Modeling of Interface Defect Distribution for an n-MOSFETs Under Hot-Carrier Stressing

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We propose to model the evolution of the interface defect density, induced by the hot-carrier-injection, during stress time for n-MOSFET transistor. This interface defect density is modeled by a spatial and temporal gaussian distribution centered close to the extremity of the channel near the drain. The gaussian Parameters (standard deviation and maximum) vary according to the stress. The stress generated defects leads to the degradation of the threshold voltage. The analysis of the threshold voltage evolution with stress time allows us to handle informations on the device performances degradation. The mathematic expression is simple so that the present model is suitable for circuit simulator.

存档文本

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