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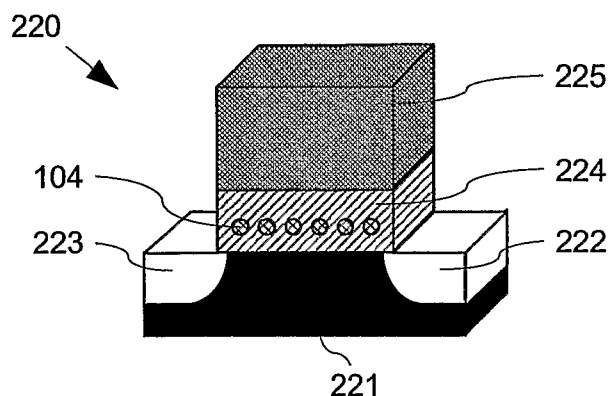
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(54) Title: NONVOLATILE FLASH MEMORY DEVICE AND METHOD FOR PRODUCING DIELECTRIC OXIDE NANODOTS ON SILICON DIOXIDE



(57) Abstract: A method of producing dielectric oxide nanodots (104) embedded in silicon dioxide as well as a nonvolatile flash memory device comprising a trapping layer (224), the trapping layer (224) comprising dielectric oxide nanodots (104) embedded in silicon dioxide are presented. Firstly an ultra-thin metal film is deposited over a first dielectric layer including silicon dioxide provided on a substrate. Then, the ultra-thin metal film is annealed for forming metallic nanodots (104) on the first dielectric layer. Afterwards, the metallic nanodots (104) are annealed for forming dielectric oxide nanodots (104) on the first dielectric layer. Finally, the first dielectric layer and the dielectric oxide nanodots (104) are covered with a second dielectric layer of silicon dioxide for forming dielectric oxide nanodots (104) embedded in silicon dioxide.

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