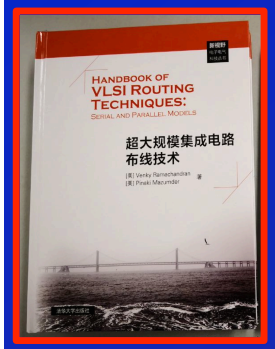
Sponsored Research Projects

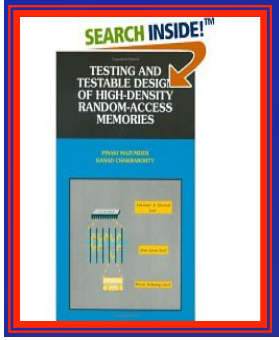
Outcome: 350 papers+12 US Patents+6 Books

Evolutionary CMOS Research

Sponsors: NSF, DARPA, AFOSR, ARO, ONR, etc.

Revolutionary Technology Research





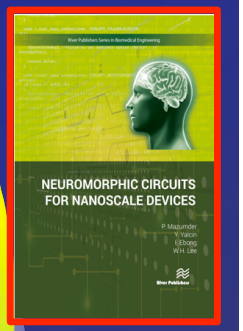
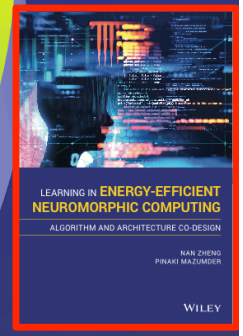
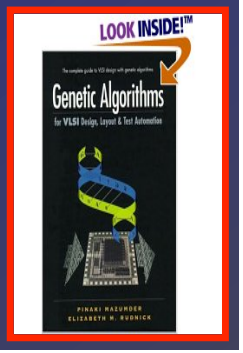
CMOS Design Tools: EM Effects on Circuits using FDQ, Thermal Modeling using Green's Functions, Dynamic Noise Modeling, Delay Modeling by DQM.

Biologically-Inspired VLSI Design: GA-based Distributed Layout Tools, Self-Healing VLSI, Cellular Neural Nets, Machine Learning, Reinforcement Learning, STDP, & Deep Learning

Nano Circuit & System Design: Quantum And Nanoelectronic Devices Circuits & Architectures

PI: ~$15 MM
Coll.:$50 MM

Quantum Physics based CAD Tools: QSPICE, VEDICS, QUECDOE

Memories: DRAM, SRAM, Tunneling RAM, Memristor, STT, traintronics, Testable Design Reliability, Self-Healing

THz Technology: Spoof Surface Plasmon THz interconnect, switches, ADC, Metasurface, QKD.