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(54) Title: OXYGEN AND IODINE-CONTAINING HYDROFLUOROCARBON COMPOUND FOR ETCHING SEMICONDUCTOR STRUCTURES

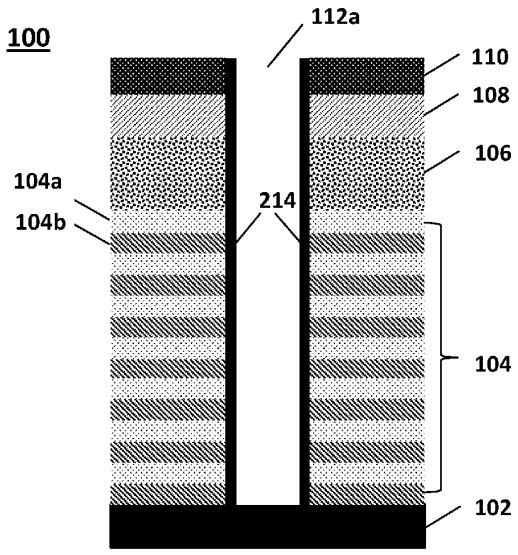


FIG. 1b

(57) Abstract: A method comprises: introducing a vapor of an oxygen and iodine-containing etching compound into a chamber that contains a substrate having a silicon-containing film deposited thereon and a patterned mask layer deposited on the silicon-containing layer, wherein the oxygen and iodine-containing etching compound has the formula $C_nH_xF_yI_zO_e$, wherein $0 \leq n \leq 10$, $0 \leq x \leq 21$, $0 \leq y \leq 21$, $1 \leq z \leq 4$ and $1 \leq e \leq 2$; activating a plasma to produce an activated oxygen and iodine-containing etching compound; and allowing an etching reaction to proceed between the activated oxygen and iodine-containing etching compound and the silicon-containing film to selectively etch the silicon-containing film from the patterned mask layer, thereby forming a patterned structure.

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