



Building a community

■ *IEEE Design & Test* is more than just a magazine. It represents a community—a community of communities, really—with technical interests in microelectronics design, design automation, and test. Once a year, these communities find a meeting ground: the Design Automation Conference (DAC) for the design and design automation communities, and the International Test Conference (ITC) for the test community. This issue and the following one showcase our relationships with the DAC and ITC forums.

DAC is the premier event in the electronic design automation community. For decades, the DAC exhibition floor has served as a catalyst for the commercialization of research that has evolved into marketable products and successful companies. DAC has also had an important role in nurturing a \$4 billion industry with more than 250 companies. Many of these companies started with nothing more than an idea, an algorithm, or a proven methodology.

DAC also represents a community of excellent researchers in design automation. Traditionally, *IEEE D&T* has had strong ties with the DAC community. In fact, several of our distinguished editorial board members are active participants in organizing the DAC technical program, as are many of our guest editors, authors, and readers. This issue pulls together a distinguished team of contributors in a special DAC section, with five articles (selected from a set of 10 papers nominated by the DAC technical program committee) that truly represent the best of DAC in practice. These articles feature technical advances that are the most likely to directly affect design practice. These contributions address diverse topics such as efficient simulation of phase-locked loops, protocol syn-

thesis, design verification, practical asynchronous circuit design, and low-power design. Although prompted by their excellent contribution to DAC, each of these articles was written as an original contribution to *IEEE D&T*. I thank guest editors David Blaauw and Luciano Lavagno, and DAC panels chair Sharad Malik, for their dedication in putting this issue together. I also thank Bryan Ackland (DAC general chair) and the DAC executive committee for lending their moral and financial support to *IEEE D&T*.

Preceding the special DAC section is a special issue on embedded processors. Guest editor Peter Marwedel has put together six articles (chosen from a total of 16 submitted manuscripts) that address the most pressing challenges in building systems for embedded processors. Topics range from at-speed testing of on-chip systems to the promise and challenges in developing embedded compiler technology.

Moreover, in *The Road Ahead*, Andrew Kahng addresses design cost and expands the notion of nonrecurring engineering cost.

Finally, I welcome Adit Singh to the editorial board as an area editor for defect-based test. It is truly the high caliber of professionals like Adit and the high quality of technical contributions to *IEEE D&T* that make my job so pleasant and rewarding. I hope you find this issue a valuable source of information and an important link to our community of fellow professionals.

A handwritten signature in cursive script that reads "Rajesh Gupta".

Rajesh Gupta
Editor in Chief
IEEE Design & Test of Computers