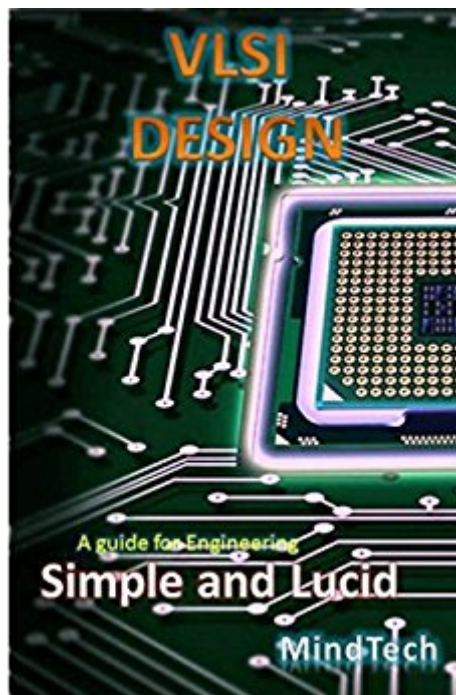




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# VLSI DESIGN SIMPLE AND LUCID EXPLANATION: Vlsi Design For Students



## Synopsis

This book explains Very Large Scale Integration (VLSI) in a simple and lucid style. The book is very beneficial for engineering students and also in Preparing for GATE exam. It is divided into 5 modules:

**Module 1** Process steps in IC fabrication: Silicon wafer preparation-Diffusion of impurities-physical mechanism-ion implantation- Annealing process- Oxidation process-lithography-Chemical Vapour Deposition -epitaxial growth

“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

File Size: 331 KB

Print Length: 170 pages

Simultaneous Device Usage: Unlimited

Publisher: MINDTECH (March 2, 2016)

Publication Date: March 2, 2016

Sold by: Digital Services LLC

Language: English

ASIN: B01CHBYIPM

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Enabled

Enhanced Typesetting: Not Enabled

Best Sellers Rank: #389,280 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #25

inÂ Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > VLSI & ULSI #98 inÂ Kindle Store > Kindle eBooks > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits #190 inÂ Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design

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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

Maybe the contents are good, but all figures cannot be displayed on my kindle. I'm not sure how to fix this issue. Please fix, thanks.

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