

# Fundamentals of Ultra-Thin-Body MOSFETs and FinFETs

By Jerry G. Fossum, Vishal P. Trivedi



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Understand the theory, design and applications of the two principal candidates for the next mainstream semiconductor-industry device with this concise and clear guide to FD/UTB transistors. • Describes FD/SOI MOSFETs and 3-D FinFETs in detail • Covers short-channel effects, quantum-mechanical effects, applications of UTB devices to floating-body DRAM and conventional SRAM • Provides design criteria for nanoscale FinFET and nanoscale thin- and thick-BOX planar FD/SOI MOSFET to help reduce technology development time • Projects potential nanoscale UTB CMOS performances • Contains end-of-chapter exercises. For professional engineers in the CMOS IC field who need to know about optimal non-classical device design and integration, this is a must-have resource.

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About the Author

Jerry G. Fossum is Distinguished Professor Emeritus of Electrical and Computer Engineering at the University of Florida, Gainesville, and a Fellow of the IEEE. He won the IEEE/EDS J. J. Ebers Award in 2004 for 'outstanding contributions to the advancement of SOI CMOS devices and circuits through modeling'.

Vishal P. Trivedi is a Member of the Technical Staff and a Distinguished Innovator at Freescale Semiconductor, Inc., and a Senior Member of the IEEE.

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