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(54) Title: **HARDMASKS AND PROCESSES FOR FORMING HARDMASKS BY PLASMA- ENHANCED CHEMICAL VAPOR DEPOSITION**

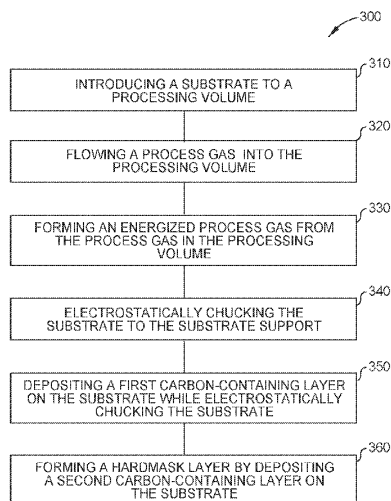


FIG. 3

(57) Abstract: Embodiments of the present disclosure generally relate to hardmasks and to processes for forming hardmasks by plasma-enhanced chemical vapor deposition (PECVD). In an embodiment, a process for forming a hardmask layer on a substrate is provided. The process includes introducing a substrate to a processing volume of a PECVD chamber, the substrate on a substrate support, the substrate support comprising an electrostatic chuck, and flowing a process gas into the processing volume within the PECVD chamber, the process gas comprising a carbon-containing gas. The process further includes forming, under plasma conditions, an energized process gas from the process gas in the processing volume, electrostatically chucking the substrate to the substrate support, depositing a first carbon-containing layer on the substrate while electrostatically chucking the substrate, and forming the hardmask layer by depositing a second carbon-containing layer on the substrate.

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