

Components and Processes for Managing Plasma Process Byproduct Materials

Abstract

Components and processes are disclosed herein for managing non-volatile and/or low- volatility byproduct materials that are generated within a plasma processing region of a plasma processing chamber during performance of various plasma-based processes on a substrate. The components include a top window structure, a liner structure, an edge ring structure, a focus ring structure, a ground ring structure, a substrate access port shield, an insert liner for a port opening in a chamber wall, and an exhaust baffle assembly for positioning within an exhaust channel connected to the chamber. One or more process-exposed surface(s) of the various components are subjected to a surface roughening/texturizing process to impart a surface roughness and/or engineered topography to the process-exposed surface that promotes adhesion and retention of plasma process byproduct materials. The various components with roughened/texturized process-exposed surface(s) are configured for use in lead zirconate titanate (PZT) film etching and/or platinum (Pt) film etching processes.

Fig. 3