NANO-RELIABILITY: FAULT-TOLERANT ARHITECTURES FOR NANOELECTRONICS

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Abstract: *The reliability of nanoelectronics systems, bring in attention many new problems, new failure mechanisms and different response to stress. The dimensions of components are very small and they are more susceptible to failure, imposing new rules for manufacturing and more costs. New design concepts need to be adopted in order to improve reliability. A solution for complex nanoelectronic devices is to develop and design fault tolerant architectures. The current paper overviews the implementation techniques fault tolerant architectures in nanoelectronics. The main ideas explored are the fault tolerance models suitable for nanoelectronics devices. After a classification of fault tolerant architectures, the main redundant structures are discussed and the advantages and the weak points are revealed.*

Keywords: *Reliability, nano-electronics, fault-tolerance, electronic architecture.*