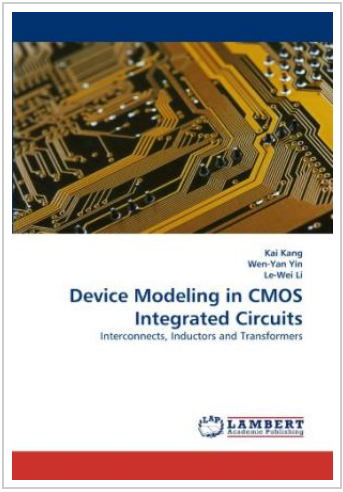

Device Modeling in CMOS Integrated Circuits

By Kang, Kai / Yin, Wen-Yan

Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Interconnects, Inductors and Transformers | On-chip passive components such as interconnects, inductors and transformers are widely used in CMOS high speed digital, mixed-signal and radio frequency integrated circuits (ICs). Therefore, accurate modeling of circuit behavior, especially for these passive components, is crucial for first-time-right designs. This book focus on modeling and characterization of on-chip interconnects, inductors and transformers. Firstly, a fully scalable and SPICE-compatible interconnects model is established and is accurate over a wideband frequency range up to 110 GHz. Secondly, frequency- and temperature-dependent characteristics of on-chip coupled asymmetrical and symmetrical interconnects are investigated in detail. Furthermore, an eleven-element equivalent circuit model is established for on-chip spiral inductors. Additionally, a vertical tapered solenoidal inductor is designed to achieve a high resonance frequency. Finally, extensive studies on the performances of on-chip transformers with and without patterned ground shields at different temperatures are carried out. This book targets at those who are interested in the CMOS IC designs, and would like to develop passive devices models. | Format: Paperback | Language/Sprache: english | 315 gr | 228 pp.

Reviews

The most effective book i ever read. I really could comprehended almost everything out of this published e ebook. You wont truly feel monotony at at any time of your respective time (that's what catalogs are for regarding should you ask me).

-- ***Rusty Kerluke***

Without doubt, this is actually the best operate by any article writer. Indeed, it can be perform, nonetheless an interesting and amazing literature. Its been written in an exceedingly straightforward way in fact it is only soon after i finished reading through this book through which in fact changed me, modify the way in my opinion.

-- ***Miss Elissa Kutch V***