

1. Record Nr.	UNINA9910822454603321
Autore	Roll Guntrade
Titolo	Leakage current and defect characterization of short channel MOSFETs // Guntrade Roll
Pubbl/distr/stampa	Berlin : , : Logos Verlag Berlin, , [2014] ©2014
ISBN	3-8325-9666-6
Descrizione fisica	1 online resource (242 pages)
Collana	Research at NaMLab ; ; 2
Disciplina	621.3815284
Soggetti	Metal oxide semiconductor field-effect transistors
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	PublicationDate: 20121130
Sommario/riassunto	Long description: The continuous improvement in semiconductor technology requires field effect transistor scaling while maintaining acceptable leakage currents. This study analyzes the effect of scaling on the leakage current and defect distribution in peripheral DRAM transistors. The influence of important process changes, such as the high-k gate patterning and encapsulation as well as carbon co-implants in the source/drain junction are investigated by advanced electrical measurements and TCAD simulation. A complete model for the trap assisted leakage currents in the silicon bulk of the transistors is presented.