Kitchen appliance

FIELD OF THE INVENTION

The present invention relates to a kitchen appliance comprising a cooking compartment and a lid for sealing the cooking compartment.

BACKGROUND OF THE INVENTION

Over the last decades, food consumption has increasingly focused on the health benefits of food products. This for instance has led to an increased focus on bioactive compounds in foods such as super foods, such as bioactive compounds that have a health benefit, e.g. vitamins, anti-oxidants and so on.

One aspect that has drawn considerable attention is the retention of such bioactive compounds during food preparation, in particular cooking. Many bioactive compounds are temperature-labile, i.e. decompose at elevated temperatures, such that prolonged exposure to such elevated temperatures may diminish the nutritional value of the cooked food product.

For example, pigments in vegetables and fruit have recognized biological activity but are temperature-labile, which can be observed by a colour change during cooking, e.g., boiling, frying or steaming, of vegetables or fruit. This is schematically depicted in FIG. 1, which is a schematic graph depicting the greenness G in arbitrary units (au) of a green vegetable such as broccoli as a function of cooking time T in minutes. From this graph, it can be observed that the greenness of the green vegetable deteriorates with increased cooking time, which can be associated with a loss of pigment in the vegetable. This can be explained as follows. The chlorophyll responsible for the greenness of green vegetables is broken down by chlorophyllase by hydrolysis of the chlorophyll ester bond to yield chlorophyllide and phytol. The reaction speed of this hydrolysis reaction is particularly high at elevated temperatures in the abundance of water, e.g. at high humidity. Therefore, a reduction in cooking time and/or a reduction of humidity during cooking, e.g. boiling, frying or steaming, is desirable from a health perspective in order to retain the largest possible amounts of pigments in such food products.

Unfortunately, a reduction in cooking time and/or a reduction in humidity may have a received detrimental effect on the texture of such food products, for example the food product may be perceived as too firm to eat. This is because the softening of the plant skin requires a high water content due to the fact that the pectin and hemicellulose that hold the cell walls together in the skin of plants need to be dissolved and dispersed during the cooking process in order to cause the cell wall separation responsible for the perception of the softening of plant skins, for which a high water content is required.

Therefore, there is a need for a kitchen appliance that can control the cooking process of food products such that the cooked food products have a desirable texture whilst retaining as much of the temperature-labile bioactive compounds therein.

JP 2009002552 A discloses a heating cooker using overheated steam to obtain a juicy finish and to make a delicious burnt color. The steam in the heating chamber is rapidly exhausted from the exhaust port by the exhaust fan when the door is opened during the cooking operation without starting the heating cooking operation by the superheated steam. Thus, when the door opens, it protects the user from the risk of being exposed to superheated steam.

WO 2013/099359 A1 discloses a heating cooking device, which detects the electromagnetic waves, the intensity of which has been changed by striking the object to be heated, thus identifying changes in the moisture content of the object to be heated and thereby assessing the cooking state of the object to be heated.

US 2014/0311360 A1 discloses a commercial oven including motorized dampers allowing the oven to move automatically between a close-state high humidity operating mode and an open-state low humidity operating mode according to the user input reflecting a desired cooking process. A drawback of this oven is that it is switched between the close-state and open-state operating modes based on user input. User error may prevent a food product prepared in the oven from being correctly prepared and the programs available to the user may not be suitable for preparing a particular food product in a desired manner.

WO0052392 discloses a device for terminating cooking and indicating status. The end of cooking or baking in an oven may be determined by presets or by the measurement of suitable parameters. The end triggers an automatic opening of the door in order to advertise the status. The door opening may be combined with a sudden change in the strength of the cavity light when the operation is automatic, whereas manual closing and opening causes the light to fade out or in. A partial opening to signal end of cooking and

venting is accompanied by flashes of light. A humidity sensor is connected to the control electronics which in turn controls the blower and release means for the door.

SUMMARY OF THE INVENTION

The present invention seeks to provide a kitchen appliance that facilitates the cooking of a food product comprising temperature-labile compounds in such a manner that the retention of such compounds in the cooked food product is increased.

According to an aspect, there is provided a kitchen appliance comprising a cooking compartment including a sensor arrangement comprising at least one of a humidity sensor and a colorimeter arranged to determine a colour of a food product in the cooking compartment; a lid for sealing the cooking compartment; and a controller responsive to the sensor arrangement, wherein the controller is adapted to generate a control signal for triggering an opening of the cooking compartment in response to a sensor signal from the sensor arrangement. Such a kitchen appliance facilitates the increased retention of temperature-labile nutrients in the cooked food product by the generation of a control signal signalling high humidity and/or a change in colour of the food product during cooking, which control signal may be used to trigger the opening of the closed cooking compartment in order to reduce the humidity in the cooking compartment, thereby slowing down the breakdown of such temperature-labile nutrients. In accordance with the invention, the controller is further adapted to generate a further control signal for triggering a sealing of the cooking compartment after a delay from generating the control signal. In this manner, the loss of excess water vapor and/or heat from the cooking compartment may be avoided.

The sensor arrangement may comprise the colorimeter, wherein the controller is adapted to generate the control signal in response to a sensor signal from the colorimeter. In this embodiment, the preparation of the food product is controlled by monitoring colour changes in the food product during its preparation. In this manner, the preparation process may be controlled to maintain a particular colour of the food product, which as previously explained equates to the preservation of pigments having nutritious value in the prepared food product.

Alternatively or additionally, the sensor arrangement comprises the humidity sensor, and wherein the controller is adapted to generate the control signal in response to a sensor signal from the humidity sensor. In this embodiment, the preparation of the food product is controlled by monitoring the humidity within the cooking compartment such that upon exposure of the food product to an environment having a certain humidity, the humidity

within the cooking compartment may be reduced in order to prevent decomposition of the temperature-labile nutrients in the food product.

The controller may be further adapted to generate the further control signal in response to a further sensor signal from the sensor arrangement. This ensures that humidity in the cooking compartment is accurately controlled. To this end, the sensor arrangement may comprise the humidity sensor, and the controller may be further adapted to generate the further control signal in response to a further sensor signal from the humidity sensor.

The kitchen appliance may further comprise a timer, wherein the controller is further adapted to generate the control signal in response to said timer. This allows for the food product to be exposed to certain conditions, e.g. a certain humidity detected by the humidity sensor and/or a food product colour detected by the colorimetric sensor for a defined period of time in order to control the preparation of the food product based on the timer information provided to the controller by the timer.

The kitchen appliance may be any suitable type of kitchen appliance in which a food product may be cooked or steamed. For example, the kitchen appliance may be an electric wok or an electric multi-cooker.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention are described in more detail and by way of non-limiting examples with reference to the accompanying drawings, wherein

FIG. 1 schematically depicts the greenness of a vegetable such as broccoli as a function of cooking time;

FIG. 2 schematically depicts a kitchen appliance according to an embodiment;

FIG. 3 schematically depicts a kitchen appliance according to another embodiment;

FIG. 4 schematically depicts the kitchen appliance of FIG. 3 in an opened configuration;

FIG. 5 schematically depicts a kitchen appliance according to yet another embodiment;

FIG. 6 schematically depicts the kitchen appliance of FIG. 5 in an opened configuration;

FIG. 7 schematically depicts a kitchen appliance according to yet another embodiment;

FIG. 8 schematically depicts the kitchen appliance of FIG. 7 in an opened configuration;

FIG. 9 schematically depicts a kitchen appliance according to yet another embodiment;

FIG. 10 is a graph depicting firmness and greenness of broccoli as a function of the amount of steam in a cooking compartment of a kitchen appliance; and

FIG. 11 is a graph depicting the firmness of broccoli stalks as a function of cooking time.

DETAILED DESCRIPTION OF THE EMBODIMENTS

It should be understood that the Figures are merely schematic and are not drawn to scale. It should also be understood that the same reference numerals are used throughout the Figures to indicate the same or similar parts.

In the context of the present application, a temperature-labile compound, e.g. a temperature-labile nutrient, is a compound that decomposes or otherwise degrades at elevated temperatures, e.g. temperatures typically associated with food cooking, e.g. about T = 100°C or higher, and which decomposition and degradation is accelerated at increased levels of humidity at such elevated temperatures.

FIG. 1 schematically depicts a cross-section of a kitchen appliance 10 according to an embodiment of the present invention. The kitchen appliance 10 comprises a heating element 11, here thermally coupled, e.g. in physical contact with, a floor of a cooking compartment 20 by way of non-limiting example. Alternatively or additionally, the heating element 11 may be thermally coupled with a side wall of the cooking compartment 20. Any suitable coupling arrangement between the heating element 11 and the cooking compartment 20 may be contemplated; for example, the heating element 11 may be integrated in a floor and/or side wall of the cooking compartment 20. Any suitable heating element 11 may be

used in the kitchen appliance 10. Typically, the heating element 11 is an electric heating element powered by the provision of electricity to the heating element. However, it should be understood that in some embodiments the heating element 11 may be omitted from the kitchen appliance 10, in which case the cooking compartment may be heated by an external heat source such as a hob, oven or the like.

The floor and side wall(s) of the cooking compartment 20 may be made of any suitable heat-conductive material, e.g. a metal or metal alloy surface, which surface may be coated with a coating layer such as a non-stick layer, e.g. a polytetrafluoroethylene (Teflon®) layer or the like. The cooking compartment 20 comprises an inner volume in which a food product to be prepared by cooking, (stir-)frying, or steaming may be placed, optionally together with an amount of water or oil.

The kitchen appliance 10 may further comprise a lid 30 for hermetically sealing the cooking compartment 20 in order to create an enclosed space in which the food product 1 may be cooked or steamed within the enclosed space, for example by increasing the humidity within the enclosed space, e.g. by building up steam. The lid 30 may be a separate component of the kitchen appliance 10 or may be an integral part of the cooking compartment 20, e.g. hinged to the cooking compartment 20.

The kitchen appliance 10 further comprises a sensor arrangement 15 within the cooking compartment 20. The sensor arrangement 15 comprises at least one of a humidity sensor and a colorimetric sensor. The humidity sensor when present is adapted to detect the humidity within the cooking compartment 20 and the colorimetric sensor when present is adapted to detect a colour of the food product being prepared within the cooking compartment 20. In a preferred embodiment, the sensor arrangement 15 comprises at least the colorimetric sensor. The sensor arrangement 15 may be provided in any suitable manner, e.g. as an integral part of a side wall of the cooking compartment 20 and/or lid 30 or at least some sensors of the sensor arrangement 15 may be attached to the side wall of the cooking compartment 20 and/or the lid 30.

The kitchen appliance 10 further comprises a controller 17 coupled to the sensor arrangement 15 such that the controller 17 is adapted to process a sensor signal produced by the humidity sensor and/or colorimetric sensor to determine the humidity within the cooking compartment 20 and/or the colour of the food product being prepared during the preparation process of the food product. The controller 17 is further adapted to generate a control signal indicative of the need to lower the humidity of the atmosphere in the cooking

compartment 20 in response to the processed sensor signal being indicative of the humidity in the cooking compartment 20 reaching a defined threshold.

In case of the sensor arrangement 15 comprising a humidity sensor, the humidity in the cooking compartment 20 may be directly derived from the sensor signal provided by the humidity sensor.

In case of the sensor arrangement 15 comprising a colorimetric sensor, the humidity in the cooking compartment 20 may be derived from the rate of colour change of the food product being prepared within the cooking compartment 20. For example, the kitchen appliance 20 may comprise a data storage device (not shown) comprising colour change data as a function of time and humidity within the cooking compartment 20, with the controller 17 adapted to access the data storage device to match a series of colorimetric sensor readings to a particular colour change data set based on a change in colour of the food product derived from the series of colorimetric sensor readings over a period of time, such that the humidity level within the cooking compartment 20 may be indirectly determined by identifying the humidity level associated with the matching data set. Alternatively, the controller 17 may be adapted to generate the control signal in response to the colour of the food product reaching a defined value as determined with the colorimetric sensor, in which case the humidity level does not need to be actually determined or estimated.

In an embodiment, the kitchen appliance 10 may further comprise a timer (not shown) to which the controller 17 may be responsive. For example, the controller 17 may be adapted to delay the generation of the control signal by a defined amount of time upon detection of a particular precondition within the cooking compartment 20 such as a particular humidity level or a particular colour value of the food product as determined from the one or more sensor signals provided by the sensor arrangement 15 as previously explained. The controller 17 for example may be adapted to engage the timer upon detecting such a particular precondition in order to continue the cooking process for a determined period of time as indicated by the timer before generating the control signal for triggering the opening of the lid 30. In this manner, a food product may be prepared, e.g. cooked, (stir-)fried or steamed, for a set period of time, e.g. at a high humidity level, for instance in order to prepare the food product in accordance with a particular cooking recipe. The period of time or delay between the determination of the precondition and the generation of the control signal may be pre-programmed into the controller 17 or may be user-specified. To this end, the kitchen appliance 10 may comprise any suitable user interface that facilitates the specification of this period of time.

In an embodiment, the kitchen appliance 10 may comprise a menu-based user interface that allows the user to select a particular preparation of the food product, e.g. to control the firmness or crunchiness of the food product. The various menu options may cause the controller 17 to apply different humidity levels and/or exposure times of the food product to a particular humidity level in order to control the firmness or crunchiness of the food product in accordance with the selected user preference. For example, the user menu may allow the user to select a particular food product, e.g. a green vegetable such as broccoli, and specify how the selected food product should be prepared, e.g. firm, medium or soft. Each selection option may be linked to a specific cooking time at high humidity, e.g. 4 minutes for firm, 5 minutes for medium and 6 minutes for soft in case of broccoli, with the selection of a particular option causing the controller 17 to delay the generation of the control signal by the associated amount of time as indicated by the timer before generating the control signal to lower the humidity in the cooking compartment 20.

In FIG. 1, the kitchen appliance 10 further comprises a sensory output device 19 responsive to the control signal of the controller 17. In the context of the present application, a sensory output device is a device that can produce an output that can be detected by at least one of the senses of the human, e.g. an optical output, an audible output, and so on. Any suitable embodiment of such a sensory output device 19 may be contemplated. Non-limiting examples of suitable embodiments include a display device, a light emitting diode, a loudspeaker or combinations thereof. The sensory output device 19 in some embodiments may form part of a user interface of the kitchen appliance 10 through which a user can control the kitchen appliance. The control signal generated by the controller 17 causes the sensory output device 19 to generate a warning signal such as a warning message produced on a display device, a constantly or intermittently illuminated light emitting diode, a warning sound produced by a loudspeaker and so on to trigger a user to lift the lid 30 off the cooking compartment 20 in order to let water vapour (steam) escape from the cooking compartment 20, thereby lowering the humidity in the cooking compartment 20. As previously explained, because the decomposition reaction of many temperature-labile nutrients, e.g. plant pigments, is a rate-limited by the amount of available water, lowering the humidity in the cooking compartment 20 causes a slow-down of such decomposition reactions, thereby ensuring that upon completion of the preparation of the food product with the kitchen appliance 10, an increased amount of such temperature-labile nutrients is preserved in the prepared food product. This is particularly applicable to vegetables, e.g. green vegetables such as broccoli or the like, although it should be understood that the

present invention is not limited thereto and may be applied to the preparation of any food product comprising such temperature-labile nutrients.

The controller 17 is further adapted to generate a further control signal in response to a further sensor signal from the sensor arrangement 15 indicative of the humidity within the cooking compartment 20 being sufficiently reduced. For example, such a further sensor signal may be provided by a humidity sensor or by a colorimetric sensor, with the controller 17 in the latter case optionally arranged to monitor a rate of colour change of the food product from a series of sensor readings provided by the colorimetric sensor, with a reduction in the rate of colour change being indicative of a lowering of the humidity within the cooking compartment 20. In this embodiment, the controller 17 may be adapted to generate a further control signal upon directly or indirectly determined humidity level within the cooking compartment 20 reaching a defined threshold. Alternatively, the controller 17 may be further adapted to generate the further control signal in response to the timer, e.g. after a certain amount of time following the generation of the control signal. The controller 17 may be adapted to provide the further control signal to the sensory output device 19 in order to facilitate the closure of the cooking compartment 20 by placement of the lid 30 thereon by the user of the kitchen appliance. To this end, the sensory output device 19 may be adapted to generate a further warning signal to trigger the user to place the lid 30 back onto the cooking compartment 20. The further warning signal may be different to the warning signal such as to avoid confusion of the user between the two signals.

In an embodiment, the controller 17 may be further adapted to control the heating element 11 of the kitchen appliance 10 in response to the sensor signal from the sensor arrangement 15 processed by the controller 17. For example, the controller 17 may be adapted to disable, i.e. switch off, the heating element 11 after a defined period of time following the detection of a particular precondition such as a particular humidity level or a particular colour of the food product to ensure that the food product is cooked to a desired degree. The defined period of time may be a user-defined period of time. For example, the kitchen appliance 10 may have a user interface (not shown), with the controller 17 being responsive to the user interface. A user may specify the desired period of time through the user interface in order to specify to which degree the food product should be cooked. For example, the user interface may include a lookup table or the like in which a user-specified cooking degree is linked to a defined period of time for which the food product should be cooked after the detection of the particular precondition, with the user interface adapted to

configure the controller 17 to disable the heating element 11 after the defined period of time associated with the degree of cooking specified by the user on the user interface.

At this point, it is noted that the controller 17 may be implemented in any suitable manner. The controller 17 may be implemented using one or more dedicated hardware devices, e.g. application-specific integrated circuits, microcontrollers order like, or may be implemented at least in part in software on a general-purpose processor arrangement within the kitchen appliance 10. Other suitable implementations will be immediately apparent to the skilled person in the art.

In the kitchen appliance of FIG. 2, the controller 17 is adapted to generate a control signal and provides the control signal to a sensory output device 19 in order for a user to manually open the sealed cooking compartment 20 of the kitchen appliance in order to lower the humidity level in the cooking compartment to prevent excessive decomposition of temperature-labile nutrients, e.g. plant pigments caused by prolonged cooking under high humidity. FIG. 3 schematically depicts a cross-section of an alternative embodiment of the kitchen appliance 10, in which the lid 31 is hinged to the cooking compartment 20 by an actuated hinge 31 under control of the controller 17. Upon generation of the aforementioned control signal by the controller 17, the actuated hinge responds to the control signal by altering the position of the lid 31 from a closed position as shown in FIG. 3 to an open position as shown in FIG. 4, thereby allowing water vapour (steam) to escape from the cooking compartment 20 through the gap between the cooking compartment 20 and the opened a lid 30 as indicated by the arrows in FIG. 4. The actuated hinge 31 may be further responsive to the aforementioned further control signal, which triggers the actuated hinge from altering the position of the lid 31 from the opened position as shown in FIG. 4 to the closed position as shown in FIG. 3.

FIG. 5 schematically depicts a cross-section of an alternative embodiment of a kitchen appliance 10 adapted to automatically release water vapour from the cooking compartment 20. In this embodiment, the lid 30 comprises an actuated valve 33 responsive to the controller 17, which actuated valve 33 may be switched between a closed position as shown in FIG. 5 and an opened position as schematically depicted in FIG. 6, which allows for the water vapour to exit the cooking compartment 20 through the opened actuated valve 33, e.g. in response to the controller 17 deriving a particular humidity level or a particular food product colour from the sensor signal(s) received from the sensor arrangement 15. The actuated valve 33 may be further responsive to the aforementioned further control signal, which triggers the actuated valve 33 to return to the closed position as shown in FIG. 5. Any

suitable embodiment of such an actuated valve 33 may be contemplated. In an embodiment, the actuated valve 33 comprises a fan, which fan is switched on upon receiving the control signal of the controller 17, which has the advantage that the water vapour is forced out of the cooking compartment 20, thereby reducing the humidity level within the cooking compartment 20 particularly quickly.

The actuated valve 33 may receive the control signal from the controller 17 in any suitable manner. For example, in an embodiment in which the lid 30 is permanently attached to the cooking compartment 20, the controller 17 may be wired to the actuated valve 33 and provide the control signal (or further control signal) over such wired connection. Alternatively, the lid 30 may be removable from the cooking compartment 20, in which case each of the cooking compartment 20 and the lid 30 may comprise a contact, which contacts are brought into physical contact with each other upon correct placement of the lid 30 on the cooking compartment 20, which contacts established a wired connection between the controller 17 and the actuated valve 33. In yet another embodiment, the actuated valve 33 may be wirelessly connected to the controller 17, in which case the controller 17 may comprise a wireless transmitter and the actuated valve may comprise a wireless receiver for receiving wireless communications from the wireless transmitter. Any suitable wireless communication protocol may be used in this embodiment. A NFC communication protocol in which the wireless receiver is a passive receiver comprising an induction coil or the like is specifically mentioned.

In the embodiment of the kitchen appliance 10 schematically depicted in FIG. 5 and 6, the actuated valve 33 is located in the lid 30. However, the actuated valve 33 may be located in any suitable location within the kitchen appliance 10. FIG. 7 schematically depicts a cross-section of an embodiment of the kitchen appliance 10 in which the actuated valve 33 is located in a side wall of the cooking compartment 20. In FIG. 7, the actuated valve 33 is in the closed position, whereas in FIG. 8 the actuated valve 33 is shown in the opened position in response to the control signal generated by the controller 17 as previously explained to allow water vapour to escape from the cooking compartment 20 as indicated by the arrows in FIG. 8. As before, any suitable embodiment of the actuated valve 33 may be contemplated. For example, the actuated valve 33 may include a fan for forcing the water vapour from the cooking compartment 20 as previously explained.

In the embodiments of the kitchen appliance 10 as schematically depicted by FIG. 2-8, the heating element 11 of the kitchen appliance 10 is a heating element for conductively heating the floor and/or side wall(s) of the kitchen appliance 10. In an

alternative embodiment, a cross-section of which is schematically depicted in FIG. 9, the heating element 11 may be a convection heating element generating hot air and circulating the hot air through the cooking compartment 20 as indicated by the opposing arrows in FIG. 9. In this embodiment, the kitchen appliance 10 further comprises the sensory output device 19 responsive to the controller 17 although it should be understood that it is equally feasible that the sensory output device 19 in this embodiment is supplemented by replaced by an actuated member such as the actuated hinge 31 or the actuated valve 33 to yield the kitchen appliance 10 in which the humidity level in the cooking compartment 20 is automatically controlled.

The kitchen appliance 10 of the above embodiments may be any suitable kitchen appliance in which a food product may be cooked, e.g. through steaming, frying, cooking or any other suitable cooking technique. For example, the kitchen appliance 10 may be a multi-cooker, electric steamer or auto-wok although other embodiments will be apparent to the skilled person.

FIG. 10 is a graph depicting the stalk firmness (left hand Y-axis) and greenness (right-hand Y-axis) in arbitrary units of broccoli steamed in a multi-cooker at different levels of relative humidity (in %, x-axis) for 15 minutes, after which the greenness and firmness were determined. The greenness measurements are interconnected by a dashed line for clarity reasons only; this should not be construed to mean that the greenness is expected to assume values on the dashed line in between measurement points. These measurements clearly demonstrate that stalk firmness and greenness of the broccoli decreases with increasing humidity levels.

FIG. 11 is a graph depicting the stalk firmness (a.u.) of broccoli steamed at high humidity (close to 100%) as a function of time (min). This clearly demonstrates that the stalk firmness can be controlled by controlling the exposure time of the vegetable to high humidity levels.

It should be noted that the above-mentioned embodiments illustrate rather than limit the invention, and that those skilled in the art will be able to design many alternative embodiments without departing from the scope of the appended claims. In the claims, any reference signs placed between parentheses shall not be construed as limiting the claim. The word "comprising" does not exclude the presence of elements or steps other than those listed in a claim. The word "a" or "an" preceding an element does not exclude the presence of a plurality of such elements. The invention can be implemented by means of hardware comprising several distinct elements. In the device claim enumerating several means, several

of these means can be embodied by one and the same item of hardware. The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.

CLAIMS:

1. A kitchen appliance (10) comprising:

a cooking compartment (20) including a sensor arrangement (15) comprising at least one of a humidity sensor and a colorimeter arranged to determine a colour of a food product in the cooking compartment;

a lid (30) for sealing the cooking compartment; and

a controller (17) responsive to the sensor arrangement, wherein the controller is adapted to generate a control signal for triggering an opening of the cooking compartment in response to a sensor signal from the sensor arrangement, wherein the controller (17) is further adapted to generate a further control signal for triggering a sealing of the cooking compartment (20) after a delay from generating the control signal.

2. The kitchen appliance (10) of claim 1, wherein the sensor arrangement (15) comprises the colorimeter, and wherein the controller (17) is adapted to generate the control signal in response to a sensor signal from the colorimeter.

3. The kitchen appliance (10) of any of claims 1-2, wherein the controller (17) is further adapted to generate the further control signal in response to a further sensor signal from the sensor arrangement (15).

4. The kitchen appliance (10) of claim 3, wherein the sensor arrangement (15) comprises the humidity sensor, and wherein controller (17) is further adapted to generate the further control signal in response to the further sensor signal from the humidity sensor.

5. The kitchen appliance (10) of any of claims 1-4, further comprising a timer, wherein the controller (17) is further adapted to generate the control signal in response to said timer.

ABSTRACT:

A kitchen appliance (10) is disclosed comprising a cooking compartment (20) including a sensor arrangement (15) comprising at least one of a humidity sensor and a colorimeter arranged to determine a colour of a food product in the cooking compartment, as well as a lid (30) for sealing the cooking compartment. The kitchen appliance (10) further comprises a controller (17) responsive to the sensor arrangement, wherein the controller is adapted to generate a control signal for triggering an opening of the cooking compartment in response to a sensor signal from the sensor arrangement.