

[0001] The present invention relates to the field of household appliance technologies, and in particular, to a prompting method and apparatus for a cooker hood, a device, a storage medium, and a cooker hood.

BACKGROUND

[0002] A cooker hood is a household appliance for purifying the kitchen environment, can quickly discharge the waste resulting from burning on a cooktop and the fume generated in a cooking process to the outside, thereby reducing air pollution in a kitchen. However, in actual use, the filter cartridge of the cooker hood is likely to have a large amount of thick greasy dirt adhered thereto and needs to be replaced in time.

[0003] A cooker hood comprising a sensor for monitoring airborne substances is known from EP 3 553 390 A2. A saturation indicator for filters of a cooker hood is shown in DE 10 2015 218007 A1 and DE 10 2005 020321 A1. A method and system for determining an exchange time point of an odour filter of a cooker hood is described in EP 4 075 067 A1. An intelligent smoke exhaust ventilator, control system and cloud platform is known from CN 105 465 865 B. A cooker hood comprising a cooking state monitoring unit for monitoring the cooking state of a cooking device is described in WO 2018/123512 A1.

SUMMARY

[0004] An objective of the present invention is to provide a prompting method and apparatus for a cooker hood, a device, a storage medium, and a cooker hood.

[0005] Embodiments of the present invention provide a cooker hood including a filter cartridge. The embodiments of the present invention provide a prompting method for a cooker hood, including: obtaining current monitoring data about the cooker hood; determining a current cooking mode based on the current monitoring data; determining a current greasy dirt adhesion amount of the filter cartridge based on the current cooking mode; adding the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount; and triggering, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge.

[0006] Optionally, the current monitoring data includes a real-time value of a current fume concentration; the cooking mode includes a deep-frying mode, a pan-frying mode, a stir-frying mode, a stewing mode, and a boiling mode; and the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume con-

centration is greater than or equal to a first fume concentration threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, that the current cooking mode includes the stewing mode or the boiling mode.

[0007] Optionally, the current monitoring data includes a real-time value of a current humidity; and the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current humidity is less than or equal to a humidity threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current humidity is greater than the humidity threshold, that the current cooking mode includes the stewing mode or the boiling mode.

[0008] Optionally, the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current humidity is continuously less than or equal to the humidity threshold, that the current cooking mode includes the deep-frying mode or the pan-frying mode; and determining, when the real-time value of the current humidity is continuously less than or equal to the humidity threshold and then is continuously greater than the humidity threshold, that the current cooking mode includes the stir-frying mode.

[0009] Optionally, the current monitoring data includes a real-time value of a current temperature; and the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current temperature is greater than or equal to a temperature threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current temperature is less than the temperature threshold, that the current cooking mode includes the stewing mode or the boiling mode.

[0010] Optionally, the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current temperature is continuously greater than or equal to the temperature threshold, that the current cooking mode includes the deep-frying mode or the pan-frying mode; and determining, when the real-time value of the current temperature is continuously greater than or equal to the temperature threshold and then is continuously less than

the temperature threshold, that the current cooking mode includes the stir-frying mode.

[0011] Optionally, the current monitoring data includes a real-time value of a current cooking time; and the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current cooking time is less than or equal to a time threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current cooking time is greater than the time threshold, that the current cooking mode includes the stewing mode or the boiling mode.

[0012] Optionally, the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold, that the current cooking mode includes the deep-frying mode or the pan-frying mode; and determining, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold and then is continuously less than the first fume concentration threshold, that the current cooking mode includes the stir-frying mode.

[0013] Optionally, the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold and is less than a second fume concentration threshold, that the current cooking mode includes the pan-frying mode; and determining, when the real-time value of the current fume concentration is greater than or equal to the second fume concentration threshold, that the current cooking mode includes the deep-frying mode.

[0014] Optionally, the determining a current cooking mode based on the current monitoring data includes: determining, when the real-time value of the current fume concentration is continuously less than the first fume concentration threshold, that the current cooking mode includes the boiling mode; and determining, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold and then is continuously less than the first fume concentration threshold, that the current cooking mode includes the stewing mode.

[0015] Optionally, the current monitoring data includes a real-time value of a current cooking time; and the determining a current greasy dirt adhesion amount of the filter cartridge based on the current cooking mode includes: obtaining reference greasy dirt adhesion amounts corresponding to different cooking modes in a unit cooking time; and determining, based on the refer-

ence greasy dirt adhesion amounts, a greasy dirt adhesion amount corresponding to the current cooking mode within the real-time value of the current cooking time, and using the greasy dirt adhesion amount as the current greasy dirt adhesion amount.

[0016] Optionally, the current fume concentration includes a current volatile organic compound (VOC) concentration.

[0017] The embodiments of the present invention further provide a prompting apparatus for a cooker hood. The prompting apparatus includes: an obtaining module, configured to obtain current monitoring data about the cooker hood; and a processing module, configured to determine a current cooking mode based on the current monitoring data; determine a current greasy dirt adhesion amount of the filter cartridge based on the current cooking mode; add the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount; and trigger, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge.

[0018] The embodiments of the present invention further provide a storage medium. The storage medium stores a computer program. The computer program, when executed, implements the prompting method for a cooker hood provided in the embodiments of the present invention.

[0019] The embodiments of the present invention further provide an electronic device. The electronic device includes: a processor; a memory, storing a computer program executable on the processor, where the computer program, when executed by the processor, implements the prompting method for a cooker hood provided in the embodiments of the present invention.

[0020] The embodiments of the present invention further provide a cooker hood. The cooker hood includes a filter cartridge and a control unit. The control unit is adapted to perform the prompting method for a cooker hood provided in the embodiments of the present invention.

[0021] Optionally, the current monitoring data includes a real-time value of a current fume concentration, and the current fume concentration includes a current volatile organic compound (VOC) concentration; and the cooker hood includes a gas sensor for monitoring a real-time value of the current VOC concentration.

[0022] Optionally, the current monitoring data includes at least one of a real-time value of a current humidity, a real-time value of a current temperature, or a real-time value of a current cooking time; the cooker hood includes at least one of a humidity sensor, a temperature sensor, and a timer; the humidity sensor is configured to monitor the real-time value of the current humidity; the temperature sensor is configured to monitor the real-time value of the current temperature; and the timer is configured to monitor the real-time value of the current cooking time.

[0023] Compared with the related art, the technical solutions of the embodiments of the present invention have beneficial effects.

[0024] For example, current monitoring data about a cooker hood can be obtained in a cooking process, and a current cooking mode and a current greasy dirt adhesion amount of a filter cartridge of the cooker hood in a current cooking process are obtained based on the current monitoring data. Further, a current accumulated greasy dirt adhesion amount of the filter cartridge is obtained based on the current greasy dirt adhesion amount of the filter cartridge, to further determine in time, based on the current accumulated greasy dirt adhesion amount of filter cartridge, whether the filter cartridge needs to be replaced.

[0025] In another example, the current cooking mode may be jointly determined with reference to at least one of a current fume concentration, a current humidity, a current temperature, or a current cooking time, to make the determining of the cooking mode more accurate, so that the greasy dirt adhesion amount of the filter cartridge in the current cooking mode is more accurate, and further the triggered prompt information about replacing the filter cartridge is more accurate.

[0026] In another example, whether the current cooking mode includes a stir-frying mode, a deep-frying mode, or a pan-frying mode may also be determined by determining whether a real-time value of a current humidity is continuously less than or equal to a humidity threshold, to make the determining of the cooking mode more accurate.

[0027] In another example, whether the current cooking mode includes a stir-frying mode, a deep-frying mode, or a pan-frying mode may also be determined by determining whether a real-time value of a current temperature is continuously greater than or equal to a temperature threshold, to make the determining of the cooking mode more accurate.

[0028] In another example, whether the current cooking mode includes a stir-frying mode, a deep-frying mode, or a pan-frying mode may also be determined by determining whether a real-time value of a current fume concentration is continuously greater than or equal to a first fume concentration threshold, to make the determining of the cooking mode more accurate.

[0029] In another example, whether the current cooking mode includes a deep-frying mode or a pan-frying mode may also be determined by determining whether a real-time value of a current fume concentration is greater than or equal to a second fume concentration threshold, to make the determining of the cooking mode more accurate.

[0030] In another example, whether the current cooking mode includes a boiling mode or a stewing mode may also be determined by determining whether a real-time value of a current fume concentration is continuously greater than or equal to a first fume concentration threshold, to make the determining of the cooking mode more

accurate.

BRIEF DESCRIPTION OF THE DRAWINGS

[0031]

FIG. 1 is a schematic structural diagram of a cooker hood according to an embodiment of the present invention;

FIG. 2 is a schematic flowchart of a prompting method for a cooker hood according to an embodiment of the present invention; and

FIG. 3 is a principle block diagram of a prompting apparatus for a cooker hood according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0032] In the related art, the filter cartridge of the cooker hood is likely to have a large amount of greasy dirt adhered thereto, but cannot be replaced in time.

[0033] Different from the related art, the present invention provides a prompting method and apparatus for a cooker hood, a device, a storage medium, and a cooker hood. Embodiments of the present invention provide a cooker hood including a filter cartridge. The embodiments of the present invention provide a prompting method for a cooker hood, including: obtaining current monitoring data about the cooker hood; determining a current cooking mode based on the current monitoring data; determining a current greasy dirt adhesion amount of the filter cartridge based on the current cooking mode; adding the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount; and triggering, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge.

[0034] Compared with the related art, the technical solutions of the embodiments of the present invention have beneficial effects. For example, current monitoring data about a cooker hood can be obtained in a cooking process, and a current cooking mode and a current greasy dirt adhesion amount of a filter cartridge of the cooker hood in a current cooking process are obtained based on the current monitoring data. Further, a current accumulated greasy dirt adhesion amount of the filter cartridge is obtained based on the current greasy dirt adhesion amount of the filter cartridge, to further determine in time, based on the current accumulated greasy dirt adhesion amount of filter cartridge, whether the filter cartridge needs to be replaced.

[0035] To make the objectives, features, and beneficial effects of the present invention more comprehensible, the specific implementations of the present invention are described in detail with reference to the accompanying drawings. It may be understood that specific implemen-

tations described below are only used to explain the present invention, but not to limit the present invention. In addition, for ease of description, the accompanying drawings only show parts relevant to the present invention rather than the entire structure. In addition, descriptions of the components, features, effects, and the like in the related art can be omitted.

[0036] FIG. 1 is a schematic structural diagram of a cooker hood according to an embodiment of the present invention.

[0037] Referring to FIG. 1, a cooker hood 10 provided in this embodiment of the present invention includes a filter cartridge 11 and a sensor 12. In a specific implementation, the filter cartridge 11 is configured to filter greasy dirt. The sensor 12 is configured to acquire monitoring data of a cooking process related to the cooker hood 10.

[0038] In some embodiments, the monitoring data acquired by the sensor 12 may include a real-time value of a fume concentration. Specifically, the fume concentration may include a VOC concentration. Correspondingly, the sensor 12 may include a gas sensor, configured to monitor a real-time value of the VOC concentration.

[0039] In some embodiments, a VOC concentration of an environment in which the cooker hood 10 is located is relatively large. In this case, a fume concentration in a cooking process cannot be truly reflected if only a gas sensor is used to acquire a real-time value of the VOC concentration. In this case, the sensor 12 may not only include a gas sensor, but also include a PM2.5 sensor. The PM2.5 sensor is configured to acquire a real-time value of a concentration of greasy dirt particles with diameters less than or equal to 2.5 μm . In this way, a real-time value of a real fume concentration related to a cooking process can be reflected more accurately by combining the gas sensor and the PM2.5 sensor.

[0040] In some embodiments, the monitoring data acquired by the sensor 12 may include at least one of a real-time value of a humidity, a real-time value of a temperature, or a real-time value of a cooking time. Correspondingly, the sensor 12 may include at least one of a humidity sensor, a temperature sensor, or a timer. The humidity sensor is configured to monitor the real-time value of the humidity. The temperature sensor is configured to monitor the real-time value of the temperature. The timer is configured to monitor the real-time value of the cooking time.

[0041] FIG. 2 is a schematic flowchart of a prompting method for a cooker hood according to an embodiment of the present invention.

[0042] Referring to FIG. 2, a prompting method 20 for a cooker hood provided in the embodiments of the present invention may include the following steps:

S21: Obtain current monitoring data about a cooker hood 10.

S22: Determine a current cooking mode based on the current monitoring data.

S23: Determine a current greasy dirt adhesion amount of a filter cartridge 11 based on the current cooking mode.

S24: Add the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount.

S25: Trigger, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge 11.

[0043] Specifically, the cooker hood 10 may be turned on in a cooking process, and a sensor 12 is started to acquire current monitoring data related to a current cooking process, to determine a current cooking mode based on the current monitoring data.

[0044] In some embodiments, the cooking mode may include a deep-frying mode, a pan-frying mode, a stir-frying mode, a stewing mode, and a boiling mode.

[0045] In a specific implementation, the current monitoring data may include a real-time value of a current fume concentration. In some embodiments, the current fume concentration may include a current VOC concentration.

[0046] In some embodiments, the current fume concentration may further include a current VOC concentration and a current concentration of greasy dirt particles with diameters less than or equal to 2.5 μm .

[0047] Specifically, a real-time value of a current VOC concentration may be acquired by using a gas sensor, and a real-time value of a concentration of greasy dirt particles with diameters less than or equal to 2.5 μm may be acquired by using a PM2.5 sensor.

[0048] In some embodiments, different degrees of fume concentrations may be generated in different cooking modes. Therefore, a current cooking mode may be determined based on a real-time value of a fume concentration.

[0049] Generally, fume concentrations generated in cooking processes in all the three modes, namely, a deep-frying mode, a pan-frying mode, and a stir-frying mode, are relatively close and are relatively large. Moreover, fume concentrations generated in cooking processes in both the two modes, namely, a stewing mode and a boiling mode, are also relatively close and are relatively small. Therefore, whether the current cooking mode includes a deep-frying mode, a pan-frying mode, or stir-frying mode or includes a stewing mode or a boiling mode may be determined based on a fume concentration threshold.

[0050] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may include:

S221: Determine whether a real-time value of a current fume concentration is greater than or equal to a first fume concentration threshold; determine, when the real-time

value of the current fume concentration is greater than or equal to the first fume concentration threshold, that the current cooking mode includes a deep-frying mode, a pan-frying mode, or a stir-frying mode; and determine, when the real-time value of the current fume concentration is less than the first fume concentration threshold, that the current cooking mode includes a stewing mode or a boiling mode.

[0051] In some embodiments, the first fume concentration threshold may be obtained based on an empirical value. In some embodiments, the first fume concentration threshold may also be obtained based on an experimental value.

[0052] For example, for any cooking mode in the deep-frying mode, the pan-frying mode, the stir-frying mode, the stewing mode, and the boiling mode, fume concentrations generated in a plurality of cooking processes performed in a single cooking mode may be monitored respectively, and a first fume concentration threshold suitable for distinguishing the deep-frying mode, the pan-frying mode, or the stir-frying mode, and the stewing mode or boiling mode can be obtained based on the fume concentrations monitored a plurality of times.

[0053] In some embodiments, for the deep-frying mode and the pan-frying mode, a fume concentration generated in a cooking process is continuously relatively large. Specifically, for the deep-frying mode and the pan-frying mode, a fume concentration generated in a cooking process is continuously greater than or equal to a first fume concentration threshold.

[0054] However, for the stir-frying mode, there is some water in a later stage of a cooking process, (for example, during stir-frying of greens, the greens may exude water in a later stage as being stir-fried, or during stir-frying of greens, a proper amount of water is added in a later stage), and when there is water, a fume concentration generated in the cooking process decreases. Specifically, for the stir-frying mode, a fume concentration generated in a cooking process is first continuously greater than or equal to a first fume concentration threshold, and then, is continuously less than the first fume concentration threshold.

[0055] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S222: Determine whether the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold; determine, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold, that the current cooking mode includes the deep-frying mode and the pan-frying mode; and determine, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold and then is continuously less than the first fume concentration threshold, that the current cooking mode includes the stir-frying mode.

[0056] In some embodiments, for the stir-frying mode, a time during which the fume concentration generated in a cooking process is continuously greater than or equal to the first fume concentration threshold is relatively long, and a time during which the fume concentration generated in the cooking process is continuously less than the first fume concentration threshold is relatively short.

[0057] In some embodiments, the current monitoring data may further include a real-time value of a current humidity.

[0058] Specifically, the real-time value of the current humidity may be acquired by using a humidity sensor.

[0059] In a specific implementation, the current cooking mode may also be determined with reference to the current fume concentration and the current humidity.

[0060] In some embodiments, humidities generated in cooking processes in all the three modes, namely, the deep-frying mode, the pan-frying mode, and the stir-frying mode, are relatively small. Moreover, humidities generated in cooking processes in both the two modes, namely, the stewing mode and the boiling mode, are relatively large. Therefore, whether the current cooking mode includes a deep-frying mode, a pan-frying mode, or stir-frying mode or includes a stewing mode or a boiling mode may be determined with reference to a humidity threshold. In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S223: Determine whether the real-time value of the current fume concentration is greater than or equal to a first fume concentration threshold, and determine whether a real-time value of a current humidity is less than or equal to a humidity threshold; determine, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current humidity is less than or equal to the humidity threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determine, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current humidity is greater than the humidity threshold, that the current cooking mode includes the stewing mode or the boiling mode.

[0061] In some embodiments, for the deep-frying mode and the pan-frying mode, a humidity generated in a cooking process is continuously relatively large. Specifically, for the deep-frying mode and the pan-frying mode, a humidity generated in a cooking process is continuously less than or equal to a humidity threshold.

[0062] However, for the stir-frying mode, there is some water in a later stage of a cooking process, (for example, during stir-frying of greens, the greens may exude water in a later stage as being stir-fried, or during stir-frying of greens, a proper amount of water is added in a later stage), and when there is water, a humidity increases. Specifically, for the stir-frying mode, a humidity generated in a cooking process is first continuously less than or

equal to a humidity threshold, and then, is continuously greater than the humidity threshold.

[0063] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S224: Determine whether the real-time value of the current humidity is continuously less than or equal to the humidity threshold; determine, when the real-time value of the current humidity is continuously less than or equal to the humidity threshold, that the current cooking mode includes the deep-frying mode or the pan-frying mode; and determining, when the real-time value of the current humidity is continuously less than or equal to the humidity threshold and then is continuously greater than the humidity threshold, that the current cooking mode includes the stir-frying mode.

[0064] In some embodiments, for the stir-frying mode, a time during which the humidity generated in a cooking process is continuously less than or equal to the humidity threshold is relatively long, and a time during which the humidity generated in a cooking process is continuously greater than the humidity threshold is relatively short.

[0065] In some embodiments, the current monitoring data may further include a real-time value of a current temperature. Specifically, the real-time value of the current temperature may be acquired by using a temperature sensor.

[0066] In a specific implementation, the current cooking mode may also be determined with reference to the current fume concentration and the current temperature.

[0067] In some embodiments, temperatures in cooking processes in all the three modes, namely, the deep-frying mode, the pan-frying mode, and the stir-frying mode, are relatively high. Moreover, temperatures in cooking processes in both the two modes, namely, the stewing mode and the boiling mode, are relatively low. Therefore, whether the current cooking mode includes a deep-frying mode, a pan-frying mode, or stir-frying mode or includes a stewing mode or a boiling mode may be determined with reference to a temperature threshold.

[0068] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S225: Determine whether the real-time value of the current fume concentration is greater than or equal to a first fume concentration threshold, and determine whether a real-time value of a current temperature is greater than or equal to a temperature threshold; determine, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current temperature is greater than or equal to the temperature threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determine, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current temperature is less than the temperature threshold, that the current

cooking mode includes the stewing mode or the boiling mode.

[0069] In some embodiments, for the deep-frying mode and the pan-frying mode, a temperature in a cooking process is continuously relatively high. Specifically, for the deep-frying mode and the pan-frying mode, a temperature in a cooking process is continuously greater than or equal to a temperature threshold.

[0070] However, for the stir-frying mode, there is some water in a later stage of a cooking process, (for example, during stir-frying of greens, the greens may exude water in a later stage as being stir-fried, or during stir-frying of greens, a proper amount of water is added in a later stage), and when there is water, a temperature decreases. Specifically, for the stir-frying mode, a temperature in a cooking process is first continuously greater than or equal to a temperature threshold, and then, is continuously less than the temperature threshold.

[0071] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S226: Determine whether the real-time value of the current temperature is continuously greater than or equal to the temperature threshold; determine, when the real-time value of the current temperature is continuously greater than or equal to the temperature threshold, that the current cooking mode includes the deep-frying mode or the pan-frying mode; and determining, when the real-time value of the current temperature is continuously greater than or equal to the temperature threshold and then is continuously less than the temperature threshold, that the current cooking mode includes the stir-frying mode.

[0072] In some embodiments, for the stir-frying mode, a time during which the temperature in a cooking process is continuously greater than or equal to the temperature threshold is relatively long, and a time during which the temperature in a cooking process is continuously less than the temperature threshold is relatively short.

[0073] In some embodiments, the current monitoring data may further include a real-time value of a current cooking time. Specifically, the real-time value of the current cooking time may be acquired by using a timer.

[0074] In a specific implementation, the current cooking mode may also be determined with reference to the current fume concentration and the current cooking time.

[0075] In some embodiments, cooking times of cooking processes in all the three modes, namely, the deep-frying mode, the pan-frying mode, and the stir-frying mode, are relatively short. Moreover, cooking times of cooking processes in both the two modes, namely, the stewing mode and the boiling mode, are relatively long. Therefore, whether the current cooking mode includes a deep-frying mode, a pan-frying mode, or stir-frying mode or includes a stewing mode or a boiling mode may be determined with reference to a cooking time threshold.

[0076] In a specific implementation, the determining a current cooking mode based on the current monitoring

data in step S22 may further include:

S227: Determine whether the real-time value of the current fume concentration is greater than or equal to a first fume concentration threshold, and determine whether a real-time value of a current cooking time is less than or equal to a time threshold; determine, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current cooking time is less than or equal to the time threshold, that the current cooking mode includes the deep-frying mode, the pan-frying mode, or the stir-frying mode; and determine, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current cooking time is greater than the time threshold, that the current cooking mode includes the stewing mode or the boiling mode.

[0077] In some embodiments, a fume concentration generated in a cooking process in the deep-frying mode is greater than a fume concentration generated in a cooking process in the pan-frying mode. Therefore, whether the current cooking mode includes a deep-frying mode or a pan-frying mode may also be determined with reference to another fume concentration threshold.

[0078] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S228: Determine whether the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold and less than a second fume concentration threshold; determine, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold and less than the second fume concentration threshold, that the current cooking mode includes the pan-frying mode; and determine, when the real-time value of the current fume concentration is greater than or equal to the second fume concentration threshold, that the current cooking mode includes the deep-frying mode.

[0079] In some embodiments, the second fume concentration threshold may be obtained based on an empirical value. In some embodiments, the second fume concentration threshold may also be obtained based on an experimental value.

[0080] For example, for any cooking mode in the deep-frying mode and the pan-frying mode, fume concentrations generated in a plurality of cooking processes performed in a single cooking mode may be monitored respectively, and a second fume concentration threshold suitable for distinguishing the deep-frying mode and the pan-frying mode can be obtained based on the fume concentrations monitored a plurality of times.

[0081] In some embodiments, for the boiling mode, a fume concentration generated in a cooking process is continuously relatively small. Specifically, for the boiling mode, a fume concentration generated in a cooking process is continuously less than a first fume concentration threshold.

[0082] However, for the stewing mode, stir-frying is first performed in an early stage of a cooking process, and stewing is performed after the stir-frying. Therefore, for the stewing mode, a fume concentration generated in an early stage of a cooking process is relatively large, and a fume concentration generated in a later stage of the cooking process is relatively small. Specifically, for the stewing mode, a fume concentration generated in a cooking process is first continuously greater than or equal to a first fume concentration threshold, and then, is continuously less than the first fume concentration threshold.

[0083] In a specific implementation, the determining a current cooking mode based on the current monitoring data in step S22 may further include:

S229: Determine whether the real-time value of the current fume concentration is continuously less than the first fume concentration threshold; determine, when the real-time value of the current fume concentration is continuously less than the first fume concentration threshold, that the current cooking mode includes the boiling mode; and determine, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold and then is continuously less than the first fume concentration threshold, that the current cooking mode includes the stewing mode.

[0084] In some embodiments, for the stewing mode, a time during which the fume concentration generated in a cooking process is continuously greater than or equal to the first fume concentration threshold is relatively short, and a time during which the fume concentration generated in the cooking process is continuously less than the first fume concentration threshold is relatively long.

[0085] After the current cooking mode is determined based on the current monitoring data, a current greasy dirt adhesion amount of the filter cartridge 11 in the cooker hood 10 can be determined based on the current cooking mode.

[0086] In a specific implementation, the current monitoring data includes a real-time value of a current cooking time.

[0087] The determining a current greasy dirt adhesion amount of a filter cartridge 11 based on the current cooking mode in step S23 may include the following steps:

S231: Obtain reference greasy dirt adhesion amounts corresponding to different cooking modes in a unit cooking time.

S232: Determine, based on the reference greasy dirt adhesion amounts, a greasy dirt adhesion amount corresponding to the current cooking mode within the real-time value of the current cooking time, and use the greasy dirt adhesion amount as the current greasy dirt adhesion amount.

[0088] In some embodiments, for any cooking mode in

the deep-frying mode, the pan-frying mode, the stir-frying mode, the stewing mode, and the boiling mode, greasy dirt adhesion amounts generated in a unit cooking time in a plurality of cooking processes performed in a single cooking mode may be monitored respectively, and reference greasy dirt adhesion amounts corresponding to different cooking modes in a unit cooking time are obtained based on the greasy dirt adhesion amounts that are generated in a unit cooking time and that are monitored a plurality of times.

[0089] The current greasy dirt adhesion amount can be obtained based on the reference greasy dirt adhesion amounts corresponding to the different cooking modes in the unit cooking time and the real-time value of the current cooking time in the current cooking mode.

[0090] Specifically, the current greasy dirt adhesion amount can be obtained by multiplying the reference greasy dirt adhesion amount corresponding to the current cooking mode in the unit cooking time by the real-time value of the current cooking time.

[0091] Generally, the greasy dirt attached to the filter cartridge 11 of the cooker hood 10 is accumulated as a quantity of times of cooking increases. Therefore, after the end of the current cooking, the amount of the greasy dirt (that is, the current greasy dirt adhesion amount) attached to the filter cartridge 11 in the current cooking process can be added to a historical greasy dirt adhesion amount.

[0092] Specifically, step S24 may be performed to add the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount. The historical greasy dirt adhesion amount is a greasy dirt adhesion amount accumulated by the filter cartridge 11 of the cooker hood 10 used in the current cooking mode in previous cooking processes.

[0093] In a specific implementation, the greasy dirt adhesion amount of the filter cartridge 11 can be accumulated each time a cooking process is completed, to obtain the historical greasy dirt adhesion amount of the filter cartridge 11.

[0094] Generally, after a plurality of times of cooking, the filter cartridge 11 cannot effectively discharge fume due to a large amount of greasy dirt attached thereto, and consequently, affects a use effect and needs to be replaced in time.

[0095] In a specific implementation, whether the filter cartridge 11 needs to be replaced may be determined with reference to an accumulated greasy dirt adhesion amount threshold.

[0096] In some embodiments, an accumulated greasy dirt adhesion amount threshold of the filter cartridge 11 may be obtained based on an empirical value.

[0097] In some embodiments, an accumulated greasy dirt adhesion amount threshold of the filter cartridge 11 may be obtained based on an experimental value. For example, for the same filter cartridge 11, discharge amounts of fume thereof can be respectively acquired

in all cooking processes. When a corresponding discharge amount is significantly reduced or does not meet a relevant discharge standard, an accumulated greasy dirt adhesion amount of the filter cartridge 11 is obtained, and the accumulated greasy dirt adhesion amount is used as an accumulated greasy dirt adhesion amount threshold of the filter cartridge 11.

[0098] In a specific implementation, whether the filter cartridge 11 needs to be replaced may be determined based on the accumulated greasy dirt adhesion amount threshold of the filter cartridge 11.

[0099] In a specific implementation, the triggering, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge 11 in step S25 may include:

S251: Determine whether a current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, and trigger, when the current accumulated greasy dirt adhesion amount is greater than or equal to the accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge 11.

[0100] In some embodiments, the prompt information may include voice prompt information or light prompt information.

[0101] In the foregoing technical solution provided in the embodiments of the present invention, whether the filter cartridge 11 needs to be replaced can be determined based on the current accumulated greasy dirt adhesion amount at any time in a cooking process, to timely obtain a prompt information indicating that the filter cartridge 11 needs to be replaced, to help replace the filter cartridge 11 in time.

[0102] In some embodiments, the cooker hood 10 provided in the embodiments of the present invention may control units, to perform the prompting method 20 for a cooker hood 10 provided in the embodiments of the present invention.

[0103] The embodiments of the present invention further provide a prompting apparatus for a cooker hood.

[0104] FIG. 3 is a principle block diagram of a prompting apparatus for a cooker hood according to an embodiment of the present invention.

[0105] Referring to FIG. 3, a prompting apparatus 30 for a cooker hood provided in the embodiments of the present invention may include an obtaining module 31 and a processing module 32 connected to the obtaining module 31.

[0106] Specifically, the obtaining module 31 is configured to obtain current monitoring data about the cooker hood 10. The processing module 32 is configured to determine a current cooking mode based on the current monitoring data; determine a current greasy dirt adhesion amount of a filter cartridge 11 based on the current cooking mode; add the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to

obtain a current accumulated greasy dirt adhesion amount; and trigger, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge 11. 5

[0107] The prompting apparatus 30 for a cooker hood 10 provided in the embodiments of the present invention may be implemented based on the prompting method 20 for a cooker hood 10 provided in the embodiments of the present invention. For more details in an implementation process of the prompting apparatus 30, reference may be made to descriptions about the prompting method 20 in the embodiments of the present invention, and details are not described herein again. 10

[0108] The embodiments of the present invention further provide an electronic device. 15

[0109] Specifically, the electronic device may include a processor and a memory. The memory stores a computer program executable on the processor. The computer program, when executed by the processor, implements the prompting method 20 for a cooker hood 10 provided in the embodiments of the present invention. 20

[0110] The embodiments of the present invention further provide a storage medium. 25

[0111] Specifically, the storage medium stores a computer program. The computer program, when executed, implements the prompting method 20 for a cooker hood 10 provided in the embodiments of the present invention. 30

[0112] In some embodiments, the storage medium may include a computer-readable storage medium. For example, the storage medium may include a ROM, a RAM, a magnetic disk, an optical disc, or the like. 35

Claims 35

1. A prompting method (20) for a cooker hood (10), the cooker hood (10) comprising a filter cartridge (11), comprising: 40

obtaining current monitoring data about the cooker hood (10);

determining a current cooking mode based on the current monitoring data;

determining a current greasy dirt adhesion amount of the filter cartridge (11) based on the current cooking mode; 45

adding the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount; and 50

triggering, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge (11). 55

2. The prompting method (20) according to claim 1,

characterized in that the current monitoring data comprises a real-time value of a current fume concentration; the cooking mode comprises a deep-frying mode, a pan-frying mode, a stir-frying mode, a stewing mode, and a boiling mode; and the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is greater than or equal to a first fume concentration threshold, that the current cooking mode comprises the deep-frying mode, the pan-frying mode, or the stir-frying mode; and

determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, that the current cooking mode comprises the stewing mode or the boiling mode.

3. The prompting method (20) according to claim 2, **characterized in that** the current monitoring data comprises a real-time value of a current humidity; and the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current humidity is less than or equal to a humidity threshold, that the current cooking mode comprises the deep-frying mode, the pan-frying mode, or the stir-frying mode; and

determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current humidity is greater than the humidity threshold, that the current cooking mode comprises the stewing mode or the boiling mode.

4. The prompting method (20) according to claim 3, **characterized in that** the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current humidity is continuously less than or equal to the humidity threshold, that the current cooking mode comprises the deep-frying mode or the pan-frying mode; and

determining, when the real-time value of the current humidity is continuously less than or equal to the humidity threshold and then is continuously greater than the humidity threshold, that the current cooking mode comprises the stir-frying mode.

5. The prompting method (20) according to claim 2, **characterized in that** the current monitoring data comprises a real-time value of a current temperature; and the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current temperature is greater than or equal to a temperature threshold, that the current cooking mode comprises the deep-frying mode, the pan-frying mode, or the stir-frying mode; and
determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current temperature is less than the temperature threshold, that the current cooking mode comprises the stewing mode or the boiling mode.

6. The prompting method (20) according to claim 5, **characterized in that** the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current temperature is continuously greater than or equal to the temperature threshold, that the current cooking mode comprises the deep-frying mode or the pan-frying mode; and
determining, when the real-time value of the current temperature is continuously greater than or equal to the temperature threshold and then is continuously less than the temperature threshold, that the current cooking mode comprises the stir-frying mode.

7. The prompting method (20) according to claim 2, **characterized in that** the current monitoring data comprises a real-time value of a current cooking time; and the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold, and the real-time value of the current cooking time is less than or equal to a time threshold, that the current cooking mode comprises the deep-frying mode, the pan-frying mode, or the stir-frying mode; and
determining, when the real-time value of the current fume concentration is less than the first fume concentration threshold, and the real-time value of the current cooking time is greater than the time threshold, that the current cooking

mode comprises the stewing mode or the boiling mode.

8. The prompting method (20) according to any one of claims 2 to 7, **characterized in that** the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold, that the current cooking mode comprises the deep-frying mode or the pan-frying mode; and
determining, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold and then is continuously less than the first fume concentration threshold, that the current cooking mode comprises the stir-frying mode.

9. The prompting method (20) according to claim 8, **characterized in that** the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is greater than or equal to the first fume concentration threshold and is less than a second fume concentration threshold, that the current cooking mode comprises the pan-frying mode; and
determining, when the real-time value of the current fume concentration is greater than or equal to the second fume concentration threshold, that the current cooking mode comprises the deep-frying mode.

10. The prompting method (20) according to any one of claims 2 to 7, **characterized in that** the determining a current cooking mode based on the current monitoring data comprises:

determining, when the real-time value of the current fume concentration is continuously less than the first fume concentration threshold, that the current cooking mode comprises the boiling mode; and
determining, when the real-time value of the current fume concentration is continuously greater than or equal to the first fume concentration threshold and then is continuously less than the first fume concentration threshold, that the current cooking mode comprises the stewing mode.

11. The prompting method (20) according to claim 1,

characterized in that the current monitoring data comprises a real-time value of a current cooking time; and the determining a current greasy dirt adhesion amount of the filter cartridge (11) based on the current cooking mode comprises:

obtaining reference greasy dirt adhesion amounts corresponding to different cooking modes in a unit cooking time; and
determining, based on the reference greasy dirt adhesion amounts, a greasy dirt adhesion amount corresponding to the current cooking mode within the real-time value of the current cooking time, and using the greasy dirt adhesion amount as the current greasy dirt adhesion amount.

12. The prompting method (20) according to claim 1, **characterized in that** the current fume concentration comprises a current volatile organic compound (VOC) concentration.

13. A prompting apparatus (30) for a cooker hood (10), the cooker hood (10) comprising a filter cartridge (11), **characterized by** comprising:

an obtaining module, configured to obtain current monitoring data about the cooker hood (10); and
a processing module, configured to determine a current cooking mode based on the current monitoring data; determine a current greasy dirt adhesion amount of the filter cartridge (11) based on the current cooking mode; add the current greasy dirt adhesion amount and a historical greasy dirt adhesion amount to obtain a current accumulated greasy dirt adhesion amount; and trigger, when the current accumulated greasy dirt adhesion amount is greater than or equal to an accumulated greasy dirt adhesion amount threshold, prompt information about replacing the filter cartridge (11).

14. A storage medium, storing a computer program, **characterized in that** the computer program, when executed on a prompting apparatus (30) according to claim 13, implements the steps of the prompting method (20) according to any one of claims 1 to 12.

15. An electronic device comprising a prompting apparatus (30) according to claim 13, **characterized by** comprising:

a processor; and
a memory, storing a computer program executable on the processor, wherein the computer program, when executed by the processor, implements the prompting method

(20) according to any one of claims 1 to 12.

16. A cooker hood (10), comprising a filter cartridge (11) and a prompting apparatus (30) according to claim 13, **characterized by** comprising a control unit, adapted to implement the prompting method (20) according to any one of claims 1 to 12.

17. The cooker hood (10) according to claim 16, **characterized in that** the current monitoring data comprises a real-time value of a current fume concentration, and the current fume concentration comprises a current volatile organic compound (VOC) concentration; and the cooker hood (10) comprises a gas sensor for monitoring a real-time value of the current VOC concentration.

18. The cooker hood (10) according to claim 16 or 17, **characterized in that** the current monitoring data comprises at least one of a real-time value of a current humidity, a real-time value of a current temperature, or a real-time value of a current cooking time; the cooker hood (10) comprises at least one of a humidity sensor, a temperature sensor, and a timer; the humidity sensor is configured to monitor the real-time value of the current humidity; the temperature sensor is configured to monitor the real-time value of the current temperature; and the timer is configured to monitor the real-time value of the current cooking time.

Patentansprüche

1. Aufforderungsverfahren (20) für eine Dunstabzugshaube (10) mit einer Filterpatrone (11), das Folgendes umfasst:

Abrufen aktueller Überwachungsdaten zur Dunstabzugshaube (10),
Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten,
Bestimmen einer aktuellen Menge an Fettverschmutzung der Filterpatrone (11) auf der Grundlage des aktuellen Garmodus,
Addieren der aktuellen Menge an Fettverschmutzung und einer bisherigen Menge an Fettverschmutzung zwecks Erhaltens einer aktuellen Gesamtmenge an Fettverschmutzung und,
wenn die aktuelle Gesamtmenge an Fettverschmutzung mindestens einem Grenzwert für die Gesamtmenge an Fettverschmutzung entspricht, Auslösen einer Meldung mit einer Aufforderung zum Ersetzen der Filterpatrone (11).

2. Aufforderungsverfahren (20) nach Anspruch 1, **dadurch gekennzeichnet, dass** die aktuellen Über-

wachungsdaten einen Echtzeitwert für eine aktuelle Dunstkonzentration umfassen, der Garmodus einen Frittiermodus, einen Kurzbratmodus, einen Pfannenrührmodus, einen Schmormodus und einen Kochmodus und das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration mindestens einem ersten Grenzwert für die Dunstkonzentration entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus, den Kurzbratmodus oder den Pfannenrührmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunstkonzentration unter dem ersten Grenzwert für die Dunstkonzentration liegt, Bestimmen, dass der aktuelle Garmodus den Schmormodus oder den Kochmodus umfasst.

3. Aufforderungsverfahren (20) nach Anspruch 2, **dadurch gekennzeichnet, dass** die aktuellen Überwachungsdaten einen Echtzeitwert für eine aktuelle Luftfeuchtigkeit umfassen und das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration mindestens dem ersten Grenzwert für die Dunstkonzentration und der Echtzeitwert für die aktuelle Luftfeuchtigkeit maximal einem Grenzwert für die Luftfeuchtigkeit entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus, den Kurzbratmodus oder den Pfannenrührmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunstkonzentration unter dem ersten Grenzwert für die Dunstkonzentration und der Echtzeitwert für die aktuelle Luftfeuchtigkeit über dem Grenzwert für die Luftfeuchtigkeit liegt, Bestimmen, dass der aktuelle Garmodus den Schmormodus oder den Kochmodus umfasst.

4. Aufforderungsverfahren (20) nach Anspruch 3, **dadurch gekennzeichnet, dass** das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Luftfeuchtigkeit kontinuierlich maximal dem Grenzwert für die Luftfeuchtigkeit entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus oder den Kurzbratmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Luftfeuchtigkeit kontinuierlich maximal dem Grenzwert für die Luftfeuchtigkeit entspricht und dann kontinuierlich über dem Grenzwert für die Luftfeuchtigkeit liegt, Bestimmen, dass der aktuelle Gar-

modus den Pfannenrührmodus umfasst.

5. Aufforderungsverfahren (20) nach Anspruch 2, **dadurch gekennzeichnet, dass** die aktuellen Überwachungsdaten einen Echtzeitwert für eine aktuelle Temperatur umfassen und das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration mindestens dem ersten Grenzwert für die Dunstkonzentration und der Echtzeitwert für die aktuelle Temperatur mindestens einem Grenzwert für die Temperatur entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus, den Kurzbratmodus oder den Pfannenrührmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunstkonzentration unter dem ersten Grenzwert für die Dunstkonzentration und der Echtzeitwert für die aktuelle Temperatur unter dem Grenzwert für die Temperatur liegt, Bestimmen, dass der aktuelle Garmodus den Schmormodus oder den Kochmodus umfasst.

6. Aufforderungsverfahren (20) nach Anspruch 5, **dadurch gekennzeichnet, dass** das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Temperatur kontinuierlich mindestens dem Grenzwert für die Temperatur entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus oder den Kurzbratmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Temperatur kontinuierlich mindestens dem Grenzwert für die Temperatur entspricht und dann kontinuierlich unter dem Grenzwert für die Temperatur liegt, Bestimmen, dass der aktuelle Garmodus den Pfannenrührmodus umfasst.

7. Aufforderungsverfahren (20) nach Anspruch 2, **dadurch gekennzeichnet, dass** die aktuellen Überwachungsdaten einen Echtzeitwert für eine aktuelle Garzeit umfassen und das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration mindestens dem ersten Grenzwert für die Dunstkonzentration und der Echtzeitwert für die aktuelle Garzeit maximal einem Grenzwert für die Zeit entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus, den Kurzbratmodus oder den Pfannenrührmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunst-

konzentration unter dem ersten Grenzwert für die Dunstkonzentration und der Echtzeitwert für die aktuelle Garzeit über dem Grenzwert für die Zeit liegt, Bestimmen, dass der aktuelle Garmodus den Schmormodus oder den Kochmodus umfasst.

8. Aufforderungsverfahren (20) nach einem der Ansprüche 2 bis 7, **dadurch gekennzeichnet, dass** das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration kontinuierlich mindestens dem ersten Grenzwert für die Dunstkonzentration entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus oder den Kurzbratmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunstkonzentration kontinuierlich mindestens dem ersten Grenzwert für die Dunstkonzentration entspricht und dann kontinuierlich unter dem ersten Grenzwert für die Dunstkonzentration liegt, Bestimmen, dass der aktuelle Garmodus den Pfannenrührmodus umfasst.

9. Aufforderungsverfahren (20) nach Anspruch 8, **dadurch gekennzeichnet, dass** das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration mindestens dem ersten Grenzwert für die Dunstkonzentration entspricht und unter einem zweiten Grenzwert für die Dunstkonzentration liegt, Bestimmen, dass der aktuelle Garmodus den Kurzbratmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunstkonzentration mindestens dem zweiten Grenzwert für die Dunstkonzentration entspricht, Bestimmen, dass der aktuelle Garmodus den Frittiermodus umfasst.

10. Aufforderungsverfahren (20) nach einem der Ansprüche 2 bis 7, **dadurch gekennzeichnet, dass** das Bestimmen eines aktuellen Garmodus auf der Grundlage der aktuellen Überwachungsdaten Folgendes umfasst:

wenn der Echtzeitwert für die aktuelle Dunstkonzentration kontinuierlich unter dem ersten Grenzwert für die Dunstkonzentration liegt, Bestimmen, dass der aktuelle Garmodus den Kochmodus umfasst, und,
wenn der Echtzeitwert für die aktuelle Dunstkonzentration kontinuierlich mindestens dem

ersten Grenzwert für die Dunstkonzentration entspricht und dann kontinuierlich unter dem ersten Grenzwert für die Dunstkonzentration liegt, Bestimmen, dass der aktuelle Garmodus den Schmormodus umfasst.

11. Aufforderungsverfahren (20) nach Anspruch 1, **dadurch gekennzeichnet, dass** die aktuellen Überwachungsdaten einen Echtzeitwert für eine aktuelle Garzeit umfassen und das Bestimmen einer aktuellen Menge an Fettverschmutzung der Filterpatrone (11) auf der Grundlage des aktuellen Garmodus Folgendes umfasst:

Abrufen von Referenzmengen für die Fettverschmutzung, die verschiedenen Garmodi in einer Garzeiteinheit entsprechen, und Bestimmen einer dem aktuellen Garmodus entsprechenden Fettverschmutzung innerhalb des Echtzeitwerts für die aktuelle Garzeit auf der Grundlage der Referenzmengen für die Fettverschmutzung und Benutzen der Menge an Fettverschmutzung als aktuelle Menge an Fettverschmutzung.

12. Aufforderungsverfahren (20) nach Anspruch 1, **dadurch gekennzeichnet, dass** die aktuelle Dunstkonzentration eine aktuelle Konzentration von flüchtigen organischen Verbindungen (VOC) umfasst.

13. Aufforderungsvorrichtung (30) für eine Dunstabzugshaube (10), wobei die Dunstabzugshaube (10) eine Filterpatrone (11) umfasst, **dadurch gekennzeichnet, dass** sie Folgendes umfasst:

ein Abrufmodul, das so konfiguriert ist, dass es aktuelle Überwachungsdaten zur Dunstabzugshaube (10) abrufen, und
ein Verarbeitungsmodul, das so konfiguriert ist, dass es auf der Grundlage der aktuellen Überwachungsdaten einen aktuellen Garmodus bestimmt, auf der Grundlage des aktuellen Garmodus eine aktuelle Menge an Fettverschmutzung der Filterpatrone (11) bestimmt, zwecks Erhaltens einer aktuellen Gesamtmenge an Fettverschmutzung die aktuelle Menge an Fettverschmutzung und eine bisherige Menge an Fettverschmutzung addiert und, wenn die aktuelle Gesamtmenge an Fettverschmutzung mindestens einem Grenzwert für die Gesamtmenge an Fettverschmutzung entspricht, eine Meldung mit einer Aufforderung zum Ersetzen der Filterpatrone (11) auslöst.

14. Speichermedium, auf dem ein Computerprogramm gespeichert ist, **dadurch gekennzeichnet, dass** das Computerprogramm, wenn es auf einer Aufforderungsvorrichtung (30) nach Anspruch 13 ausge-

führt wird, die Schritte des Aufforderungsverfahrens (20) nach einem der Ansprüche 1 bis 12 implementiert.

15. Elektronisches Gerät mit einer Aufforderungsvorrichtung (30) nach Anspruch 13, **dadurch gekennzeichnet, dass** es Folgendes umfasst:
einen Prozessor und
einen Speicher, in dem ein auf dem Prozessor ausführbares Computerprogramm gespeichert ist, wobei
das Computerprogramm, wenn es von dem Prozessor ausgeführt wird, das Aufforderungsverfahren (20) nach einem der Ansprüche 1 bis 12 implementiert.
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16. Dunstabzugshaube (10) mit einer Filterpatrone (11) und einer Aufforderungsvorrichtung (30) nach Anspruch 13, **dadurch gekennzeichnet, dass** sie eine Steuereinheit umfasst, die so ausgelegt ist, dass sie das Aufforderungsverfahren (20) nach einem der Ansprüche 1 bis 12 implementiert.
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17. Dunstabzugshaube (10) nach Anspruch 16, **dadurch gekennzeichnet, dass** die aktuellen Überwachungsdaten einen Echtzeitwert für eine aktuelle Dunstkonzentration umfassen und die aktuelle Dunstkonzentration eine aktuelle Konzentration von flüchtigen organischen Verbindungen (VOC) und die Dunstabzugshaube (10) einen Gassensor zum Überwachen eines Echtzeitwerts für die aktuelle VOC-Konzentration umfasst.
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18. Dunstabzugshaube (10) nach Anspruch 16 oder 17, **dadurch gekennzeichnet, dass** die aktuellen Überwachungsdaten einen Echtzeitwert für eine aktuelle Luftfeuchtigkeit, einen Echtzeitwert für eine aktuelle Temperatur und/oder einen Echtzeitwert für eine aktuelle Garzeit umfassen, die Dunstabzugshaube (10) einen Luftfeuchtigkeitssensor, einen Temperatursensor und/oder eine Zeitschaltuhr umfasst, der Luftfeuchtigkeitssensor so konfiguriert ist, dass er den Echtzeitwert für die aktuelle Luftfeuchtigkeit überwacht, der Temperatursensor so konfiguriert ist, dass er den Echtzeitwert für die aktuelle Temperatur überwacht, und die Zeitschaltuhr so konfiguriert ist, dass sie den Echtzeitwert für die aktuelle Garzeit überwacht.
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Revendications

1. Procédé de communication (20) pour une hotte de cuisine (10), la hotte de cuisine (10) comprenant une cartouche de filtre (11), le procédé comprenant :
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l'obtention de données de surveillance actuelles

concernant la hotte de cuisine (10), la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles, la détermination d'une quantité d'adhérence de saleté grasse actuelle de la cartouche de filtre (11) sur la base du mode de cuisson actuel, l'addition de la quantité d'adhérence de saleté grasse actuelle et d'une quantité d'adhérence de saleté grasse antérieure pour obtenir une quantité d'adhérence de saleté grasse cumulée actuelle, et l'initiation, lorsque la quantité d'adhérence de saleté grasse cumulée actuelle est supérieure ou égale à un seuil de quantité d'adhérence de saleté grasse cumulée, d'informations invitant à un remplacement de la cartouche de filtre (11).

2. Procédé de communication (20) selon la revendication 1, caractérisé ce que les données de surveillance actuelles comprennent une valeur en temps réel d'une concentration de fumée actuelle, le mode de cuisson comprend un mode de friture profonde, un mode de cuisson à la poêle, un mode de cuisson sautée, un mode de cuisson par mijotage et un mode de cuisson à l'eau bouillante, et la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :

la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est supérieure ou égale à un premier seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de friture profonde, le mode de cuisson à la poêle ou le mode de cuisson sautée, et la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est inférieure au premier seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de cuisson par mijotage ou le mode de cuisson à l'eau bouillante.

3. Procédé de communication (20) selon la revendication 2, **caractérisé en ce que** les données de surveillance actuelles comprennent une valeur en temps réel d'une humidité actuelle et la détermination d'un mode de cuisson actuel basé sur les données de surveillance actuelles comprend :

la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est supérieure ou égale au premier seuil concentration de fumée et lorsque la valeur en temps réel de l'humidité actuelle est inférieure ou égale à un seuil d'humidité, que le mode de cuisson actuel comprend le mode de friture profonde, le mode de cuisson à la poêle ou le mode de cuisson sautée, et

- la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est inférieure au premier seuil de concentration de fumée et la valeur en temps réel de l'humidité actuelle est supérieure au seuil d'humidité, que le mode de cuisson actuel comprend le mode de cuisson par mijotage ou le mode de cuisson à l'eau bouillante. 5
4. Procédé de communication (20) selon la revendication 3, **caractérisé en ce que** la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :
- la détermination, lorsque la valeur en temps réel de l'humidité actuelle est continuellement inférieure ou égale au seuil d'humidité, que le mode de cuisson actuel comprend le mode de friture profonde ou le mode de cuisson à la poêle, et la détermination, lorsque la valeur en temps réel de l'humidité actuelle est continuellement inférieure ou égale au seuil d'humidité, puis est continuellement supérieure au seuil d'humidité, que le mode de cuisson actuel comprend le mode de cuisson sautée. 10 15 20 25
5. Procédé de communication (20) selon la revendication 2, **caractérisé en ce que** les données de surveillance actuelles comprennent une valeur en temps réel d'une température actuelle, et la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :
- la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est supérieure ou égale au premier seuil de concentration de fumée et la valeur en temps réel de la température actuelle est supérieure ou égale à un seuil de température, que le mode de cuisson actuel comprend le mode de friture profonde, le mode de cuisson à la poêle ou le mode de cuisson sautée, et la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est inférieure au premier seuil de concentration de fumée et la valeur en temps réel de la température actuelle est inférieure au seuil de température, que le mode de cuisson actuel comprend le mode de cuisson par mijotage ou le mode de cuisson à l'eau bouillante. 30 35 40 45 50
6. Procédé de communication (20) selon la revendication 5, **caractérisé en ce que** la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :
- la détermination, lorsque la valeur en temps réel de la température actuelle est continuellement supérieure ou égale au seuil de température, que le mode de cuisson actuel comprend le mode de friture profonde ou le mode de cuisson à la poêle, et la détermination, lorsque la valeur en temps réel de la température actuelle est continuellement inférieure au seuil de température, que le mode de cuisson actuel comprend le mode de cuisson sautée. 55
7. Procédé de communication (20) selon la revendication 2, **caractérisé en ce que** les données de surveillance actuelles comprennent une valeur en temps réel d'un temps de cuisson actuel, et la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :
- la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est supérieure ou égale au premier seuil de concentration de fumée et la valeur en temps réel du temps de cuisson actuel est inférieure ou égale à un seuil de temps, que le mode de cuisson actuel comprend le mode de friture profonde, le mode de cuisson à la poêle ou le mode de cuisson sautée, et la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est inférieure au premier seuil de concentration de fumée et la valeur en temps réel du temps de cuisson actuel est supérieure au seuil de temps, que le mode de cuisson actuel comprend le mode de cuisson par mijotage ou le mode de cuisson à l'eau bouillante. 60 65 70 75 80 85 90
8. Procédé de communication (20) selon l'une quelconque des revendications 2 à 7, **caractérisé en ce que** la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :
- la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est continuellement supérieure ou égale au premier seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de friture profonde ou le mode de cuisson à la poêle, et la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est continuellement supérieure ou égale au premier seuil de concentration de fumée, puis est continuellement inférieure au premier seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de cuisson sautée. 95 100
9. Procédé de communication (20) selon la revendication 8, **caractérisé en ce que** la détermination d'un

mode de cuisson actuel sur la base des données de surveillance actuelles comprend :

la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est supérieure ou égale au premier seuil de concentration de fumée et est inférieure à un deuxième seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de cuisson à la poêle, et
la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est supérieure ou égale au deuxième seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de friture profonde.

10. Procédé de communication (20) selon l'une quelconque des revendications 2 à 7, **caractérisé en ce que** la détermination d'un mode de cuisson actuel sur la base des données de surveillance actuelles comprend :

la détermination, lorsque la valeur en temps réel de la concentration de fumée actuelle est continuellement inférieure au premier seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de cuisson à l'eau bouillante, et
la détermination, lorsque la valeur en temps réel de la concentration de fumée est continuellement supérieure ou égale au premier seuil de concentration de fumée, puis est continuellement inférieure au premier seuil de concentration de fumée, que le mode de cuisson actuel comprend le mode de cuisson par mijotage.

11. Procédé de communication (20) selon la revendication 1, **caractérisé en ce que** les données de surveillance actuelles comprennent une valeur en temps réel d'un temps de cuisson actuel, et la détermination d'une quantité actuelle d'adhérence de saleté grasse de la cartouche de filtre (11) sur la base du mode de cuisson actuel comprend :

l'obtention de quantités de référence d'adhérence de saleté grasse correspondant à différents modes de cuisson au cours d'un temps de cuisson unitaire, et
la détermination, sur la base de quantités de référence d'adhérence de saleté grasse, d'une quantité d'adhérence de saleté grasse correspondant au mode de cuisson actuel dans la valeur en temps réel de durée du temps de cuisson actuel, et l'utilisation de la quantité d'adhérence de saleté grasse à titre de quantité d'adhérence de saleté grasse actuelle.

12. Procédé de communication (20) selon la revendica-

tion 1, **caractérisé en ce que** la concentration de fumée actuelle comprend une concentration actuelle de composés organiques volatiles (COV).

13. Dispositif de communication (30) pour une hotte de cuisine (10), la hotte de cuisine (10) comprenant une cartouche de filtre (11), **caractérisé en ce qu'il** comprend :

un module d'obtention, configuré pour obtenir des données de surveillance actuelles concernant la hotte de cuisine (10), et
un module de traitement, configuré pour déterminer un mode de cuisson actuel sur la base des données de surveillance actuelles, et déterminer une quantité actuelle d'adhérence de saleté grasse de la cartouche de filtre (11) en fonction du mode de cuisson actuel, additionner la quantité d'adhérence de saleté grasse actuelle et une quantité d'adhérence de saleté grasse antérieure pour obtenir une quantité d'adhérence de saleté grasse cumulée actuelle, et initier, lorsque la quantité d'adhérence de saleté grasse cumulée actuelle est supérieure ou égale à un seuil de quantité d'adhérence de saleté grasse cumulée, des informations invitant à un remplacement de la cartouche de filtre (11).

14. Support de stockage, stockant un programme informatique, **caractérisé en ce que** le programme informatique, lorsqu'il est exécuté sur un dispositif de communication (30) selon la revendication 13, met en œuvre les étapes du procédé de communication (20) selon l'une quelconque des revendications 1 à 12.

15. Dispositif électronique comprenant un dispositif de communication (30) selon la revendication 13, **caractérisé en ce qu'il** comprend :

un processeur, et
une mémoire, stockant un programme informatique exécutable sur le processeur, dans lequel le programme informatique, lorsqu'il est exécuté par le processeur, met en œuvre le procédé de communication (20) selon l'une quelconque des revendications 1 à 12.

16. Hotte de cuisine (10), comprenant une cartouche de filtre (11) et un dispositif de communication (30) selon la revendication 13, **caractérisé en ce qu'elle** comprend une unité de commande, adaptée pour mettre en œuvre le procédé de communication (20) selon l'une quelconque des revendications 1 à 12.

17. Hotte de cuisine (10) selon la revendication 16, **caractérisée en ce que** les données de surveillance

actuelles comprennent une valeur en temps réel d'une concentration actuelle de fumées, et la concentration actuelle de fumées comprend une concentration de composés organiques volatiles (COV), et la hotte de cuisine (10) comprend un capteur de gaz pour surveiller une valeur en temps réel de la concentration actuelle de COV. 5

18. Hotte de cuisine (10) selon la revendication 16 ou 17, **caractérisée en ce que** les données de surveillance actuelles comprennent au moins une valeur parmi une valeur en temps réel d'une humidité actuelle, une valeur en temps réel d'une température actuelle, ou une valeur en temps réel d'un temps de cuisson actuel, et la hotte de cuisine (10) comprend au moins un élément parmi un capteur d'humidité, un capteur de température et un chronomètreur, le capteur d'humidité est configuré pour surveiller la valeur en temps réel de l'humidité actuelle, le capteur de température est configuré pour surveiller la valeur en temps réel de la température actuelle et le chronomètreur est configuré pour surveiller la valeur en temps réel du temps de cuisson actuel. 10 15 20

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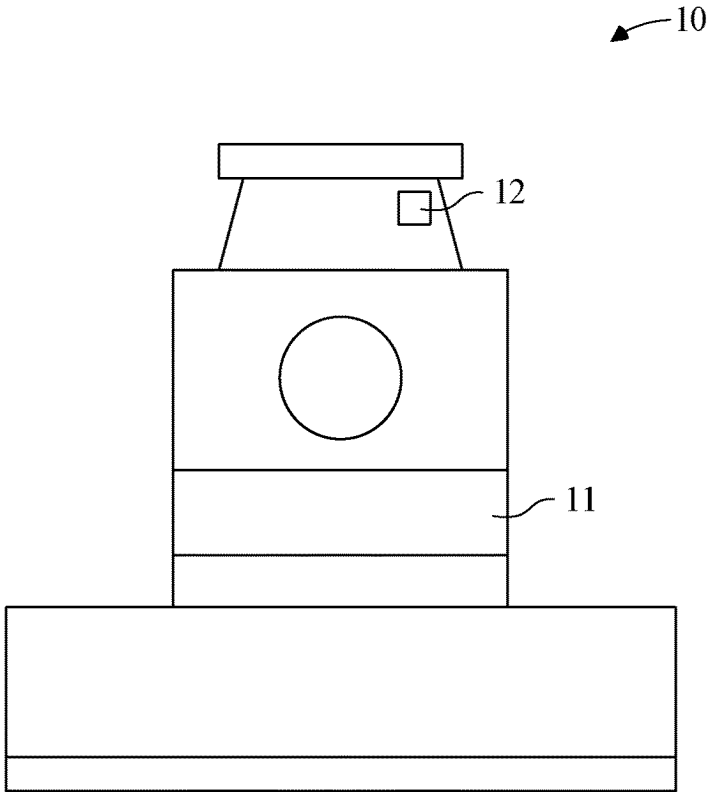


FIG. 1

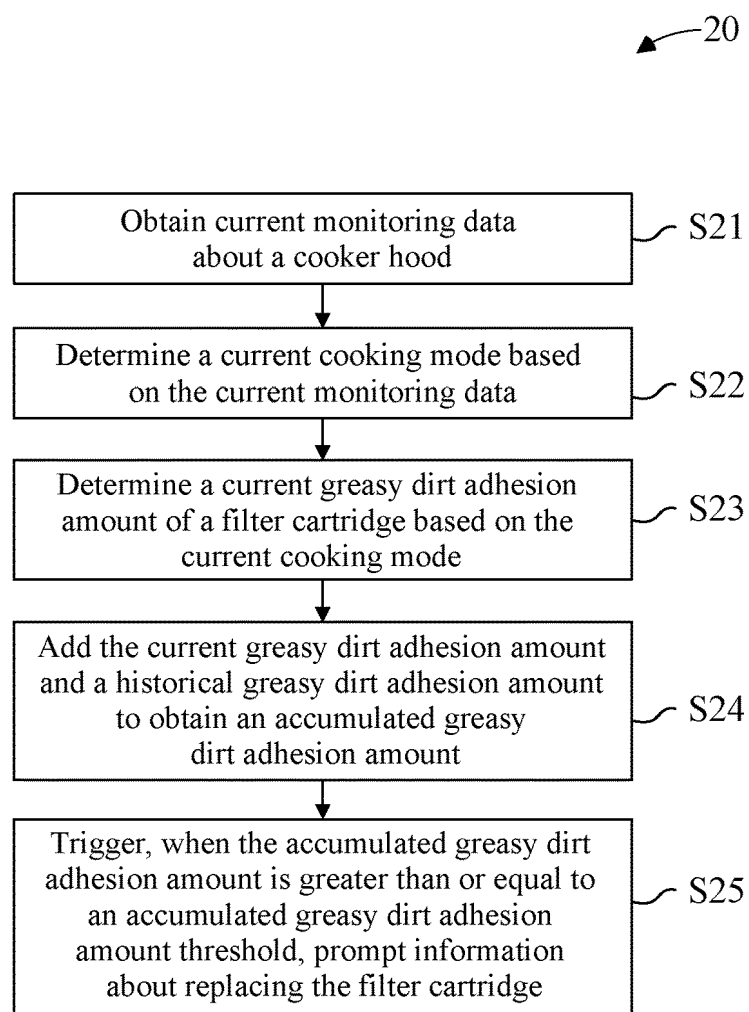


FIG. 2

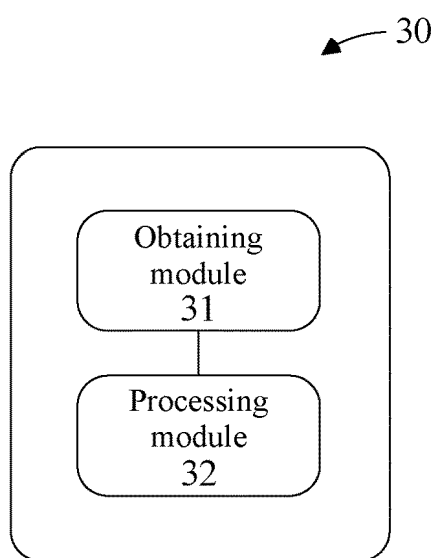


FIG. 3

REFERENCES CITED IN THE DESCRIPTION

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