CLAIMS

1. A wafer polishing system, comprising:

a wafer polishing unit (1);

at least one wafer cleaning unit (2), arranged adjacent to the wafer polishing unit (1); and

a wafer transfer passage (12);

characterized in that, the wafer polishing system further comprises a wafer transfer mechanism (5), and at least part of the wafer transfer mechanism (5) is located in the wafer cleaning unit (2);

a docking station (61) is formed on the wafer transfer passage (12), and at least part of the wafer transfer mechanism (5) is able to move to the docking station (61) to transfer a wafer (4) between the wafer polishing unit (1) and the wafer cleaning unit (2).

2. The wafer polishing system according to claim 1, characterized in that the wafer transfer mechanism (5) is used for adjusting a posture of the wafer (4), the wafer transfer mechanism (5) adjusts the posture of the wafer (4) by:

flipping the wafer (4) into a vertical or approximately vertical state;

and/or, flipping the wafer (4) into a horizontal or approximately horizontal state;

and/or, driving the wafer (4) to move horizontally;

and/or, driving the wafer (4) to move vertically;

and/or, driving the wafer (4) to swing along an arc.

3. The wafer polishing system according to claim 1, characterized in that an intersection area is formed between the wafer transfer passage (12) and an extension line of a position where the wafer cleaning unit (2) closest to the wafer polishing unit (1) is located, and the docking station (61) is located in the intersection area.

4. The wafer polishing system according to claim 1, characterized in that the wafer transfer passage (12) is located in the wafer polishing unit (1) or on a side of the wafer polishing unit (1), and the docking station (61) is arranged in the wafer transfer passage (12).

5. The wafer polishing system according to claim 1, characterized by further comprising:

a clamping device (3), used for clamping the wafer (4); and

a designated docking position (62), located in the wafer cleaning unit (2);

wherein, the clamping device (3) and the wafer transfer mechanism (5) are able to move to the docking station (61) to implement wafer transfer between the clamping device (3) and the wafer transfer mechanism (5);

the wafer transfer mechanism (5), after taking the wafer (4), moves to the designated docking position (62);

a wafer transfer unit (7), wherein the wafer transfer unit (7) at least comprises a transfer platform (71), the transfer platform (71) is able to move to the docking station (61) to implement wafer transfer between the clamping device (3) and the transfer platform (71).

6. The wafer polishing system according to claim 5, characterized by further comprising a first transfer rail (11), wherein the clamping device (3) moves back and forth along the first transfer rail (11); the wafer transfer unit (7) further comprises a second transfer rail (72), and the transfer platform (71) moves back and forth along the second transfer rail (72); the transfer platform (71) is docked with the clamping device (3).

7. The wafer polishing system according to claim 6, characterized by further comprising a first guide rail (51), wherein the wafer transfer mechanism (5) moves along the first guide rail (51); the wafer transfer mechanism (5), the clamping device (3) and the wafer transfer unit (7) are able to move until projections of two or three of the wafer transfer mechanism (5), the clamping device (3) and the wafer transfer unit (7) overlap at least partially; and

a second guide rail (52), wherein an angle is formed between the second guide rail (52) and a first guide rail (51) in a vertical plane, the wafer transfer mechanism (5) moves along the second guide rail (52), and the second guide rail (52) moves along the first guide rail (51).

8. The wafer polishing system according to claim 7, characterized in that projections of the first transfer rail (11), the second transfer rail (72) and the first guide rail (51) overlap at least

partially; or, the projections of the first transfer rail (11), the second transfer rail (72) and the wafer transfer mechanism (5) overlap at least partially.

9. The wafer polishing system according to claim 7, characterized in that at least part of the second transfer rail (72) is arranged above the wafer transfer passage (12); the second transfer rail (72), the wafer transfer passage (12) and the first transfer rail (11) extend in a same direction; an angle is formed between an extension direction of the second transfer rail (72) and an extension direction of the first guide rail (51) in a horizontal plane.

10. The wafer polishing system according to claim 1 or 4, characterized in that the wafer transfer mechanism (5) comprises a swing arm (55), a flipping arm (56) connected to the swing arm (55) and a claw portion (57) for clamping the wafer (4), the flipping arm (56) is able to rotate around an axis of itself to drive the claw portion (57) to switch the wafer (4) between a horizontal or approximately horizontal state and a vertical or approximately vertical state, and the swing arm (55) is used for driving the flipping arm (56) and the claw portion (57) to swing, and the swing arm (55) and the flipping arm (56) are arranged coaxially and connected telescopically.

11. The wafer polishing system according to claim 1 or 4, characterized in that the wafer transfer mechanism (5) at least comprises a spindle (53) and a claw assembly (54), and the spindle (53) drives the claw assembly (54) to switch the wafer (4) between a horizontal or approximately horizontal state and a vertical or approximately vertical state,

the claw assembly (54) at least comprises a rotatable claw (541), the rotatable claw (541) comprises a shaft (542) parallel to the wafer (4) and a claw body (543) rotatably connected to the shaft (542), and a side surface of the claw body (543) abut against a side wall of the wafer (4),

the claw assembly (54) further comprises a stationary claw (544), and an inner wall of the stationary claw (544) is arc-shaped to fit the side wall of the wafer (4), and

when the wafer (4) is flipped into the vertical or approximately vertical state, the rotatable claw (541) is located at a top of the wafer (4).

12. A wafer processing method for a wafer polishing system, characterized by comprising:

a step of transferring a wafer to be polished to a wafer polishing unit;

a step of transferring the wafer to a docking station after the wafer is polished, and docking the wafer polishing unit with a wafer transfer mechanism on the docking station to implement wafer transfer between the wafer polishing unit and the wafer transfer mechanism; and

a step of flipping the wafer into a vertical or approximately vertical state after the wafer transfer mechanism takes the wafer, and moving the wafer to a wafer cleaning unit.

13. The wafer processing method for a wafer polishing system according to claim 12, characterized by comprising:

a step of clamping the wafer to be polished by a clamping device and then transferring the wafer to the wafer polishing unit;

a step of clamping the wafer to the docking station by the clamping device after the wafer is polished, and docking the clamping device with the wafer transfer mechanism on the docking station to implement wafer transfer between the clamping device and the wafer transfer mechanism; and

a step of flipping the wafer into the vertical or approximately vertical state after the wafer transfer mechanism takes the wafer, and moving the wafer to a designated docking position in the wafer cleaning unit,

wherein in the step of flipping the wafer into the vertical or approximately vertical state after the wafer transfer mechanism takes the wafer, and moving the wafer to a designated docking position in the wafer cleaning unit, the wafer transfer mechanism, after taking the wafer, flips the wafer and then moves to the designated docking position; or, the wafer transfer mechanism moves to the designated docking position and then flips the wafer; or, the wafer transfer mechanism moves to the designated docking position and flips the wafer synchronously, and

wherein in the step of clamping the wafer to be polished by a clamping device and then transferring the wafer to the wafer polishing unit, a transfer platform of a wafer transfer unit moves to the docking station, and the clamping device clamps the wafer from the transfer platform.

14. The wafer processing method for a wafer polishing system according to claim 13, characterized in that after the wafer is polished, the clamping device clamps the wafer to the docking station and is docked with the wafer transfer mechanism located on the docking station to implement wafer transfer between the clamping device and the wafer transfer mechanism, a transfer platform of a wafer transfer unit returns for avoidance, and the wafer transfer mechanism moves to the designated docking position by means of a first guide rail and/or a second guide rail.

15. The wafer processing method for a wafer polishing system according to claim 13, characterized in that in the step of moving the wafer to a designated docking position, the wafer moves to the designated docking position by movement in a horizontal direction and ascending or descending in a vertical direction by means of a first guide rail and a second guide rail; or, the wafer swings to the designated docking position along an arc; or, the wafer horizontally moves to the designated docking position along the first guide rail.