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[INVITED PAPER] Industry standardization of ultra-low-power designs for wireless devices allows new tools and methods to be incorporated into the design flow as they mature.

By S. K. Gupta, A. Raychowdhury, and K. Roy
[INVITED PAPER] When the supply voltage is less than the threshold value needed to sustain normal operation, useful digital circuit performance can be obtained by using leakage current for computation.

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[INVITED PAPER] Circuits such as logic cells, static random access memories, analog-digital converters and dc-dc converters can be used as building blocks for applications that can function efficiently over a wide range of supply voltages.

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[INVITED PAPER] An eightfold improvement in power efficiency can be achieved without loss of performance for modestly parallelizable CMOS-based computer systems.

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By R. G. Drechsler, M. Wieczorek, D. Blaauw, D. Sylvester, and T. Mudge
[INVITED PAPER] Future computer systems promise to achieve an energy reduction of 100 or more times with memory design, device structure, device fabrication techniques, and clocking, all optimized for low-voltage operation.

On the Cover: Our cover illustration this month includes a single candle to suggest the idea of new circuit designs that require only ultralow power to operate effectively in a new generation of electronic devices.

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