

WHAT IS CLAIMED IS:

1. An etching method for a workpiece, comprising:

a workpiece loading step for loading a workpiece with a moisture attached thereon into a chamber;

a workpiece holding step for holding the moisture attached workpiece by a holding table with a ground surface of the workpiece oriented upward;

an evacuating step for evacuating the chamber to obtain a vacuum condition within the chamber after holding the workpiece by the holding table;

a moisture removing step of supplying an inert gas into the chamber storing said workpiece in a condition where said chamber has been evacuated and dissociating said inert gas under first processing conditions to form a first plasma and thereby remove moisture present on said workpiece and dry the workpiece; and

an etching step of supplying a fluorine-based stable gas instead of said inert gas into said chamber kept in the vacuum condition after performing said moisture removing step, and blowing said fluorine-based stable gas toward said workpiece and dissociating said fluorine-based stable gas under second processing conditions to form a second plasma and thereby dry-etch said dried workpiece.