ABSTRACT

A control system for bubbles in a liquid film, a wafer cleaning apparatus, and a wafer cleaning method are provided. The control system for bubbles in the liquid film comprises a megasonic generator, a sampler, a bubble detection module, and a controller. The megasonic generator is configured to transmit acoustic energy to the liquid film on a wafer for cleaning the wafer. The sampler is configured to obtain liquid from the liquid film on the wafer during the period when the megasonic generator cleans the wafer. The bubble detection module is connected to the sampler and is configured to perform bubble detection on the liquid obtained by the sampler to determine the bubble parameter in the liquid. The controller is connected to the bubble detection module and is configured to adjust the operating parameter of the megasonic generator according to the bubble parameter, so that the bubble parameter falls within a preset range. The present application solves the problem in the prior art where the "cavitation effect" of bubbles caused by the expansion-contraction oscillation of bubbles leads to the collapse and damage of the patterned structure on the wafer, thereby improving the wafer production yield.