IEEE TTTC Forum in honor of Professor Melvin Breuer – A Report

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At the International Test Conference, 2006 held during October in Santa Claira, a half-day workshop was held to honor Prof. Melvin Breuer, who needs no introduction to the VLSI community. Prof. Breuer is a pioneer in the areas of VLSI design automation and test. His books in these areas have been used as popular text books over the past three decades. In a heart-warming function held at the Santa Clara Hyatt on October 27, his students and colleagues recounted their association with Mel and recounted many humorous anecdotes. Prof. Ed McCluskey, Prof. John Hayes, Prof. Sudhakar Reddy, Dr. Miron Abromovic and Prof. Vishwani Agrawal were among the senior associates who spoke on the occasion. Prof. Reddy, who made a presentation on the state-of-the-art in delay fault testing, unearthed a paper by Prof. Breuer where the term “delay fault” was first used, and credited Prof. Breuer for inventing the term.

The large number of pioneering contributions made by Prof. Breuer in the areas of testing were mentioned by many participants. A large number of his former and current students were present, including Dr Magdy Abadir, Dr. Miron Abromovic, Dr. S. Rajagopalan, Dr. Ishwar Parulkar, and many others. They recalled their student days and expressed their gratitude to Prof. Breuer for molding their careers and serving as a role model. Some past students who could not be present had sent notes that were read out by the organizers. Miron presented a slide show that included a number of pictures from Prof. Breuer’s personal collection. A student recounted how Prof. Breuer had once told his secretary to charge only half the cost of his travel to a funding agency since his wife had accompanied him on the trip. Several students recalled Prof. Breuer’s penchant for mathematical rigor, his sense of humor, and his uncompromising pursuit for excellence. Prof. Sandeep Gupta, a close associate of Prof. Breuer over the past 20 years, said how he enjoys arguing with Mel on both technical and non-technical topics. Prof. Sandip Kundu recollected how he had enjoyed a debate with Prof. Breuer so much that he decided to visit the University of Southern California to continue the argument! It was touching to see many participants, who were not directly associated with Prof. Breuer as students or co-workers, had come to show their appreciation for his contributions.

I am fortunate to have been a student of Prof. Breuer in a class on VLSI Testing that he taught at USC. His teaching left a profound impact on me. Although my own Ph.D. thesis was in the area of Physical Design Automation, I developed an interest in VLSI Test and pursued this area after I became a faculty at IIT Delhi. When I published my first paper on partial scan, I remember sending a copy to Prof. Breuer. He promptly replied, and sent me a few of his current publications. As a student in his class, I remember the clarity he brought to his lectures and his sense of humor that made the class so interesting. Our class met at 8.00 AM and he would occasionally bring donuts for the entire class. His book on Digital System Testing with Miron and Art was then in the press and we taught directly from the manuscript. A reward of one dollar was offered to any student who found a mistake. I can say I was truly enriched by Mel’s class – he handed me seven crisp dollar notes in the class for finding seven errors!

Prof. Breuer spoke at the end of the evening, and thanked his students and co-workers for putting the program together. He showed his proud collection of the hard-bound copies of the Ph.D. theses he had supervised and the many letters he had received over the years. His wife and son John were present and cherished the evening.

A committee consisting of Prof. Breuer’s past students had put the entire program together. Gopal, Ishwar, Miron, and Prof. John Hayes need particular mention for their efforts. The event was supported by IEEE TTTC and a few industry sponsors.

Melvin A. Breuer received his Ph.D. in electrical engineering from the University of California, Berkeley. He is a Professor of both Electrical Engineering and Computer Science at the University of Southern California, Los Angeles, California, where he has held the Charles Lee Powell Chair and has served as the Chair of the Faculty of the School of Engineering. His main interests are in the area of computer-aided design of digital systems, design-for-test and built-in self-test, and VLSI circuits.

Dr. Breuer is the editor and co-author of Design Automation of Digital Systems: Theory and Techniques, Prentice-Hall; editor of Digital Systems Design Automation: Languages, Simulation and Data Base, Computer Science Press; co-author of Diagnosis and Reliable Design of Digital Systems, Computer Science Press; co-editor of Computer Hardware Description Languages and their Applications, North-Holland; co-editor and contributor to Knowledge Based Systems for Test and Diagnosis, North-Holland; and co-author of Digital System Testing and Testable Design, Computer Science Press 1990 and reprinted in 1995 by the IEEE Press. He has published over 200 technical papers and was formerly the editor-in-chief of the Journal of Design Automation and Fault Tolerant Computing, on the editorial board of the Journal of Electronic Testing, the co-editor of the Journal of Digital Systems, and the Program Chairman of the Fifth International IFIP Conference on Computer Hardware Description Languages and Their Applications. He was co-author of a paper that received an honorable mention award at the 1997 International Test Conference, and the co-author of the best paper at the 2000 Asian Test Symposium.

Mel has received several honors. He is a Fellow of the IEEE. He received the IEEE Computer Society’s 1993 Taylor L. Booth Education Award.