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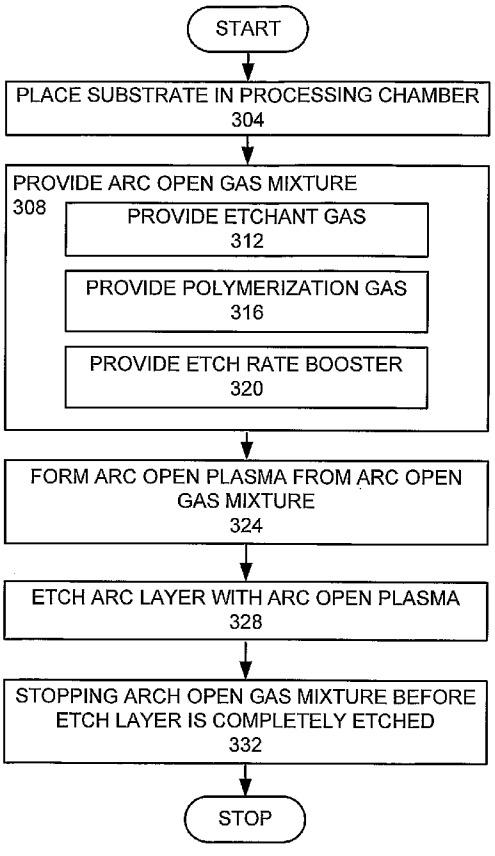
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(54) Title: LINE EDGE ROUGHNESS CONTROL



(57) Abstract: A method for etching a layer through a photoresist mask with an ARC layer between the layer to be etched and the photoresist mask over a substrate is provided. The substrate is placed into a processing chamber. An ARC open gas mixture is provided into the processing chamber. The ARC open gas mixture comprises an etchant gas and a polymerization gas comprising CO and CH3F. An ARC open plasma is formed from the ARC open gas mixture. The ARC layer is etched with the ARC open plasma until the ARC layer is opened. The ARC open gas mixture stopped before the layer to be etched is completely etched.

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