

METHODS FOR ADJUSTING CRITICAL DIMENSION UNIFORMITY IN AN ETCH PROCESS

ABSTRACT

Methods for etching a metal material layer disposed on a substrate to form features with desired profile and uniform critical dimension (CD) of the features across the substrate. In one embodiment, a method for etching a material layer disposed on a substrate includes providing a substrate having a metal layer disposed on a substrate into an etch reactor, flowing a gas mixture containing at least a chlorine containing gas and a passivation gas into the reactor, the passivation gas including a nitrogen gas and an unsaturated hydrocarbon gas, wherein the nitrogen gas and the unsaturated hydrocarbon gas has a gas flow rate ratio between about 1:3 and about 20:1, and etching the metal layer using a plasma formed from the gas mixture.

(FIG. 2)