

ABSTRACT OF THE DISCLOSURE

Controlling CD and CD Uniformity with Trim Time and Temperature on a Wafer by Wafer Basis

Exemplary embodiments are directed to controlling CD uniformity of a wafer by controlling trim time on temperature in a plasma processing system. The plasma processing system has a wafer support assembly including a plurality of independently controllable temperature control zones across a chuck and a controller that controls each temperature control zone. The controller receives process control and temperature data associated with at least one wafer previously processed in a plasma chamber of the plasma processing system. The controller also receives critical device parameters of a current wafer to be processed in the plasma chamber. The controller calculates a target trim time and a target temperature profile of the current wafer based on the process control and temperature data of the at least one previously processed wafers and the critical device parameters of the current wafer. The current wafer as subjected to a trimming operation for a duration of the target trim time while controlling temperatures in the temperature control zones to thereby control temperature of each device die location based on the target temperature profile.

Fig. 1

