CLAIMS:

1. A coating and developing device, comprising a front end module, a process station and an interface station successively connected, wherein the process station comprises:

a coating unit, comprising at least one line of vertically stacked coating modules for performing coating treatment to a substrate;

a developing unit, comprising at least one line of vertically stacked developing modules for performing developing treatment to the substrate，wherein the coating unit and the developing unit are arranged in a straight line;

at least one mobile conveying part that is transversally movable; and

at least one side robot that is vertically movable;

wherein after the substrate has been processed in the coating unit, the substrate is transferred to the at least one mobile conveying part by the at least one side robot, and the at least one mobile conveying part transfers the substrate to the interface station; after the substrate has been processed in the developing unit, the substrate is transferred to the at least one mobile conveying part by the at least one side robot and the at least one mobile conveying part transfers the substrate to the front end module.

2. The coating and developing device according to claim 1, wherein

the coating unit further comprises at least one line of vertically stacked heating processing modules, located opposite the coating modules, for heating and cooling the substrate before and after the coating treatment;

the developing unit further comprises at least one line of vertically stacked heating processing modules, located opposite the developing modules, for heating and cooling the substrate before and after the developing treatment.

3. The coating and developing device according to claim 2, wherein the at least one mobile conveying part is located on the top or bottom of the coating unit and the developing unit.

4. The coating and developing device according to claim 3, wherein

the coating unit further comprises at least one coating robot, for transferring the substrate between the coating modules and the heating processing modules of the coating unit;

the developing unit further comprises at least one developing robot, for transferring the substrate between the developing modules and the heating processing modules of the developing unit.

5. The coating and developing device according to claim 2, wherein the at least one mobile conveying part is located between the top and bottom of the coating unit and the developing unit.

6. The coating and developing device according to claim 5, wherein

the coating unit comprises at least one coating robot disposed on an upper side of the at least one mobile conveying part located between the top and bottom of the coating unit and the developing unit and at least one coating robot disposed on a lower side of the at least one mobile conveying part located between the top and bottom of the coating unit and the developing unit, for transferring the substrate between the coating modules and the heating processing modules of the coating unit;

the developing unit comprises at least one developing robot disposed on an upper side of the at least one mobile conveying part located between the top and bottom of the coating unit and the developing unit and at least one developing robot disposed on a lower side of the at least one mobile conveying part located between the top and bottom of the coating unit and the developing unit, for transferring the substrate between the developing modules and the heating processing modules of the developing unit.

7. The coating and developing device according to claim 1, wherein the at least one side robot is installed between the coating unit and the developing unit, for transferring the substrate to the at least one mobile conveying part after the substrate has been processed in the coating unit, or transferring the substrate to the at least one mobile conveying part after the substrate has been processed in the developing unit.

8. The coating and developing device according to claim 1, wherein the process station comprises at least two of the side robots, at least one of the at least two side robots disposed between the coating unit and the front end module, for transferring the substrate to the at least one mobile conveying part after the substrate has been processed in the coating unit, or taking the substrate from the at least one mobile conveying part after the substrate has been processed in the developing unit; and

at least one of the at least two side robots disposed between the developing unit and the interface station for transferring the substrate to the at least one mobile conveying part after the substrate has been processed in developing unit, or taking the substrate from the at least one mobile conveying part after the substrate has been processed in the coating unit.

9. The coating and developing device according to claim 1, wherein the process station comprises at least three of the side robots, at least one of the at least three side robots disposed between the coating unit and the front end module, for taking the substrate from the at least one mobile conveying part after the substrate has been processed in the developing unit;

at least one of the at least three side robots disposed between the coating unit and the developing unit, for transferring the substrate to the at least one mobile conveying part after the substrate has been processed in the coating unit, or transferring the substrate to the at least one mobile conveying part after the substrate has been processed in the developing unit; and

at least one of the at least three side robots disposed between the developing unit and the interface station, for taking the substrate from the at least one mobile conveying part after the substrate has been processed in the coating unit.

10. The coating and developing device according to claim 1, wherein

the front end module comprises a front end module robot, and the front end module robot takes the substrate from the at least one mobile conveying part after the substrate has been processed in the developing unit;

the interface station comprises an interface robot, and the interface robot takes the substrate from the at least one mobile conveying part after the substrate has been processed in the coating unit.

11. The coating and developing device according to claim 1, wherein the process station further comprises:

a plurality of vertically stacked adhesion modules, for forming adhesive film on the substrate surface; and

a plurality of vertically stacked pre cooling modules, for cooling the substrate after adhesion treatment;

wherein the plurality of adhesion modules and the plurality of pre-cooling modules are located between the coating unit and the front-end module;

before the substrate is transferred to the coating unit for processing, the at least one side robot is arranged to transfer the substrate to the adhesion module, and then transfer the substrate to the pre-cooling module after the substrate has finished adhesion treatment.

12. The coating and developing device according to claim 1, wherein the process station further comprises:

a plurality of vertically stacked edge exposure modules, for edge exposure processing the substrate which has been processed in the coating unit;

wherein the plurality of edge exposure modules are installed between the coating unit and the developing unit, or installed between the coating unit and the front end module, or installed between the developing unit and interface station;

the at least one side robot is arranged to transfer the substrate to the edge exposure module for edge exposure processing after the substrate has been processed in the coating unit and before the substrate is transferred to the interface station.

13. The coating and developing device according to claim 12, wherein the process station further comprises:

a plurality of vertically stacked pre-cleaning modules, for cleaning the substrate after edge exposure processing;

wherein the plurality of pre-cleaning modules are installed between the coating unit and the developing unit, or installed between the coating unit and the front end module, or installed between the developing unit and the interface station;

the at least one side robot is arranged to transfer the substrate to the pre-cleaning module for precleaning after the substrate has been processed in the edge exposure module and before the substrate is transferred to the interface station.

14. The coating and developing device according to claim 13, wherein the process station further comprises:

a plurality of vertically stacked post cooling modules, for cooling the substrate after precleaning;

wherein the plurality of post cooling modules are installed between the developing unit and the interface station;

the at least one side robot is arranged to transfer the substrate to the post cooling modules for cooling after the substrate has been precleaned and before the substrate is transferred to the interface station.

15. The coating and developing device according to claim 1, wherein the process station further comprises:

a plurality of vertically stacked post cleaning modules, for post cleaning the substrate after immersion exposure processing and before the substrate is transferred to the developing unit;

wherein the plurality of post cleaning modules are installed between the developing unit and the interface station;

the at least one side robot is arranged to transfer the substrate to the post cleaning module for cleaning after the substrate has been exposure processed, and transfers the substrate to the developing unit for developing processing after the substrate has been post cleaned.

16. The coating and developing device according to claim 1, wherein the process station further comprises:

at least one first temporary storage part，for temporarily storing the substrate which has been processed in the coating unit, so as to wait for entering an exposure machine for exposure processing;

at least one second temporary storage part, for temporarily storing the substrate after exposure processing, so as to wait for entering the developing unit for processing;

wherein the at least one first temporary storage part and the at least one second temporary storage part are installed between the developing unit and the interface station.

17. The coating and developing device according to claim 1, wherein the process station further comprises:

photoresist pumps, installed between the front end module and the coating unit;

photoresist tanks, installed at one side of the at least one mobile conveying part, for storing photoresist, and the photoresist tanks supply the photoresist to the coating modules through the photoresist pumps.

18. A substrate transfer method of a coating and developing device, comprising:

a front end module robot being installed in a front end module taking the substrate from the front end module and transferring the substrate to a process station;

a coating robot being installed in a coating unit of the process station transferring the substrate to the coating unit, and performing coating treatment and heating treatment to the substrate in the coating unit;

the coating robot taking the substrate out of the coating unit after the substrate has been processed in the coating unit;

a side robot transferring the substrate taken from the coating unit to a mobile conveying part;

the mobile conveying part transferring the substrate to an interface station after the substrate has been processed in the coating unit;

an interface robot being installed in the interface station, the interface robot taking the substrate from the mobile conveying part and transferring the substrate to the interface station after the substrate has been processed in the coating unit, or another side robot taking the substrate from the mobile conveying part after the substrate has been processed in the coating unit, and then the interface robot transferring the substrate to the interface station;

the interface robot taking the substrate from the interface station and transferring the substrate to the process station after the substrate has completed of exposure processing;

a developing robot being installed in a developing unit of the process station, the developing robot transferring the substrate to the developing unit, and performing developing treatment and heating treatment to the substrate in the developing unit;

the developing robot taking the substrate from the developing unit after the substrate has been processed in the developing unit;

the side robot transferring the substrate to the mobile conveying part after the substrate is taken out of the developing unit;

the mobile conveying part transferring the substrate to the front end module after the substrate has been processed in the developing unit;

the front end module robot taking the substrate from the mobile conveying part and transferring the substrate to the front end module after the substrate has been processed in the developing unit, or another side robot taking the substrate from the mobile conveying part after the substrate has been processed in the developing unit, and then the front end module robot transferring the substrate to the front end module.