PROCESS FOR ETCHING AN INSULATING LAYER AND FORMING A SEMICONDUCTOR DEVICE

ABSTRACT OF THE DISCLOSURE

Many variations of etches for insulating layers (114, 400, 422, 426) can be used. In one set of embodiments, an insulating layer (114, 400, 422, 426) is etched using an oxide etching component, a fluorine-scavenging component, and an organic etching component. In another set of embodiments, the insulating layer (114, 400, 422, 426) includes at least one atomic weight percent of carbon or hydrogen. That insulating layer is etched using an oxide etching gas and a nitrogen-containing gas. In yet another set of embodiments, an insulating layer (114, 400, 422, 426) is formed over semiconductor device substrate (100) having a diameter of at least approximately 300 millimeters. The insulating layer (114, 400, 422, 426) is etched using an oxide etching gas and a nitrogen-containing gas.

FIG 2 to accompany abstract.