Editorial

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I just saw a special report, titled “Top Tech 2012,” that appeared in IEEE Spectrum (volume 49, number 1, January 2012). It cites fourteen technologies selected for their potential for wide scale application in the near future. One among those is 3-D integrated circuits. A major innovation is the manufacturing technology of through silicon via (TSV) that allows interconnects in the vertical direction as chips are stacked together and then placed within the same package. Although stacked memory and FPGA devices are the earliest ones likely to be manufactured this year, with the TSV technology in place, logic devices that combine many cores (processors, GPUs, memories, etc.) will not be far behind.

One of the challenges of the new 3-D IC technology is their testing. Many existing test structures such as boundary scan, or test methodologies such as test compression and power constrained test scheduling can be adopted to test these devices. However, testing of TSVs may not be as evolutionary. Their fault behavior and test and diagnosis methods have been topics of research in recent years. For the last 2 years, the *IEEE International Workshop on Testing Three-Dimensional Stacked Integrated Circuits* has provided a forum for discussion on the work in this area.

Given the above background, we think the time is right for the present special issue featuring “Testing of Three-Dimensional Stacked Integrated Circuits.” We are fortunate

to have Erik Jan Marinissen and Yervant Zorian as Guest Editors. Both are also regular editors of *JETTA* and are leading experts on this subject. They are the principal organizers of the IEEE Workshop as well and deserve credit for advancing this field. Please read more about this special issue in their Guest Editorial.

This is the first issue of volume 28 of *JETTA* and I should address several organizational items. We are adding five new editors to the editorial board of *JETTA*. They are Karim Arabi of Qualcomm, San Diego, California, USA, Said Hamdioui of Delft University of Technology, Delft, The Netherlands, Prabhat Mishra of University of Florida, Gainesville, Florida, USA, Haralampos Stratigopoulos of TIMA Laboratory, Grenoble, France, and Fabian Vargas of Catholic University – PUCRS, Porto Alegre, Brazil. Their pictures and biographies are included.

Retiring from the board are Michael Bushnell, C. P. Ravikumar, John Sheppard and Mani Soma. Each has served the journal for several years and we are grateful to them for their service.

Peer review is an essential and a very important part of our editorial procedure. A list of reviewers who conducted reviews for *JETTA* in 2011 appears in this issue. We acknowledge their contribution to the journal and thank them for devoting their expertise and time to serve the profession.

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