

## ABSTRACT

To remove or reduce the influence on the measurement accuracy due to a difference of the relative velocity between a substrate and a polishing table in an optical surface monitoring system. A substrate polishing apparatus includes a polishing table, a motor, a substrate holding head, a light source, an optical head, an optical detector, a shutter, and a control device. The motor is for rotating the polishing table. The substrate holding head is configured to hold a substrate. The optical head is disposed inside the polishing table. The optical head includes a light projection port and a light reception port. The light projection port is disposed to project light from the light source toward the substrate held by the substrate holding head. The light reception port is disposed to receive light reflected from the substrate held by the substrate holding head. The optical detector is for detecting the light received at the light reception port. The shutter is for controlling an exposure time during which the light is captured in the optical detector. The control device is for controlling the operation of the shutter so as to change the exposure time based on the polishing condition of the substrate.

Fig. 2