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## Consummate Perspicacious Access of Logic Devices Achieving Ultra-Low-Power in Sub-Threshold Voltages

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Abstract: - Biomedical devices that are implanted with human body require low energy delivery that results from various subsystems of the device. The stringent energy constraints dominate architectural and implementation decisions throughout the design of biomedical systems. This paper deals with balancing the trade-off between power and performance at the two extreme ends of the design spectrum, namely the ultra-low power with acceptable performance in one end, and high performance with power within limit at the other. Thus static CMOS logic circuits are analysed in sub-threshold voltages to design the logic blocks with minimum energy consumption. Power consumption of the circuits with normal supply voltage is compared with the power of the circuits operating under ultra-low voltages. In this paper static CMOS with different body biasing schemes that allows bulk CMOS circuits to operate efficiently at sub-threshold as well as above threshold voltages is introduced. The simulations have been performed at the 180 nm technology node.