CLAIMS

[Claim 1] A transfer method for transferring a plurality of microstructures arranged on a substrate to another substrate using laser irradiation, the method comprising the steps of:

transferring a first microstructure onto the other substrate by irradiating the first microstructure with a laser through the substrate; and

further irradiating the first microstructure that has been transferred with a laser at least once.

[Claim 2] The transfer method according to claim 1, wherein

in the step of further irradiating, a second microstructure remaining on the substrate is irradiated together with the first microstructure that has been transferred with the laser, thereby transferring the second microstructure onto the other substrate.

[Claim 3] The transfer method according to claim 2, wherein

the first microstructure and the second microstructure are arranged adjacent to each other on the substrate.

[Claim 4] The transfer method according to claim 2 or 3, wherein

a third microstructure remaining on the substrate, the first microstructure that has been transferred, and the second microstructure that has been transferred are further irradiated with the laser, thereby transferring the third microstructure onto the other substrate.

[Claim 5] The transfer method according to claim 4, wherein

the second microstructure and the third microstructure are arranged adjacent to each other on the substrate.

[Claim 6] The transfer method according to any one of claims 1 to 5, wherein

the substrate and the other substrate perform movement relative to each other in a predetermined direction, and are irradiated with the laser in a stopped or a non-stopped state.

[Claim 7] The transfer method according to any one of claims 1 to 6, wherein

a shape of the irradiated laser is a rectangular shape, and the movement is performed in a direction of a long side of the rectangle.

[Claim 8] The transfer method according to claim 7, wherein

a length of a long side of the rectangular shape of the laser on an irradiation surface is 3 times or more a length of the microstructure in a long side direction.

[Claim 9] The transfer method according to claim 7 or 8, wherein

a length of a long side of the rectangular shape of the laser on an irradiation surface is 5 times or more a length of the microstructure in a long side direction.

[Claim 10] The transfer method according to any one of claims 7 to 9, wherein

a plurality of the lasers having the rectangular shape is provided and arranged spaced apart in a short side direction of the rectangle.

[Claim 11] The transfer method according to any one of claims 1 to 6, wherein

a plurality of the lasers having an irradiation shape on an irradiation surface substantially a same size as the microstructure is provided, and the plurality of the lasers is arranged spaced apart in the moving direction.

[Claim 12] The transfer method according to claim 11, wherein

a plurality of lasers is further provided spaced apart from the plurality of the lasers in a direction perpendicular to the moving direction and is arranged in a matrix.

[Claim 13] The transfer method according to any one of claims 1 to 12, wherein

the plurality of microstructures is arranged on the substrate via a polymer material.

[Claim 14] The transfer method according to any one of claims 1 to 13, wherein

in the step of transferring, the microstructure arranged on the substrate is transferred onto the other substrate by a single laser irradiation.

[Claim 15] The transfer method according to any one of claims 1 to 14, wherein

in the step of further irradiating, the microstructure that has been transferred is irradiated with the laser a plurality of times.

[Claim 16] The transfer method according to claim 15, wherein

the microstructure that has been transferred is irradiated a plurality of times with a laser having an energy density lower than that of the laser used to irradiate the microstructure in the step of transferring.

[Claim 17] The transfer method according to claim 15 or 16, wherein

a total energy density of the laser irradiated the plurality of times is higher than the energy density of the laser irradiated onto the microstructure in the step of transferring.

[Claim 18] The transfer method according to any one of claims 1 to 17, wherein

an energy density of a laser irradiated onto the microstructure that has been transferred in the step of further irradiating is lower than the energy density of the laser irradiated onto the microstructure in the step of transferring.

[Claim 19] The transfer method according to any one of claims 1 to 18, wherein

the plurality of microstructures arranged on the substrate and the other substrate are in a spaced-apart state.

[Claim 20] The transfer method according to any one of claims 1 to 19, wherein

the laser irradiated onto the microstructure is shaped by passing through an opening of a photomask, and

a transmittance of the opening through which the laser irradiated onto the microstructure that has been transferred in the step of further irradiating is lower than a transmittance of an opening through which the laser irradiated onto the microstructure arranged on the substrate in the step of transferring.

[Claim 21] The transfer method according to any one of claims 1 to 20, wherein

in the step of transferring, the laser is irradiated in a state where the substrate and the other substrate are in contact, and

in the step of further irradiating, the laser is irradiated in a state where the substrate and the other substrate are separated by forming a space therebetween.

[Claim 22] The transfer method according to claim 21, wherein

in the step of further irradiating, oxygen gas is supplied in the space between the substrate and the other substrate.