

CLAIMS

1. A wafer polishing method comprising the steps of:
supplying a polishing solution to a surface of a pair of polishing pads positioned
above and below a carrier which has a circular hole for retaining a wafer and is thinner
5 than the wafer; and
sliding the polishing pads relatively to the carrier, thereby simultaneously
polishing both surfaces of the wafer retained in the carrier,
wherein information sourced from the carrier when a difference between a
thickness of the carrier and a thickness of the wafer reaches a predetermined value, is
10 detected to calculate the thickness of the wafer and thereby terminate polishing.
2. The wafer polishing method according to Claim 1, wherein the termination of
polishing is performed at a termination point of polishing determined by extracting a first
signal and a second signal that are signals of two setup frequency ranges from the
information obtained from the carrier, and detecting the termination point of polishing
15 where an intensity of the first signal is higher than a predetermined value and an
intensity of the second signal is lower than a predetermined value.
3. The wafer polishing method according to Claim 1, wherein the polishing solution
is a polishing solution free of abrasive grains.
4. The wafer polishing method according to Claim 1, wherein the information
20 sourced from the carrier is sounds and/or vibrations.
5. The wafer polishing method according to Claim 1, wherein the difference between
the thickness of the carrier and the thickness of the wafer at a time when the information
is sourced, is in the range of 0.1 μm to 20 μm .
6. The wafer polishing method according to Claim 1, wherein a pressure applied to
25 the polishing pads in the direction perpendicular to the surfaces of the wafer is in the
range of 100 g/cm^2 to 300 g/cm^2 .
7. The wafer polishing method according to Claim 1, wherein the information
sourced from the carrier is detected with detectors provided for each carrier.
8. The wafer polishing method according to Claim 7, wherein the detector is
30 provided on a mechanism for holding the carrier.
9. The wafer polishing method according to Claim 8, wherein the detector is
provided on external gears for moving the carrier.
10. The wafer polishing method according to Claim 4, wherein the detection of the

sounds from the carrier is performed by detecting sounds having a frequency of 10 Hz to 1000 Hz.

11. The wafer polishing method according to Claim 1, wherein the polishing solution contains a specific high molecular weight component.
- 5 12. The wafer polishing method according to Claim 2, wherein the extracting the signals from the information is calculation of a power spectra of digital data obtained by A/D converting the detected information and of a mean value or a maximum value of signal intensities of power spectra corresponding to the setup frequency ranges.

CLAIMS

1. A wafer polishing method comprising the steps of:
supplying a polishing solution free of abrasive grains to a surface of a pair of polishing pads positioned above and below a carrier which has a circular hole for retaining a wafer and is thinner than the wafer; and
sliding the polishing pads relatively to the carrier, thereby simultaneously polishing both surfaces of the wafer retained in the carrier,
wherein information of sounds and/or vibrations sourced from vibrations of the carrier interposed between the polishing pads when a difference between a thickness of the carrier and a thickness of the wafer reaches a predetermined value, is detected to calculate the thickness of the wafer and thereby terminate polishing
wherein the information sourced from the carrier is detected with detectors providing for each carrier and the detector is provided on a mechanism for holding the carrier.
2. The wafer polishing method according to Claim 1, wherein the termination of polishing is performed at a termination point of polishing determined by extracting a first signal and a second signal that are signals of two setup frequency ranges from the information obtained from the carrier, and detecting the termination point of polishing where an intensity of the first signal is higher than a predetermined value and an intensity of the second signal is lower than a predetermined value.
3. The wafer polishing method according to Claim 1, wherein the difference between the thickness of the carrier and the thickness of the wafer at a time when the information is sourced, is in the range of 0.1 μm to 20 μm .
4. The wafer polishing method according to Claim 1, wherein a pressure applied to the polishing pads in the direction perpendicular to the surfaces of the wafer is in the range of 100 g/cm^2 to 300 g/cm^2 .
5. The wafer polishing method according to Claim 1, wherein the detector is provided on external gears for moving the carrier.
6. The wafer polishing method according to Claim 1, wherein the detection of the sounds from the carrier is performed by detecting sounds having a frequency of 10 Hz to 1000 Hz.
7. The wafer polishing method according to Claim 1, wherein the polishing solution contains a specific high molecular weight component.
8. The wafer polishing method according to Claim 2, wherein the extracting the signals from the information is calculation of a power spectra of digital data obtained by A/D converting the detected information and of a mean value or a maximum value of signal intensities of power

spectra corresponding to the setup frequency ranges.