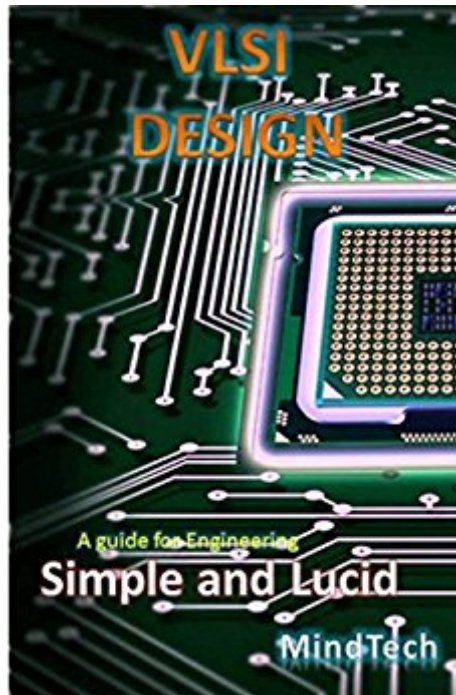# VLSI DESIGN SIMPLE AND LUCID EXPLANATION

Synopsis

This book explains Very Large Sytem Integration (VLSI) in a simple and lucid style.The book is very beneficial for engineering students. It is divided into 5 modules:Module 1Process steps in IC fabrication: Silicon wafer preparation-Diffusion of impurities-physical mechanism-ion implantation-Annealing process- Oxidation process-lithography-Chemical Vapour Deposition -epitaxial growth â "reactors-metallization-patterning-wire bonding -packaging Module 2 Monolithic components: Isolation of components-junction isolation and dielectric isolation. Monolithic diodes- schottky diodes and transistors-buried layer-FET structures- JFET-MOSFET-PMOS and NMOS. Control of threshold voltage- silicon gate technology- monolithic resistors-resistor design-monolithic capacitors- design of capacitors- IC crossovers and vias. Module 3 CMOS technology: CMOS structure-latch up in CMOS, CMOS circuits-combinational logic circuit-invertor- NAND-NOR-complex logic circuits, full adder circuit. CMOS transmission gate(TG)T-realization of Boolean functions using TG. Complementary Pass Transistor Logic (CPL)-CPL circuits: NAND, NOR-4 bit shifter. Basic principle of stick diagrams. Module 4 CMOS sequential logic circuits: SR flip flop, JK flip flop, D latch circuits. BiCMOS technology-structure-BiCMOS circuits: inverter, NAND, NOR-CMOS logic systems-scaling of MOS structures-scaling factors-effects of miniaturization. Module 5 Gallium Arsenide Technology: Crystal structure-doping process-channeling effect- MESFET fabrication-Comparison between Silicon and GaAs technologies. Introduction to PLA and FPGA

Book Information

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Customer Reviews

simple and easy to understand . usefull for engineers . great work !!

It is a very helpful textbook that I think this book will benefit the students to know more about VLSI design

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