Dataset: 22 nm bulk FinFET Total Ionizing Dose simulation

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September 18, 2018

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Abstract

Total Ionizing Dose is simulated using the gamma radiation model in a 22 nm FinFET device in Synopsys Sentaurus TCAD. Charge transport and trapping are activated in the field oxides.

Code availability

Description

'22nm_FinFET_Id_Vg.gzp' contains Current-Voltage calibration to characteristics of 22nm commercial FinFET node.

'22nm_FinFET_Radiation.gzp' contains 3D gamma radiation simulations of the device under zero bias. Gamma radiation, charge transport and trapping are activated in the bulk oxides.

Usage Notes

All files are workbench projects which were extracted with openssl encryption and no key.

The process simulation runs fine on version H-2013.03 of Sentaurus TCAD.

Citing

Chatzikyriakou, E., Potter, K., Redman-White, W., & De Groot, C. H. (2017). Three-dimensional Finite Elements Method simulation of Total Ionizing Dose in 22 nm bulk nFinFETs. Nuclear Instruments and Methods in Physics Research,

Acknowledgements