WHAT IS CLAIMED IS:

1. A processing apparatus for processing a wafer formed on a front surface thereof with a plurality of devices in a state of being partitioned by a plurality of intersecting streets, the processing apparatus comprising:

a chuck table that holds the wafer;

a processing unit that processes the wafer held by the chuck table;

a processing feeding mechanism that puts the chuck table and the processing unit into relative processing feeding;

an imaging unit that images the wafer held by the chuck table to detect a street to be processed; and

a control unit, wherein

the imaging unit includes a microscope and an imaging element connected to the microscope and including a plurality of pixels that capture an image,

the control unit has a target pattern storage section that stores a target pattern corresponding to a characteristic pattern on the wafer for performing pattern matching and a rectilinear region detection section that detects the street of the wafer on a basis of an image from the imaging element, and

wherein the control unit is configured to calculate

a deviation angle between a direction of the street detected by the rectilinear region detection section and a processing feeding direction, and a relative angle between the target pattern stored in the target pattern storage section and the characteristic pattern on the wafer is adjusted to be zero degrees on a basis of the calculated deviation angle, and

after adjustment of the relative angle between the target pattern stored in the target pattern storage section and the characteristic pattern on the wafer, while the chuck table and the imaging unit are relatively moved in the X-axis direction or the Y-axis direction by the processing feeding mechanism, a plurality of regions of the wafer are imaged, and

the characteristic pattern on the wafer is extracted by performing the pattern matching between the target pattern and the characteristic pattern on the wafer wherein the control unit calculates a matching degree of respective ones of the plurality of images obtained by imaging with the target pattern.

2. The processing apparatus according to claim 1, wherein the control unit rotates the chuck table by the deviation angle to adjust the relative angle.

3. The processing apparatus according to claim 1,

wherein the control unit rotates the target pattern stored in the target pattern storage section by the deviation angle through image processing to adjust the relative angle.