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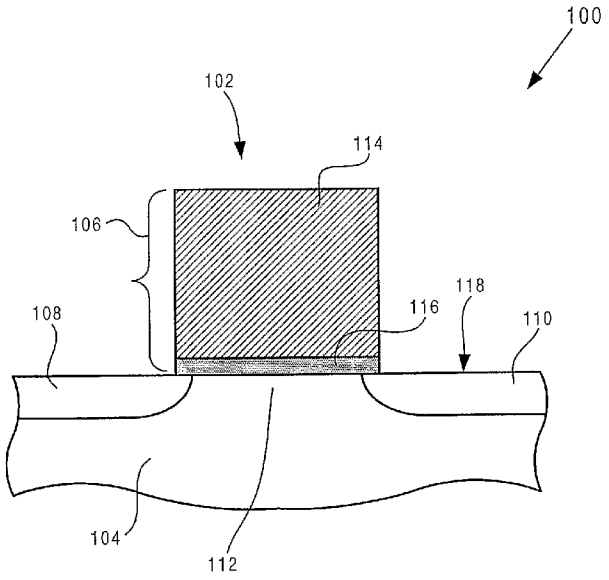
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*[Continued on next page]*

(54) Title: FIELD EFFECT TRANSISTOR HAVING INCREASED CARRIER MOBILITY




(57) Abstract: According to one exemplary embodiment, a FET which is situated over a substrate (104), comprises a channel (112) situated in the substrate (104). The FET further comprises a first gate dielectric (116) situated over the channel (112), where the first gate dielectric (116) has a first coefficient of thermal expansion. The FET further comprises a first gate electrode (114) situated over the first gate dielectric (116), where the first gate electrode (114) has a second coefficient of thermal expansion, and where the second coefficient of thermal expansion is different than the first coefficient of thermal expansion so as to cause an increase in carrier mobility in the FET. The second coefficient of thermal expansion may be greater that the first coefficient of thermal expansion, for example. The increase in carrier mobility may be caused by, for example, a tensile strain created in the channel (112).

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