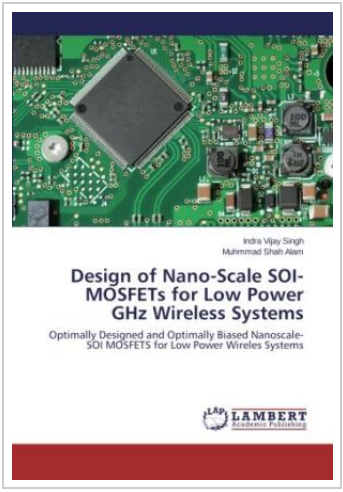

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Design of Nano-Scale SOI-MOSFETs for Low Power GHz Wireless Systems

By Singh, Indra Vijay / Alam, Muhmmad Shah

Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Optimally Designed and Optimally Biased Nanoscale-SOI MOSFETS for Low Power Wireles Systems | The key points of this book can be summarized as follows: A nano-scale gate-underlap SOI MOSFETs has been designed and optimized, which has been authenticated through simulation using SILVACO ATLAS TCAD. Furthermore, an overall non-quasi-static (NQS) small signal equivalent model of the designed SOI MOSFET has presented by taking into account its intrinsic and extrinsic parameters. In addition, the model has been found to predict high frequency noise very well, which is important for the design of LNA and Mixer for high frequency applications. The developed NQS overall model of the device has been verified by designing LNA and Mixer for multiband wireless LAN applications. Some of the key extracted parameters of underlap device (Cgs, Cgd, Cds, Rge, Rse and Rde, respectively) were used in large-signal SOI-BSIM4 model and design of dual-bands cascode mixer for 2.4GHz and 5.8GHz bands has been carried out. In addition, effects of process parameters variations of underlap FD-SOI MOSFETs on linearity of cascode LNA and Mixer for wireless LAN applications have been presented using ATLAS TCAD mixed-mode simulation. | Format: Paperback | Language/Sprache: english...

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