CLAIMS

1. System (100) for roasting coffee beans comprising :
- a roasting apparatus (1), said apparatus producing smoke, and
- a smoke treating unit (2) configured to collect and treat smoke produced by the roasting apparatus,
wherein :
- the roasting apparatus comprises a smoke outlet (11), and
- the smoke treating unit comprises :
  . a smoke inlet (21) configured to collect smoke,
  . a smoke filtering sub-unit (22),
  . a smoke driver (23) configured to circulate smoke through the smoke treating unit from the smoke collecting device to an outlet (25) of the smoke treating unit,

wherein the system comprises an air inlet device (24) configured to mix the smoke produced by the roasting apparatus (1) with ambient air in order to control the temperature of the smoke inside the smoke filtering sub-unit (22), and
- wherein said air inlet device (24) is positioned at a position that is upstream the smoke filtering sub-unit (22).

2. System according to Claim 1 wherein the smoke filtering sub-unit (22) comprises at least an active carbon filter (221),

3. System according to the precedent claim, wherein the smoke filtering sub-unit (22) comprises at least one additional filter (222, 223), said additional filter operating without heating.

4. System according to the precedent claim, wherein the smoke filtering sub-unit (22) comprises successively : a HEPA filter (222), an electrostatic precipitator (223) and an active carbon filter (221).

~~5. System according to any one of the precedent claims, wherein said air inlet device (24) is positioned at a position that is upstream the smoke filtering sub-unit (22).~~

5~~6~~. System according to any one of the precedent claims, wherein the air inlet device (24) is positioned and designed to introduce air and smoke both at the same point inside the smoke treating unit (2).

6~~7~~. System according to any one of the precedent claims, wherein the smoke treating unit (2) comprises at least one temperature sensor (26) configured for monitoring the temperature inside said unit.

~~8~~7. System according to any one of the precedent claims, wherein the air inlet device (24) comprises :
- a first wall (241) extending between the smoke outlet (11) of the roasting apparatus and the smoke inlet (21) of the smoke treating unit, and
- at least one hole (240) through said wall.

~~9. System according to the precedent claim, wherein :~~
~~- the first wall (241) of the air inlet device (24) consists in at least two rods connecting the smoke outlet (11) of the roasting apparatus to the smoke inlet (211) of the smoke treating unit, and~~
~~- the space extending between two next rods defines one hole (240).~~

~~10. System according to any one of Claim 7 to 9, wherein only one zone (244) of the contour of the first wall of the air inlet device comprises said at least one hole (240).~~

~~11~~8. System according to any one of Claims 6 or 7 ~~7 to 10~~, wherein the air inlet device (24) comprises an external wall (242), said external wall surrounding at least a part of the first wall (241) comprising the at least one hole (240), preferably surrounding completely the first wall, and said first wall and said external wall being separated by a gap (245).

~~12~~9. System according to any one of Claim ~~7~~ 6 to ~~11~~8, wherein the air inlet device (24) comprises at least one size adjusting means (246) to adjust the size of the at least one hole (240) comprised in the first wall (241).

~~13~~10. System according to the precedent claim, wherein the system comprises at least one actuating device (247) to control the size adjusting means (246) and the system comprises a control system (3) operable to control said actuating device (247), and ~~,~~preferably,

~~14. System according to the precedent claim, wherein~~ the smoke treating unit (2) comprises at least one temperature sensor (26) configured for monitoring the temperature inside said unit, and wherein the control system (3) is arranged to control the at least one actuating device (247) of the at least one size adjusting means based on at least the monitored temperature inside the smoke treating unit.

~~15. System according to the precedent claim, wherein the control system is arranged to control the actuating device (247) and the smoke driver (23) of the smoke treating unit based on at least the monitored temperature inside the smoke treating unit.~~

~~16. System according to the precedent claim, wherein the control system is arranged to control the smoke driver (23) of the smoke treating unit based at least on the size of the at least one hole (240).~~

~~17~~11. System according to ~~any one of~~ Claim~~s 8 to 11~~7 or 8, wherein the size of the at least one hole is fixed and wherein the smoke treating unit (2) comprises at least one temperature sensor (26) configured for monitoring the temperature inside said unit, and wherein the control system (3) arranged to control the smoke driver (23) of the smoke treating unit based on the measure of the temperature provided by the temperature sensor.

~~18~~12. System according to any one of the precedent claims, wherein the air inlet device (24) is part of the roasting apparatus (1) or part of the smoke treating unit (2) or is a separate device connectable to the roasting apparatus and to the smoke treating unit.

~~19. Device (24) for connecting the smoke outlet (11) of a coffee beans roasting apparatus and the smoke inlet (21) of a smoke treating unit configured to collect and treat smoke produced by the roasting apparatus, said device being configured to introduce and mix ambient air (A) with the smoke (S1) produced by the roasting apparatus (1) inside the smoke treating unit (2), wherein said device (24) comprises :~~
~~- a first wall (241) extending between the smoke outlet (11) of the roasting apparatus and the smoke inlet (21) of the smoke treating unit, and~~
~~- at least one hole (240) through said wall.~~

~~20. Coffee beans roasting apparatus (1) comprising a smoke outlet (11), wherein said apparatus comprises an air inlet device (24) connected to the smoke outlet (11), said device (24) comprising :~~
~~- a first wall (241) extending from and out of the smoke outlet (11) of the roasting apparatus to, and~~
~~- at least one hole (240) through said wall.~~

~~21~~13. Smoke treating unit (2) configured to collect and treat smoke produced by a roasting apparatus, said smoke treating unit comprising :

- a smoke inlet (21) configured to collect smoke, and
. a smoke filtering sub-unit (22), and
. a smoke driver (23) configured to circulate smoke through the smoke treating unit from the smoke collecting device to an outlet (25) of the smoke treating unit,
wherein the smoke treating unit comprises an air inlet device (24) configured to mix the smoke with ambient air before the smoke is circulated through the smoke filtering sub-unit (22).

~~22~~14. Smoke treating unit (2) according to the precedent claim, wherein the air inlet device (24) is connected to the smoke inlet (211) and said device (24) comprises :
- a first wall (241) extending from and out of the smoke inlet (21), and
- at least one hole (240) through said wall.

15~~23~~. Method for roasting coffee beans and filtering the smoke produced during the roasting of said beans with a system according to any one of Claims 1 to ~~18~~12, wherein the smoke driver (23) of the smoke treating unit is controlled to adapt the quantity of ambient air within the smoke treating unit in order to control the temperature of the smoke inside the smoke filtering sub-unit (22).

~~24~~16. Method according to the precedent claim, wherein the smoke treating unit comprises an active carbon filter (221) and the smoke driver (23) of the smoke treating unit is controlled to introduce a quantity of ambient air within the smoke in order to get a temperature of the smoke at the active carbon filter (221) of at most 65°C, preferably at least 50°C.

~~25. Method for roasting coffee beans and filtering the smoke produced during the roasting of said beans with a system according to any one of Claims 12 to 18, comprising the step of adjusting the size of the at least one hole (240) comprised in the first wall of the air inlet device in order to control the temperature inside the smoke filtering sub-unit (22).~~

~~26. Method according to the precedent claim, wherein the size of the at least one hole (240) is increased in order to decrease temperature or the size of the at least one hole (240) is increased in order to increase the temperature.~~