

DESCRIPTION

~~ULTRASONIC CLEANING APPARATUS AND CLEANING METHOD~~

TECHNICAL FIELD

[0001]

The present invention relates to a method for cleaning and an ultrasonic cleaning apparatus, the method and the apparatus which clean an object to be cleaned such as semiconductor parts including a semiconductor wafer by immersing the object to be cleaned in a chemical solution or pure water and irradiating the object to be cleaned with ultrasonic waves.

BACKGROUND ART

[0002]

In cleaning of a semiconductor wafer, cleaning is usually performed in combination with ultrasonic cleaning in order to remove particles on a wafer front surface efficiently. In this ultrasonic cleaning, depending on the type of adhering particles, the state of a wafer, the quality after cleaning, and so forth, a frequency, an output, ultrasonic wave control, an ultrasonic cleaning tank, a cleaning time, and so forth are determined. Nowadays, ultrasonic cleaning by high-frequency waves of 1 MHz (so-called megasonic waves) is often performed to remove finer particles and prevent damage to the wafer front surface. However, the megasonic waves are high-frequency waves and therefore have high directivity, which causes a portion in a cleaning tank, the portion hidden behind a jig or the like, to be left without being cleaned and results in cleaning nonuniformity. To address this problem, a plurality of ultrasonic wave treatment tanks are placed and the position of a jig or the like is changed to eliminate cleaning

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