# YIELD AND VARIABILITY OPTIMIZATION OF INTEGRATED CIRCUITS

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# Yield And Variability Optimization Of Integrated Circuits

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**Yield And Variability Optimization Of Integrated Circuits:**

**Yield and Variability Optimization of Integrated Circuits** Jian Cheng Zhang,M.A. Styblinski,2013-03-09 Traditionally Computer Aided Design CAD tools have been used to create the nominal design of an integrated circuit IC such that the circuit nominal response meets the desired performance specifications In reality however due to the disturbances ofthe IC manufacturing process the actual performancesof the mass produced chips are different than those for the nominal design Even if the manufacturing process were tightly controlled so that there were little variations across the chips manufactured the environmentalchanges e g those oftemperature supply voltages etc would alsomakethe circuit performances vary during the circuit life span Process related performance variations may lead to low manufacturing yield and unacceptable product quality For these reasons statistical circuit design techniques are required to design the circuit parameters taking the statistical process variations into account This book deals with some theoretical and practical aspects of IC statistical design and emphasizes how they differ from those for discrete circuits It de scribes a spectrum of different statistical design problems such as parametric yield optimization generalized on target design variability minimization per formance tunning and worst case design The main emphasis of the presen tation is placed on the principles and practical solutions for performance vari ability minimization It is hoped that the book may serve as an introductory reference material for various groups of IC designers and the methodologies described will help them enhance the circuit quality and manufacturability The book containsseven chapters Yield and Variability Optimization of Integrated Circuits Jian Cheng Zhang,1992

**Scientific and Technical Aerospace Reports** ,1994-07 Computer-Aided Design of Analog Integrated Circuits and Systems Rob A. Rutenbar,Georges G. E. Gielen,2002-05-06 The tools and techniques you need to break the analog design bottleneck Ten years ago analog seemed to be a dead end technology Today System on Chip SoC designs are increasingly mixed signal designs With the advent of application specific integrated circuits ASIC technologies that can integrate both analog and digital functions on a single chip analog has become more crucial than ever to the design process Today designers are moving beyond hand crafted one transistor at a time methods They are using new circuit and physical synthesis tools to design practical analog circuits new modeling and analysis tools to allow rapid exploration of system level alternatives and new simulation tools to provide accurate answers for analog circuit behaviors and interactions that were considered impossible to handle only a few years ago To give circuit designers and CAD professionals a better understanding of the history and the current state of the art in the field this volume collects in one place the essential set of analog CAD papers that form the foundation of today s new analog design automation tools Areas covered are Analog synthesis Symbolic analysis Analog layout Analog modeling and analysis Specialized analog simulation Circuit centering and yield optimization Circuit testing Computer Aided Design of Analog Integrated Circuits and Systems is the cutting edge reference that will be an invaluable resource for every semiconductor circuit designer and CAD professional who hopes to break the analog design

bottleneck     *The Circuits and Filters Handbook* Wai-Kai Chen,2002-12-23 A bestseller in its first edition The Circuits and Filters Handbook has been thoroughly updated to provide the most current most comprehensive information available in both the classical and emerging fields of circuits and filters both analog and digital This edition contains 29 new chapters with significant additions in the areas of computer     *Proceedings of the ... Midwest Symposium on Circuits and Systems* ,2003

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