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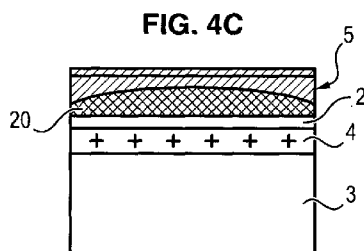
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(54) **Title:** PROCESS FOR THINNING THE ACTIVE SILICON LAYER OF A SUBSTRATE OF "SILICON ON INSULATOR" (SOI) TYPE



(57) **Abstract:** The invention relates to a process for thinning the active silicon layer (2) of a substrate, which comprises an insulator layer (4) between active layer (2) and a support (3), this process comprising one step of sacrificial thinning of active layer (2) by formation of a sacrificial oxide layer (20) by sacrificial thermal oxidation and deoxidation of layer (20). The process is noteworthy in that it comprises: a step of forming a complementary oxide layer (5), on said active layer (2), using an oxidizing plasma, this layer (5) having a thickness profile complementary to that of oxide layer (20), so that the sum of the thicknesses of the layer (5) and of the sacrificial silicon oxide layer (20) are constant over the surface of the treated substrate, a step of deoxidation of this layer (5), so as to thin active layer (2) by a uniform thickness.

