What is claimed is:

1. An alignment device for double-sided exposure, wherein the device comprises:

positioning signs, marking signs, a position acquisition device and a sample carrier for placing a sample to be exposed;

wherein the marking signs are located on the sample carrier and are covered by the sample to be exposed;

the positioning signs are located on the sample carrier and are not covered by the sample to be exposed;

the distance between the positioning signs and the marking signs on the sample carrier is less than 20 mm and/or the positioning signs and the marking signs are connected by an anti-deformation material;

the positioning signs are used for determining the positions of the marking signs in real time;

the marking signs are used for marking the sample to be exposed;

the position acquisition device is used for acquiring position information of the positioning signs in real time,

the position acquisition device acquires the position information of the positioning signs,

according to the position information of the positioning signs, one side of the sample to be exposed is aligned and exposed;

when exposing the other side of the sample to be exposed, the position acquisition device acquires position information of the positioning signs in real time, and the position

information of the marking signs is determined according to the position information of the positioning signs acquired in real time,

according to the position information of the marking signs, the position of the exposure pattern on the other side of the sample to be exposed is determined, aligned, and exposed;

the sample carrier is made of aluminum alloy material, or the anti-deformation material is made of material with low coefficient of thermal expansion.

2. The device according to claim 1, wherein the relative position variation of the positioning signs and the marking signs is less than a predetermined value, and the predetermined value is set according to the alignment accuracy required when the sample to be exposed is subjected to double-sided exposure.

3. The device according to claim 1, wherein the device further comprises:

the marking device is used for marking the sample to be exposed through the marking signs.

4. The device according to claim 3, wherein the marking signs are located on an edge of the sample carrier.

5. An alignment method for double-sided exposure, wherein the method is applied to the alignment device according to any one of claims 1 to 4 for double-sided exposure, and the method comprises:

acquiring position information of the positioning signs located on the sample carrier and at a position not covered by the sample to be exposed;

aligning and exposing one side of the sample to be exposed according to the position information of the positioning signs;

acquiring position information of the positioning signs in real time when exposing the other side of the sample to be exposed;

determining the position information of the marking signs located on the sample carrier and covered by the sample to be exposed according to the position information of the positioning signs acquired in real time; and

aligning and exposing the other side of the sample to be exposed according to the position information of the marking signs;

the distance between the positioning signs and the marking signs on the sample carrier is less than 20 mm and/or the positioning signs and the marking signs are connected by an anti-deformation material; and

the sample carrier is made of aluminum alloy material, or the anti-deformation material is made of material with low coefficient of thermal expansion.

6. The method according to claim 5, wherein before exposing one side of the sample to be exposed, the method further comprises:

acquiring the position information of the positioning signs when exposing one side of the sample to be exposed in real time, and exposing an intermediate mark on one side of the sample to be exposed according to the acquired position information of the positioning signs, the intermediate mark being used for determining the position of an exposure pattern on the side where the intermediate mark is located.

7. The method according to claim 6, wherein before marking the other side of the sample to be exposed with the marking signs, the method further comprises:

selecting at least two marking signs according to the size of the sample to be exposed; and

covering the marking signs with the sample to be exposed without covering the positioning signs corresponding to the selected marking signs.

8. The method according to claim 7, wherein the alignment exposure of the other side of the sample to be exposed according to the position information of the marking signs comprises:

determining the position of an exposure pattern on the other side of the sample to be exposed in real time according to the position information of the marking signs; and

exposing the other side of the sample to be exposed according to the position of the exposure pattern on the other side of the sample to be exposed determined in real time.

9. The method according to any one of claims 5 to 8, wherein marking the other side of the sample to be exposed through the marking signs.

10. An exposure equipment, comprising the alignment device for double-sided exposure according to any one of claims 1 to 4.