CLAIMS

1. An apparatus for bonding alignment used to bond two substrates, comprising a press assembly and an objective lens group disposed on one side of the press assembly, the press assembly comprising a first chuck and a second chuck, the first chuck having a support surface facing toward a support surface of the second chuck, the first chuck being movable relative to the second chuck, the first chuck configured to support a first substrate, the second chuck configured to support a second substrate, the first chuck or the second chuck having a rotatable structure, one of the first and second chucks proximate the objective lens group being made of a light-transmissive material, the objective lens group configured to observe an alignment situation between the first and second substrates within the press assembly, the first and second chucks configured to move relative to each other based on the alignment situation observed by the objective lens group; wherein the first chuck is an upper chuck and the second chuck is a lower chuck; when a wedge-shaped error exists between the upper and lower chucks, a part of the upper chuck will be in contact with the lower chuck, thereby creating a rotational moment on the lower chuck so that the lower chuck rotates under the rotational moment.

2. The apparatus for bonding alignment of claim 1, wherein the press assembly further comprises an upper actuator coupled to the upper chuck and/or a lower actuator coupled to the lower chuck, the upper actuator configured to drive the upper chuck to move, the lower actuator configured to drive the lower chuck to move.

3. The apparatus for bonding alignment of claim 1, wherein the chuck having the rotatable structure is provided with a leveling device for driving the chuck having the rotatable structure to rotate.

4. The apparatus for bonding alignment of claim 3, wherein the leveling device comprises three leveling mechanisms distributed evenly under the chuck having the

rotatable structure, each of the three leveling mechanisms being self-adjustable in height so as to be able to drive the chuck having the rotatable structure to rotate with respect to a horizontal plane.

5. The apparatus for bonding alignment of claim 1, wherein the objective lens group is disposed under the lower chuck, and wherein the lower chuck is made of a light-transmissive material.

6. The apparatus for bonding alignment of claim 1, wherein the objective lens group is disposed above the upper chuck, and wherein the upper chuck is made of a light-transmissive material.

7. The apparatus for bonding alignment of claim 1, wherein the objective lens group is electrically connected to an image sensor, the image sensor configured to image the observed alignment situation through the objective lens group.

8. The apparatus for bonding alignment of claim 1, wherein the first chuck is further connected to a pressure sensor configured to detect a pressure undertaken by the first chuck.

9. A method for bonding alignment, comprising:

rotating a second chuck so that a support surface of a first chuck for supporting a first substrate is parallel to a support surface of the second chuck;

loading the first substrate on the first chuck and identifying first alignment marks on the first substrate by a light that is emanated from an objective lens group and passes through the second chuck which is made of a light-transmissive material;

loading a second substrate on the second chuck and identifying second alignment marks on the second substrate by the light that is emanated from the objective lens group and passes through the second chuck; and

moving the first and second chucks relative to each other so that the first alignment marks are aligned with the second alignment marks,

wherein adjusting the support surface of the first chuck parallel to the support surface of the second chuck comprises:

moving the first chuck downward relative to the second chuck until the first chuck comes into contact with the second chuck; when a wedge-shaped error exists between the first and second chucks, a part of the first chuck will be in contact with the second chuck, thereby creating a rotational moment on the second chuck so that the second chuck rotates under the rotational moment.

10. The method for bonding alignment of claim 9, further comprising, after the first alignment marks are aligned with the second alignment marks, detecting an alignment situation by using the objective lens group, and if the alignment situation is unacceptable, further moving the first and second chucks relative to each other based on a detected deviation until the first alignment marks are aligned with the second alignment marks.

11. The method for bonding alignment of claim 9, wherein adjusting the support surface of the first chuck parallel to the support surface of the second chuck further comprises:

detecting a pressure exerted by the first chuck on the second chuck in real time by using a pressure sensor; and

upon the pressure reaching a predetermined value, maintaining a current attitude of the second chuck by using a leveling device and returning the first chuck to an original position.