Literature Watch

ASICs

Million-gate ASICs to provide systems on a chip. The demand for higher performance and increased functionality push process size towards 0.1 micron and gate count towards 1 million. Dave Bursky, *Electronic Design,* 1/10/94, p. 59, 6 pp.

Development Tools

Process management will tap EDA productivity. Tool integration will allow users to choose the best methodology for each part of a design, then fuse those parts into a unified whole. Lisa Maliniak, *Electronic Design,* 1/10/94, p. 80, 5 pp.

Submicron ASIC designers scream for synthesis-to-layout links. As designers rely on static timing analyzers to resolve timing-related problems, tool and ASIC vendors try to close the loop between front-end and back-end tools, pushing physical information up in the design cycle. Barbara Tuck, *Computer Design,* 12/93, p. A20, 5 pp.

Simulator vendors sending out mixed signals. "Glued," "unified," and "backplane" approaches to mixed-signal simulation each have advantages. Mike Donlin, *Computer Design,* 1/94, p. 48, 3 pp.

Memory

Developing 3D memories. Although 3D stacks of memory chips are just beginning to emerge from the laboratory, this technology could enable a new generation of lower-cost, higher performance, and more reliable computer systems. Arun K. Sood, *IEEE Micro*, 12/93, p. 6, 3 pp.

Miscellaneous

Vectorizing compilers boost throughput from software side. One of the last optimizations from the mainframe arena finally makes its appearance in the microprocessor world. Jeff Child, *Computer Design*, 1/94, p. 54, 2 pp.

Compilers take on more optimization chores. Using different strategies for different parts of a program yields maximum optimization. (Includes directory of optimizing compilers.) Jeffrey Child, *Computer Design,* 1/94, p. 105, 5 pp.

Emerging 100-Mbit Ethernet standards ease system bottlenecks. Two standards emerge as the industry moves to meet demands for higher speed. Richard A. Quinnell, *EDN*, 1/6/94, p. 35, 4 pp.

Exploring the interactive market—confusion, confusion. Telephone companies prepare to enter the nascent interactive multimedia market, though nobody knows whether a market exists or how big it is. Lewis H. Young, *Electronic Business Buyer,* 12/93, p. 69, 4 pp.

Practical data compression. A practical approach to the use of scaling as a data compression method. Terry Egan, *Embedded Systems Programming,* 1/94, p. 64, 6 pp.

Peripherals

The development of ATM standards and technology: A retrospective. The telecommunications and information technology industries currently see Asynchronous Transfer Mode as the next major infrastructure technology. With roots in experimental switching technologies, ATM evolved along lines suggested by standards organizations. Richard Vickers, *IEEE Micro*, 12/93, p. 62, 12 pp.

Communications vendors bank on ATM growth. Asynchronous-transfer mode data communications is a revolution in the making, but the cell-based technology has some hurdles to clear. Dwight B. Davis, *Electronic Business Buyer*, 12/93, p. 45, 3 pp.

Portable communication to exploit infrared technology. Infrared devices have long enjoyed varied but mature markets. Now a standard for infrared data exchange may pave the way for exciting new applications. Patrick Mannion, *Electronic Products*, 12/93, p. 25, 3 pp.

Chip set delivers 100 Mbit/s to the desktop. By dividing a 100-Mbps data stream into four 25-Mbps streams, a chip set for 100Base-VG networks trims connectivity cost. Dave Bursky, *Electronic Design,* 1/10/94, p. 45, 6 pp.

Processors

Embedded designs follow CPU curve. Increased density has led to a higher level of integration and reduced manufacturing costs. Barry Barrett, Sun Microsystems; *Electronic Design*, 1/10/94, p. 129, 3 pp.

RISC micros wrestle to win their place in hottest embedded applications. Once dominated by 8-bit microcontrollers, the embedded market shows increasing interest in more powerful RISC machines. Stephan Ohr, *Computer Design,* 1/94, p. 77, 7 pp.

Programmable Logic

Selecting the best device for in-system programmability. Designing a product for in-system programmability means big savings in manufacturing. Richard Mitchell, Lattice Semiconductor; *Computer Design*, 12/93, p. A29, 5 pp.

System Design

Team's divide-and-conquer tactics yield super results. Breaking a complex problem into solvable pieces is the secret to this computer's design. Mike Donlin, *Computer Design,* 12/93, p. 91, 4 pp.

NT runs Windows 3.1 programs, but CAE vendors focus on native applications and RISC CPUs. Although Windows NT is shipping, most circuit designers remain unclear as to how it will affect their work in circuit and board design. Russ Lindgren, *Personal Engineering*, 1/94, p. 43, 8 pp.

Designing printed circuits for high-speed logic. PCB design for high-speed microprocessors requires careful study and understanding of transmission line theory. David Prutchi, *The Computer Applications Journal*, 1/94, p. 38, 5 pp.

