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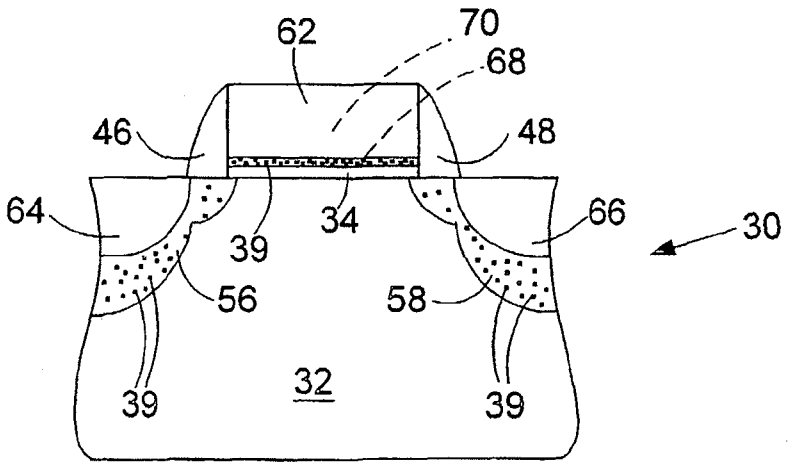
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(54) Title: METAL GATE ELECTRODE USING SILICIDATION AND METHOD OF FORMATION THEREOF




(57) Abstract: A semiconductor device is fabricated by providing a substrate (32), and providing a dielectric layer (34) on the substrate (32). A polysilicon body (36) is formed on the dielectric layer (34), and a metal layer (60) is provided on the polysilicon body (36). A silicidation process is undertaken to silicidize substantially the entire polysilicon body (36) to form a gate (62) on the dielectric (34). In an alternative process, a cap layer (90) is provided on the polysilicon body (86), which cap layer (90) is removed prior to the silicidation process. In both embodiments, the polysilicon body (36, 86) is doped with a chosen specie prior to the silicidation process, which dopant (39, 89), during the silicidation process, is driven toward the dielectric layer (34, 84) to form a gate portion (60, 150) having a high concentration thereof adjacent the dielectric (34, 84), the type and concentration of this specie being instrumental in determining the work function of the formed gate (62, 122).

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