CLAIMS

1. A method to select the smoke treating unit (3) of a system (1) of at least one pre-defined coffee beans roasting apparatus (2) and an associated smoke treating unit configured to treat the smoke emitted by said at least one roasting apparatus when said system is used in a room (10),

wherein said smoke treating unit is selected from a group of different smoke treating units, said smoke treating units differing by their performances to treat contaminants of the smoke, said method comprising the steps of :

- receiving room data input indicating the country of the room and providing directly or indirectly the ventilation of said room,
- receiving roasting use data input indicating the intended use of the at least one roasting apparatus during a pre-determined period in order to determine the quantity of each contaminant produced by said at least one roasting apparatus during said period for said use, said operation of determining the quantity comprising the steps of :
  . getting access to the quantity of each contaminant produced by the pre-defined roasting apparatus during the operation of roasting a specific quantity of a specific type of coffee beans up to a specific roasting level, and
  . based on the roasting use data and on the said accessible quantities, calculating the quantities produced at each roasting operation according to the indicated intended use, and
  . based on the intended use over the pre-determined period, determining the quantity of each contaminant produced by the roasting apparatus,
- for each system of the at least one roasting apparatus and of one of the smoke treating units, calculating,
  . from ~~the~~ said determined quantity of each contaminant produced by the at least one roasting apparatus during the period for said use,
  . from the performance in reducing the level of said contaminant by the smoke treating unit, and
  . from the provided ventilation rate,

the concentration of each contaminant present in the room during the period, by:

. getting access, for each smoke treating unit, to the performance of reduction of the level of each contaminant by said smoke treating unit.

. determining the quantity of each contaminant dispensed by the system during the period from the determined quantity of each contaminant produced by the roasting apparatus during the period by deducing the part of the contaminant trapped by the smoke treating unit

. calculating, from the ventilation rate and from the determined quantity of each contaminant dispensed by the system during the period, the concentration of each contaminant present in the room during the period.

- for each system and for each contaminant, comparing the calculated concentration of said contaminant present in the room during the period with the concentration of said contaminant authorised according to local health and safety regulations,

- selecting at least one smoke treating unit of the system in the list of smoke treating units providing for each contaminant a calculated concentration inferior to the authorised concentration.

2. A method according to Claim 1, wherein the smoke treating units are comprised in the list of afterburners, catalytic afterburners, filters able to retain volatile organic compounds, hydrocarbons and/or particulate matters, electrostatic precipitators, a duct connected to the outside of the room and combinations thereof.

3. A method according to Claim 1 or 2, wherein the method comprises receiving room data input indicating at least : the volume of the room and the ventilation rate in the room in order to determine the air change per hour (ACPH) of said room,

4. A method according to any one of the precedent claims, wherein the roasting use data input indicating the intended use of the at least one roasting apparatus comprises at least :
- the amount of coffee beans roasted per day, and
- the intervals between roasting operations, and
- optionally the weight of beans roasted per roasting operation and/or the roasting level of the coffee beans at the end of the roasting operation and/or the type of coffee beans roasted in the at least one roasting apparatus.

~~5. A method according to any one of the precedent claims, wherein said method comprises the step of getting access to the quantity of each contaminant produced by the defined roasting apparatus during the operation of roasting a specific quantity of a specific type of coffee beans up to a specific roasting level.~~

5~~6~~. A method according to any one of the precedent claims, wherein the quantities of at least one contaminant comprised in the list of : CO, CO_2, diacetyl, formaldehyde, PM_{10}, $PM_{2.5}$, methanol, NO, NO_2, pyridine, SO_2, ozone and 2-furanmethanol is determined.

~~7. A method according to any one of the precedent claims, wherein said method comprises the step of getting access, for each smoke treating unit, to the performance of reduction of the level of each contaminant by said smoke treating unit.~~

6~~8~~. A method according to any one of the precedent claims, wherein said method comprises, for each system of the roasting apparatus and of one of the smoke treating units, the step of determining the quantity of each contaminant dispensed by the system during the period from the determined quantity of each contaminant produced by the roasting apparatus during the period.

~~9. A method according to the precedent claim, wherein said method comprises the step of calculating, from the ventilation rate and from the determined quantity of each contaminant dispensed by the system during the period, the concentration of each contaminant present in the room during the period.~~

7~~10~~. A method according to any one of the precedent claims, wherein said method comprises the step of getting access to health and safety regulations in different countries or geographical areas in terms of contaminant levels emitted in a public room.

8~~11~~. A method according to any one of the precedent claims, wherein said method comprises the step of displaying a diagram presenting, for each contaminant and for each smoke treating unit selected by the user :

- the calculated concentration of said contaminant present in the room during the intended use of the roasting apparatus,
- the limit of concentration of said contaminant authorised according to local health and safety regulations.

9~~12~~. A computer program comprising instructions which, when executed by a computer, processor or control unit (30), cause the computer, processor or control unit to perform the method of any one of Claims 1 to 9~~11~~.

10~~13~~. A computer readable storage medium comprising instructions which, when executed by a computer, processor or control unit cause the computer, processor or control unit to carry out the method of any one of Claims 1 to 9~~11~~.

11~~14~~. A method to check the safe operation of a specific system (1) of a pre-defined coffee beans roasting apparatus (2) and a pre-defined associated smoke treating unit configured to treat the smoke emitted by said roasting apparatus in different rooms (10) and according to different intended uses, said method comprising the steps of :

- receiving room data input indicating the country of the room and the ventilation of said room,
- receiving roasting use data input indicating the intended use of the pre-defined roasting apparatus during a pre-determined period in order to determine the quantity of each contaminant produced by the roasting apparatus during said period for said use, said operation of determining the quantity comprising the steps of :
  . getting access to the quantity of each contaminant produced by the pre-defined roasting apparatus during the operation of roasting a specific quantity of a specific type of coffee beans up to a specific roasting level, and
  . based on the roasting use data and on the said accessible quantities, calculating the quantities produced at each roasting operation according to the indicated intended use, and

. based on the intended use over the pre-determined period, determining the quantity of each contaminant produced by the roasting apparatus,

- for this specific system of the pre-defined roasting apparatus and the pre-defined smoke treating units, calculating,

. from the determined quantity of each contaminant produced by the roasting apparatus during the period for said use,

. from the performance in reducing the level of said contaminant by the smoke treating unit, and

. from the ventilation rate,

the concentration of each contaminant present in the room during the period, by:

. getting access to the performance of reduction of the level of each contaminant by said smoke treating unit, and

. determining the quantity of each contaminant dispensed by the system during the period from the determined quantity of each contaminant produced by the roasting apparatus during the period by deducing the part of the contaminant trapped by the smoke treating unit, and

. calculating, from the ventilation rate and from the determined quantity of each contaminant dispensed by the system during the period, the concentration of each contaminant present in the room during the period.

- for each contaminant, comparing the calculated concentration of said contaminant present in the room during the period with the concentration of said contaminant authorised according to local health and safety regulations,
- confirming the safe operation of the specific system in the room if for each contaminant the calculated concentration is inferior to the authorised concentration.

125. Method according to the precedent claim wherein, if the safe operation of the specific system is not confirmed, then implementing the method of Claim 1 to 811 to select a smoke treating unit (3) for the pre-defined coffee beans roasting apparatus (2), wherein said smoke treating unit is selected from a group of smoke treating units different from the pre-defined associated smoke treating unit of the specific system.

136. A computer program comprising instructions which, when executed by a computer, processor or control unit cause the computer, processor or control unit to perform the method of any one of Claims 1114 or 12.15

147. A computer readable storage medium comprising instructions which, when executed by a computer, processor or control unit cause the computer, processor or control unit to carry out the method of any one of Claims 1114 or 1215.