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(71) Applicants *(for all designated States except MC)*: **INTERNATIONAL BUSINESS MACHINES CORPORATION** [US/US]; New Orchard Road, Armonk, NY 10504 (US). **INFINEON TECHNOLOGIES NORTH AMERICA CORPORATION** [US/US]; 1730 North First Street, San Jose, CA 95112 (US).

(71) Applicant *(for MC only)*: **COMPAGNIE IBM FRANCE** [FR/FR]; Tour Descartes, 2, avenue Gambetta, F-92066 Paris la Défense Cedex (FR).

(72) Inventors: **ARMACOST, Michael, D.**; 6546 Woodcliff Drive, San Jose, CA 95120 (US). **AUGUSTIN, Andreas, K.**; Holzstrasse 19, 80469 Munich (DE). **FRIESE, Gerald, R.**; Apt. 9, 2 Greenhill Drive, Fishkill, NY 12524 (US). **HEIDENREICH, John, E., III**; 332 Lewis Avenue, Yorktown Heights, NY 10598 (US). **HUECKEL, Gary, R.**; 555 Lakeshore, Putnam Valley, NY 10579 (US). **STEIN, Kenneth, J.**; 31 Riverside Road, Sandy Hook, CT 06482 (US).

(74) Agent: **KLEIN, Daniel**; Compagnie IBM France, Direction de la Propriété Intellectuelle, F-06610 La Gaude (FR).

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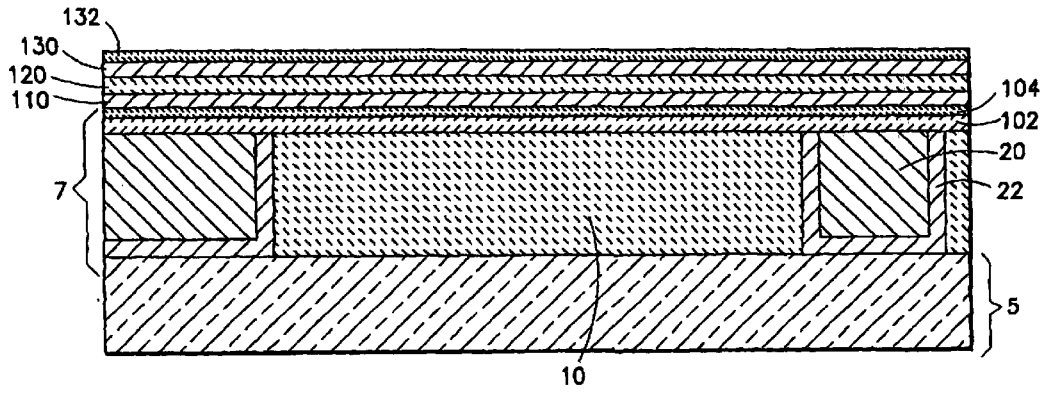
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(54) Title: METAL-INSULATOR-METAL CAPACITOR IN COPPER



(57) Abstract: A parallel plate capacitor in copper technology is formed in an area that has no copper below it (within 0.3μ) with a bottom etch stop layer (104), a composite bottom plate (110) having an aluminium layer below a TiN layer, an oxide capacitor dielectric (120), and a top plate (130) of TiN. The process involves etching the top plate to leave a capacitor area, etching the bottom plate to a larger bottom area having a margin on all sides; depositing an interlayer dielectric having a higher material quality below the top surface of the capacitor top plate; opening contact apertures to the top and bottom plates and to lower interconnect to a two step process that partially opens a nitride cap layer on the lower interconnect and the top plate while penetrating the nitride cap layer above the bottom plate, then cutting through the capacitor dielectric and finishing the penetration of the nitride cap layer.

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