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## Cooking System

AB Electrolux - Group Patents

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## Cooking System

This disclosure describes a cooking hob, particularly an induction cooking hob. Such cooking hob usually comprises a cooking surface to support cookware items to be heated. The cooking surface is hot after cooking processes are performed. There are several ways known on how to indicate residual heat of a cooking zone of such cooking surface of a hob.

The residual heating feature is a function created in order to inform the consumer when a zone in an electric hob (mainly induction appliances) is still warm, in a way to prevent from safety risks. Usually this feature is presented as a light indication in the user interface, and for each zone, there is a respective light indication. Additionally, or alternatively, some products in the market use this indication as a light around the zone, as for example a light circle. Furthermore, the described project utilizes light for communication, indication and aesthetics. Thus, when the appliance is in OFF state, its appearance is an "all black" surface with only a power button and/or a logo printed on the glass being visible. Below the glass plate, the heating elements (in this case induction coils) are placed.

In more modern hobs, light sources are placed near to the coil, or in the center of the coil, capable of enlightening the respective cooking zones, which is visible to the user, on the hob surface. Thereby, upon pressing the power button, all the lights may be made visible for the consumer.

The present disclosure is intended to indicate the residual heating in a different approach, when compared to available products. The feature is developed to be used in an induction hob, said hob having the so called Pure concept. Pure means that preferably all indications to the user are done with light and especially glass markings can thus be reduced, leading to a more elegant "pure" all black design.

After a cooking process is finished in a specific cooking zone, said cooking zone, particularly light markings, which indicate the cooking zone, will remain enlightened, even if the hob is set to an OFF state.

Additionally, said light will decrease its brightness, according to the zone temperature, which is also cooling down. Preferably, light levels as well as temperature levels (thresholds) can be used, in order to set a brightness level in accord to a temperature level. This dimming effect can be done in steps or the light can be more or less be continuously decreased in intensity.

Even though the induction hobs are faster than other electric hobs to cool down, it takes some time until it is safely cool to be touched by the consumer, in the specific zone where a cooking process was developed.

This disclosure contributes against safety risks, because indicates directly on the cooking area, in which zone there is still any residual heating.

With current products, when it is an user interface indication, it is not easily visible the sign for residual heating. With this new approach, besides being more visible, it has an algorithm to show gradual stages of heating. As the zone is cooling down, the light displayed in the zone reduces its brightness, until it reaches the last stage, that it is completely off.

In order to develop this feature, a software modification is implemented in the control board which drives the hob lights. The improved board is able to drive and dim individually the cooking zone indication lights on the cooking zones. The main process starts by reading a zone temperature, using a temperature sensor, which is a standard process on induction hobs, and based on the measured temperature level, a respective brightness value is applied on the LED illuminating this specific zone.

It is possible to have three consecutive temperature levels (with respective tolerances), that will result in three different brightness levels. Additionally, the brightness levels increase as the measured temperature in the zone also increases and vice versa.