

# Technologies for Reducing Power

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**Abstract.** With power and cooling becoming an increasingly costly part of the operating cost of a server, the old trend of striving for higher performance with little regard for power is over. Emerging semiconductor process technologies, multicore architectures, and new interconnect technology provide an avenue for future servers to become low power, compact, and possibly mobile. In our talk we examine three techniques for achieving low power: 1) Near threshold operation; 2) 3D die stacking; and 3) replacing DRAM with Flash memory.

## Biography

Trevor Mudge received the Ph.D. degree in Computer Science from the University of Illinois, Urbana, in 1977. Since then, he has been on the faculty of the University of Michigan, Ann Arbor. In 2004, he was named the first Bredt Family Professor of Electrical Engineering and Computer Science after concluding a ten year term as the Director of the Advanced Computer Architecture Laboratory – a group of about 8 faculty and 80 graduate students. He is author of numerous papers on computer architecture, programming languages, VLSI design, and computer vision. He has also chaired 33 theses in these research areas. In addition to faculty position, he runs Idiot Savants, a chip design consultancy. Trevor Mudge is a Fellow of the IEEE, a member of the ACM, the IET, and the British Computer Society.