

ABSTRACT

CMP APPARATUS HAVING POLISHING PAD SURFACE PROPERTY MEASURING DEVICE

5 The present invention relates to a CMP apparatus having a polishing pad surface
property measuring device for measuring surface properties such as surface topography or
surface condition of a polishing pad used for polishing a substrate such as a
semiconductor wafer. The CMP apparatus includes a polishing pad surface property
measuring device (30) configured to apply a laser beam to a surface of a polishing pad (2)
10 and to receive reflected light from the polishing pad to obtain reflection intensity in each
reflection angle, a processor (40) configured to perform a Fourier transform on a
reflection intensity distribution obtained by the measuring device to obtain a spatial
wavelength spectrum of the surface of the polishing pad and to obtain surface properties
of the polishing pad by numerical analysis, a dressing control unit (23) configured to
15 determine dressing conditions of the polishing pad (2) by a closed loop control based on
the surface properties of the polishing pad obtained by the processor, and a dressing
apparatus (20) configured to dress the polishing pad based on the dressing conditions
determined by the dressing control unit.

Figure 1