CLAIMS

1. A surface inspection method for inspecting a surface of an inspection subject having a specular surface, comprising:

a step in which the surface of said inspection subject is irradiated with light from an oblique direction, in which an incident angle of light that is radiated onto the surface of said inspection subject is 30° or more and less than 90° with respect~~relative~~ to the surface of said inspection subject;

a step in which measurement is conducted of an intensity of diffracted light that is diffracted by adhering foreign matter among light that is regularly reflected at~~by~~ the surface of said inspection subject;

a step in which measurement is conducted of an intensity of scattered light that is irregularly ~~scatter~~-reflected by said adhering foreign matter, in which an angle of said scattered light that is incident upon a light-receiving unit is 30° or less with respect~~relative~~ to the surface of said inspection subject;

and a step in which the degree to which the~~an adherent state of~~ foreign matter adhering to~~on~~ the surface has sunk into the interior of the~~said~~ inspection subject from the surface is determined~~discriminated~~ based on measurement results for an intensity of said diffracted light that is regularly reflected, and an intensity of said scattered light that is irregularly ~~scatter~~-reflected.

~~2. The surface inspection method according to claim 1, wherein an adherent strength of foreign matter on the surface of said inspection subject is discriminated.~~

2~~3~~. The surface inspection method according to claim 1, wherein an angle of said diffracted light that is incident upon the~~a~~ light-receiving unit when diffracted light is

received by said light-receiving unit is equal to an incident angle of light that is radiated onto the surface of said inspection subject.

34. The surface inspection method according to claim 1, wherein an angle of said scattered light that is incident upon thea light-receiving unit when scattered light is received by said light-receiving unit is 20° or more and 30° or less with respectrelative to the surface of said inspection subject.

45. The surface inspection method according to claim 1, wherein laser light is used as the light that is radiated onto the surface of said inspection subject.

56. The surface inspection method according to claim 1, wherein the surface of a disk constituting said inspection subject is inspected while light that is radiated onto the surface of this disk is radially scanned, in a conditionstate where said disk is rotated around a central axis.

6. A method of manufacture of a magnetic recording medium substrate, comprising a step in which the surface of a magnetic recording medium substrate is inspected using the surface inspection method according to claim 1.

7. A method of manufacture of a magnetic recording medium substrate, comprising a step in which the surface of a magnetic recording medium substrate is inspected using the surface inspection method according to claim 1.

87. A surface inspection apparatus for inspecting the surface of an inspection subject having a specular surface, comprising:

an lightoptical irradiatingradiation means which irradiates the surface of said inspection subject with light from an oblique direction, in which an incident angle of light that is radiated onto the surface of said inspection subject from said light

irradiating means is 30° or more and less than 90° with respectrelative to the surface of said inspection subject;

a first lightoptical measuringement means which has a light-receiving unit that receives diffracted light that is diffracted by adhering foreign matter among light that is regularly reflected by the surface of said inspection subject, and which measures the intensity of the diffracted light that is received by this light-receiving unit;

a second lightoptical measuringement means which has a light-receiving unit that receives scattered light that is irregularly scatter-reflected by said adhering foreign matter, and which measures the intensity of the scattered light that is received by this light-receiving unit, in which an angle of said-scattered light that is incident upon a light-receiving unit is 30° or less with respectrelative to the surface of said inspection subject;

and a determiningdiscrimination means which determinesdiscriminates the degree to which thean adherent state of foreign matter adhering toon the surface has sunk into the interior of thesaid inspection subject from the surface based on measurement results for the intensity of diffracted light measured by said first lightoptical measuringement means, and the intensity of scattered light measured by said second lightoptical measuringement means.

~~8. The surface inspection apparatus according to claim 9, wherein said discrimination means discriminates an adherent strength of foreign matter on the surface of said inspection subject.~~

9. The surface inspection apparatus according to claim 87, wherein an angle of said diffracted light that is incident upon thea light-receiving unit when diffracted light is received by said light-receiving unit of said first lightoptical measuringement means is

equal to an incident angle of the light that is radiated onto the surface of said inspection subject.

10. The surface inspection apparatus according to claim 8~~7~~, wherein an angle of said scattered light that is incident upon thea~~~~ light-receiving unit when scattered light is received by said light-receiving unit of said second lightoptical measuringement means is 20° or more and 30° or less with respectrelative to the surface of said inspection subject.

11. The surface inspection apparatus according to claim 8~~7~~, wherein said lightoptical irradiatingradiation~~~~ means irradiates the surface of said inspection object with laser light.

12. The surface inspection apparatus according to claim 8~~7~~, comprising:

a rotational means which rotates a disk constituting said inspection subject around a central axis;

and a scanning means which radially scans light that is radiated onto the surface of said disk.

~~13. A method of manufacture of a magnetic recording medium substrate, comprising a step in which the surface of a magnetic recording medium substrate is inspected using the surface inspection method according to claim 1.~~

~~14. A method of manufacture of a magnetic recording medium, comprising a step in which the surface of a magnetic recording medium is inspected using the surface inspection method according to claim 1.~~

13. A surface inspection method for inspecting a surface of an inspection subject having a specular surface, comprising:

a step in which the surface of said inspection subject is irradiated with light from an oblique direction, in which an incident angle of light that is radiated onto the surface of said inspection subject is 30° or more and less than 90° with respect to the surface of said inspection subject;

a step in which measurement is conducted of an intensity of diffracted light that is diffracted by adhering foreign matter among light that is regularly reflected at the surface of said inspection subject;

a step in which measurement is conducted of an intensity of scattered light that is irregularly reflected by said adhering foreign matter, in which an angle of said scattered light that is incident upon a light-receiving unit is 30° or less with respect to the surface of said inspection subject;

and a step in which the degree to which the foreign matter adhering to the surface has sunk into the interior of the inspection subject from the surface is classified based on the combination of measurement results for an intensity of said diffracted light that is regularly reflected, and an intensity of said scattered light that is irregularly reflected, in order to judge whether or not said foreign matter can be removed by aftertreatment.

14. A surface inspection apparatus for inspecting the surface of an inspection subject having a specular surface, comprising:

a light irradiating means which irradiates the surface of said inspection subject with light from an oblique direction, in which an incident angle of light that is radiated onto the surface of said inspection subject from said light irradiating means is 30° or more and less than 90° with respect to the surface of said inspection subject;

a first light measuring means which has a light-receiving unit that receives diffracted light that is diffracted by adhering foreign matter among light that is regularly reflected by the surface of said inspection subject, and which measures the intensity of the diffracted light that is received by this light-receiving unit;

a second light measuring means which has a light-receiving unit that receives scattered light that is irregularly reflected by said adhering foreign matter, and which measures the intensity of the scattered light that is received by this light-receiving unit, in which an angle of scattered light that is incident upon a light-receiving unit is 30° or less with respect to the surface of said inspection subject;

and a determining means which classifies the degree to which the foreign matter adhering to the surface has sunk into the interior of the inspection subject from the surface based on the combination of measurement results for the intensity of diffracted light measured by said first light measuring means, and the intensity of scattered light measured by said second light measuring means.

15. A surface inspection apparatus for inspecting the surface of an inspection subject having a specular surface, comprising:

a light irradiating means which irradiates the surface of said inspection subject with light from an oblique direction, in which an incident angle of light that is radiated onto the surface of said inspection subject from said light irradiating means is 30° or more and less than 90° with respect to the surface of said inspection subject;

a first light measuring means which has a light-receiving unit that receives diffracted light that is diffracted by adhering foreign matter among light that is regularly reflected by the surface of said inspection subject, and which measures the intensity of the diffracted light that is received by this light-receiving unit;

a second light measuring means which has a light-receiving unit that receives scattered light that is irregularly reflected by said adhering foreign matter, and which measures the intensity of the scattered light that is received by this light-receiving unit, in which an angle of scattered light that is incident upon a light-receiving unit is 30° or less with respect to the surface of said inspection subject;

and a determining means which determines the degree to which the foreign matter adhering to the surface has sunk into the interior of the inspection subject from the surface based on a combination of measurement results for the intensity of diffracted light measured by said first light measuring means, and the intensity of scattered light measured by said second light measuring means, in order to judge whether or not said foreign matter can be removed by aftertreatment.