

ETCHING OF NANO-IMPRINT TEMPLATES USING AN ETCH REACTOR

ABSTRACT

Methods for etching a metal layer using an imprinted resist material are provided. In one embodiment, a method for processing a photolithographic reticle includes providing a reticle having a metal photomask layer formed on an optically transparent substrate and an imprinted resist material deposited on the metal photomask layer, etching recessed regions of the imprinted resist material to expose portions of the metal photomask layer in a first etching step, and etching the exposed portions of the metal photomask layer through the imprinted resist material in a second etching step, wherein at least one of the first or second etching steps utilizes a plasma formed from a processing gas comprising oxygen, halogen and chlorine containing gases. In one embodiment, the process gas is utilized in both the first and second etching steps. In another embodiment, the first and second etching steps are performed in the same processing chamber.

Fig. 2