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(54) Title: ULTRA-HIGH ASPECT RATIO DIELECTRIC ETCH

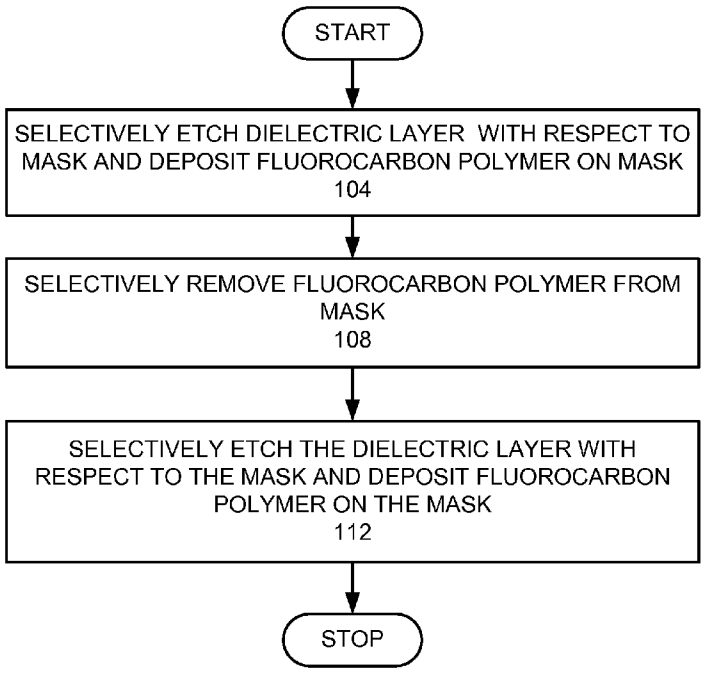


FIG. 1

(57) Abstract: A method for etching an ultra high aspect ratio feature in a dielectric layer through a carbon based mask is provided. The dielectric layer is selectively etched with respect to the carbon based mask, wherein the selective etching provides a net deposition of a fluorocarbon based polymer on the carbon based mask. The selective etch is stopped. The fluorocarbon polymer is selectively removed with respect to the carbon based mask, so that the carbon based mask remains, using a trimming. The selectively removing the fluorocarbon polymer is stopped. The dielectric layer is again selectively etched with respect to the carbon based mask, wherein the second selectively etching provides a net deposition of a fluorocarbon based polymer on the carbon based mask.

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