What is claimed is:

1. A film-thickness measuring method comprising:

pressing a workpiece against a polishing pad, while rotating a polishing table that supports the polishing pad, to polish the workpiece;

during polishing of the workpiece, directing light to the workpiece from a liquid-seal sensor and a transparent-window sensor disposed in the polishing table and receiving reflected light from the workpiece by the liquid-seal sensor and the transparent-window sensor; and

producing a composite spectrum by combining a spectrum of the reflected light from the workpiece transmitted from the liquid-seal sensor and a spectrum of the reflected light from the workpiece transmitted from the transparent-window sensor;

determining a film thickness of the workpiece based on the composite spectrum,

wherein the liquid-seal sensor has a liquid flow passage through which liquid flows, and a first optical sensor head disposed in the liquid flow passage, and

the transparent-window sensor has a second optical sensor head, and a transparent window arranged above the second optical sensor head.

2. The film-thickness measuring method according to claim 1, wherein the liquid-seal sensor and the transparent-window sensor are arranged on a circumference having the same center as a rotation center of the polishing table.

3. The film-thickness measuring method according to claim 1, wherein a wavelength range of the spectrum of the reflected light transmitted from the liquid-seal sensor is different from a wavelength range of the spectrum of the reflected light transmitted from the transparent-window sensor.

4. The film-thickness measuring method according to claim 1, wherein the liquid-

seal sensor and the transparent-window sensor comprise a plurality of liquid-seal sensors and a plurality of transparent-window sensors.

5. The film-thickness measuring method according to claim 1, wherein the liquid-seal sensor and the transparent-window sensor are arranged on each of a plurality of concentric circles having the same center as a rotation center of the polishing table.

6. A film-thickness measuring apparatus comprising:

a liquid-seal sensor and a transparent-window sensor configured to be disposed in a rotatable polishing table configured to support a polishing pad for polishing a workpiece; and

a spectrum processing device configured to produce a composite spectrum by combining a spectrum of reflected light from the workpiece transmitted from the liquid-seal sensor and a spectrum of reflected light from the workpiece transmitted from the transparent-window sensor and determine a film thickness of the workpiece based on the composite spectrum,

wherein the liquid-seal sensor has a liquid flow passage configured to pass liquid therethrough, and a first optical sensor head disposed in the liquid flow passage, and

the transparent-window sensor has a second optical sensor head, and a transparent window arranged above the second optical sensor head.

7. The film-thickness measuring apparatus according to claim 6, wherein the liquid-seal sensor and the transparent-window sensor are arranged on a circumference having the same center as a rotation center of the polishing table.

8. The film-thickness measuring apparatus according to claim 6, further comprising:

a first spectrometer coupled to the liquid-seal sensor; and

a second spectrometer coupled to the transparent-window sensor,

wherein the first spectrometer is configured to measure intensities of the reflected light from the workpiece in a first wavelength range to generate first intensity measurement data,

the second spectrometer is configured to measure intensities of the reflected light from the workpiece in a second wavelength range to generate second intensity measurement data, and

the first wavelength range is different from the second wavelength range.

9. The film-thickness measuring apparatus according to claim 6, wherein the liquid-seal sensor and the transparent-window sensor comprise a plurality of liquid-seal sensors and a plurality of transparent-window sensors.

10. The film-thickness measuring apparatus according to claim 6, wherein the liquid-seal sensor and the transparent-window sensor are arranged on each of a plurality of concentric circles having the same center as a rotation center of the polishing table.