

CLAIMS

1. A substrate inspection method of inspecting a substrate to be repeatedly treated along a predetermined transfer way in a plurality of kinds of different treatment apparatuses, the substrate inspection method comprising:

5 a first imaging step of imaging a front surface of a substrate that has been treated in one treatment apparatus of the plurality of kinds of different treatment apparatuses and that is to be transferred out from the one treatment apparatus, to acquire a first substrate image;

10 a second imaging step of imaging a front surface of a substrate that has been an object for imaging the first substrate image, that has been treated in another treatment apparatus different from the one treatment apparatus after treated in the one treatment apparatus, and that is transferred again into the one treatment apparatus, to acquire a second substrate image;

20 a defect determination step of performing defect inspection, based on the first substrate image and the second substrate image, to determine presence or absence of a defect of the substrate; and

25 a defect cause identification step of identifying, when a defect detected from the second substrate image is not detected from the first substrate image, the defect as being caused by a treatment after the first substrate image is acquired and a treatment before the second substrate image is acquired, and identifying, when the defect detected from the second substrate image is detected also from the first substrate image, the defect as being caused by a treatment before the first substrate image is acquired, and

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wherein the first imaging step and the second imaging step are performed with a substrate inspection apparatus provided in the one treatment apparatus,

wherein the one treatment apparatus provides one
5 kind of treatment, and

wherein the one treatment apparatus includes a plurality of modules that each provide the one kind of treatment.

10 2. The substrate inspection method according to claim 1, further comprising:

storing a transfer way for the substrate among the plurality of kinds of treatment apparatuses when the substrate is repeatedly treated in the treatment
15 apparatuses, into a transfer way storage;

storing information on the defect detected at the defect determination step into a defect information storage;

classifying defects stored in the defect information storage into a plurality of kinds;

20 generating a defect determination table in which transfer ways for the substrate stored in the transfer way storage and the kinds of the classified defects are associated; and

identifying a treatment apparatus being a cause of
25 defect generation, based on the defect determination table, at the defect cause identification step.

3. The substrate inspection method according to claim 2,

30 wherein the defect determination step is performed on the same substrate for every repeated treatments, and

wherein information on the defect detected at the defect determination step repeatedly performed on the same substrate is stored in the defect information storage.

5 4. A non-transitory computer-readable storage medium storing a program running on a computer which controls a substrate processing system to cause the substrate processing system to perform a substrate inspection method of inspecting a substrate to be repeatedly treated along a
10 predetermined transfer way in a plurality of kinds of different treatment apparatuses,

the substrate inspection method comprising:

a first imaging step of imaging a front surface of a substrate that has been treated in one treatment apparatus
15 of the plurality of kinds of different treatment apparatuses and that is to be transferred out from the one treatment apparatus, to acquire a first substrate image;

a second imaging step of imaging a front surface of a substrate that has been an object for imaging the first
20 substrate image that has been treated in another treatment apparatus different from the one treatment apparatus after treated in the one treatment apparatus, and that is transferred again into the one treatment apparatus, to acquire a second substrate image;

25 a defect determination step of performing defect inspection, based on the first substrate image and the second substrate image, to determine presence or absence of a defect of the substrate; and

a defect cause identification step of identifying,
30 when a defect detected from the second substrate image is not detected from the first substrate image, the defect as being caused by a treatment after the first substrate image is acquired and a treatment before the second substrate

image is acquired, and identifying, when the defect detected from the second substrate image is detected also from the first substrate image, the defect as being caused by a treatment before the first substrate image is acquired,

5 wherein the first imaging step and the second imaging step are performed with a substrate inspection apparatus provided in the one treatment apparatus,

 wherein the one treatment apparatus provides one kind of treatment, and

10 wherein the one treatment apparatus includes a plurality of modules that each provide the one kind of treatment.

5. A substrate inspection apparatus of inspecting a
15 substrate to be repeatedly treated along a predetermined transfer way in a plurality of kinds of different treatment apparatuses, the substrate inspection apparatus comprising:

 a first imaging apparatus which images a front surface of a substrate that has been treated in one treatment
20 apparatus of the plurality of kinds of different treatment apparatuses and that is to be transferred out from the one treatment apparatus, to acquire a first substrate image;

 a second imaging apparatus which images a front surface of a substrate that has been an object for imaging
25 the first substrate image, that has been treated in another treatment apparatus different from the one treatment apparatus after treated in the one treatment apparatus, and that is transferred again into the one treatment apparatus, to acquire a second substrate image; and

30 a processor configured to

 perform defect inspection on the substrate, based on the first substrate image and the second substrate

image, to determine presence or absence of a defect of the substrate; and

5 identify when a defect detected from the second substrate image is not detected from the first substrate image, the defect as being caused by a treatment after the first substrate image is acquired, and identify, when the defect detected from the second substrate image is detected from the first substrate image, the defect as being caused by a treatment
10 before the first substrate image is acquired, and wherein the first imaging apparatus and the second imaging apparatus are provided in the one treatment apparatus, wherein the one treatment apparatus provides one
15 kind of treatment, and wherein the one treatment apparatus includes a plurality of modules that each provide the one kind of treatment.

20 6. The substrate inspection apparatus according to claim 5, further comprising:

a transfer way storage which stores a transfer way for the substrate when the substrate is repeatedly treated in the treatment apparatuses;

25 a defect information storage which stores information on the defect detected by the processor;

wherein the processor is further configured to

classify defects stored in the defect information storage into a plurality of kinds; and

30 generate a defect determination table in which transfer ways for the substrate stored in the transfer way storage and the kinds of the classified defects are associated; and

identify a treatment apparatus being a cause of defect generation, based on the defect determination table.

5 7. The substrate inspection apparatus according to claim 6,

 wherein the processor is further configured to perform the determination of the presence or absence of a defect on the same substrate for every repeated treatment, and

10 wherein information on the defect detected by the determination of a defect by the processor repeatedly performed on the same substrate is stored in the defect information storage.