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(54) Title: IMPROVED CLEANING OF A PLASMA PROCESSING SYSTEM SILICON ROOF

(57) Abstract: An apparatus for cleaning a silicon roof of a plasma chamber by etching the roof substantially without damage to the silicon structure. The etching is followed by cleaning the roof, using deionized water for rinsing the roof and determining the amount of particulate matter in the deionized water used for rinsing the roof. This is followed by determining qualitatively how much particulate matter of at least a certain size is in the deionized water. If the amount of particulate matter in the water is below a predetermined baseline, the particulate matter that will be deposited on material, such as a silicon wafer, being processed in the chamber is greatly reduced. The stability of the plasma processing with time is improved, with the time between roof cleanings rising from about 200 hours to nearly 300 hours.