

TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

An ultrasonic cleaning apparatus, and method, includes a cleaning tank (10) for reserving cleaning fluid, an object such as a wafer (15) to be cleaned being immersed in the cleaning fluid, an ultrasonic vibrator (12) attached at the bottom of the tank for vibrating the cleaning fluid in the cleaning tank, and two micro-vibration sources (13, 14) for minutely vibrating the object to be cleaned in two different directions. The micro-vibration sources can be ultrasonic horns (13, 14) operating at 19.5 kHz. These horns are integral with a support member (16) that is used to hold the object. The vibrator (12) also produces a sound pressure distribution (17) between the fluid surface and bottom surface of the tank. The invention provides improved removal of polished tailings and residue contained in grooves of a wafer through ultrasonic cavitation cleaning combined with two directional ultrasonic vibrations.



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REPLACEMENT SHEET

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